

BUILDING
COMMON GROUND



Product List

valid from 1st February 2023



www.maxfrank.com



Spacers

| | |
|---|----|
| Fibre concrete spacers | 12 |
| Cast concrete spacers | 24 |
| Plastic spacers | 26 |
| Steel spacers | 29 |
| Fibre concrete distance tubes | 31 |
| Sealing cones and plugs | 35 |
| Spacers and distance tubes for drinking water application | 41 |

Formwork technologies

| | |
|---|----|
| Pecafil® permanent formwork | 46 |
| Stremaform® stay-in-place formwork for working joints | 51 |
| Stremaform® stay-in-place formwork for expansion joints | 64 |
| Tubbox® column former | 68 |
| Zemdrain® CPF liner | 73 |
| Balcony and ceiling edge formwork | 78 |
| Box-out shutters and recess formers | 81 |
| Trennfit release agent | 85 |
| Formwork accessories | 89 |

Reinforcement technologies

| | |
|--|-----|
| Egcobox® thermal break balcony connector | 94 |
| Egcobox® FST steel thermal break connector | 101 |
| Egcodorn® shear force dowel | 104 |
| Stabox® continuity strip | 111 |
| MAX FRANK Coupler threaded connection | 117 |

Sealing technologies

| | |
|---|-----|
| Zemseal® sub-structure waterproofing system | 124 |
| Fradiflex® metal waterstop | 127 |
| Intec® injection hose system | 132 |
| Cresco® expanding waterstop | 141 |

Building acoustics

| | |
|--|-----|
| Sorp 10® room-acoustic sound absorber | 146 |
| Egcopal impact sound insulated shear force dowel | 148 |
| Egcosono stair landing bearing | 152 |
| Egcostep® stair flight decoupling | 155 |
| Egcoscal stair beddings | 157 |
| Egcodist wall and floor bearings | 161 |
| Egcovoid® void former | 163 |



**BUILDING
COMMON GROUND**



OUR BUSINESS MODEL



We accompany our customers reliably through every building phase with a technically sophisticated and intensive intermeshing of industrial production, high-quality products and multifaceted services.

HOW WE WORK



We listen attentively and ask the right questions – questions that penetrate to the core of the task. We at MAX FRANK call that: “BUILDING COMMON GROUND”.

OUR STRENGTH



A wide range of products, high-quality product combinations, project solutions, intermeshing of planning, production and sales

CUSTOMER BENEFITS



Saving of costs and time, solution from a single source

THE COMMON APPROACH



Sustainable and safe reinforced concrete structures



MAX FRANK Group

- News
- Projects
- Company
- Careers
- Contact
- Buildings
- Products
- Service
- Download

Product Overview



Products

With a reference search you can pinpoint the exact MAX FRANK product for your solution even faster and more precisely: simple filtering and targeted searches.

Joint

Choose joint

Thermal insulation

Expanded polystyrene concrete quality

Reset filter

Save search

Formwork

Choose formwork

Sound insulation

Precast element

Sealing

Sealing with concreting

Fire protection

Force transfer

10 results found!



Continuity Strip Stabox - special coating



Continuity Strip Stabox - custom version SD



Continuity Strip Stabox - joint seal



Formwork elements for controlled crack joints Stremaforme with rubber water bar cage



Formwork elements for controlled crack joints Stremaforme with coated metal water stop



Formwork elements for expansion joints Stremaforme with rubber water bar cage and shear force transmission



Formwork elements for working joints Stremaforme - custom shapes



Formwork elements for working joints Stremaforme with rubber water bar cage



Formwork elements for working joints Stremaforme with metal water stop



Formwork elements for working joints Stremaforme with coated metal water stop

Follow us on



BUILDING
COMMON GROUND



MAX FRANK BUILDINGS

The popular tool is integrated in the website and linked with extensive product information. The virtual landscape provides you with the optimal products for the following types of structure: railway station, bridge, office building, high-rise building, industrial building, sewage plant, museum, drinking water tank, tunnel, hydroelectric power station and residential building.



PRODUCT FINDER

Simply filter by the application areas and product properties relevant for you and you will find the ideal product for your requirements.



Joint Designer

The joint designer shows the range of connection joints in concrete structures according to the classification between construction joints, predetermined crack joints, expansion joints, sound separation joints and settlement joints.



ALWAYS UP TO DATE

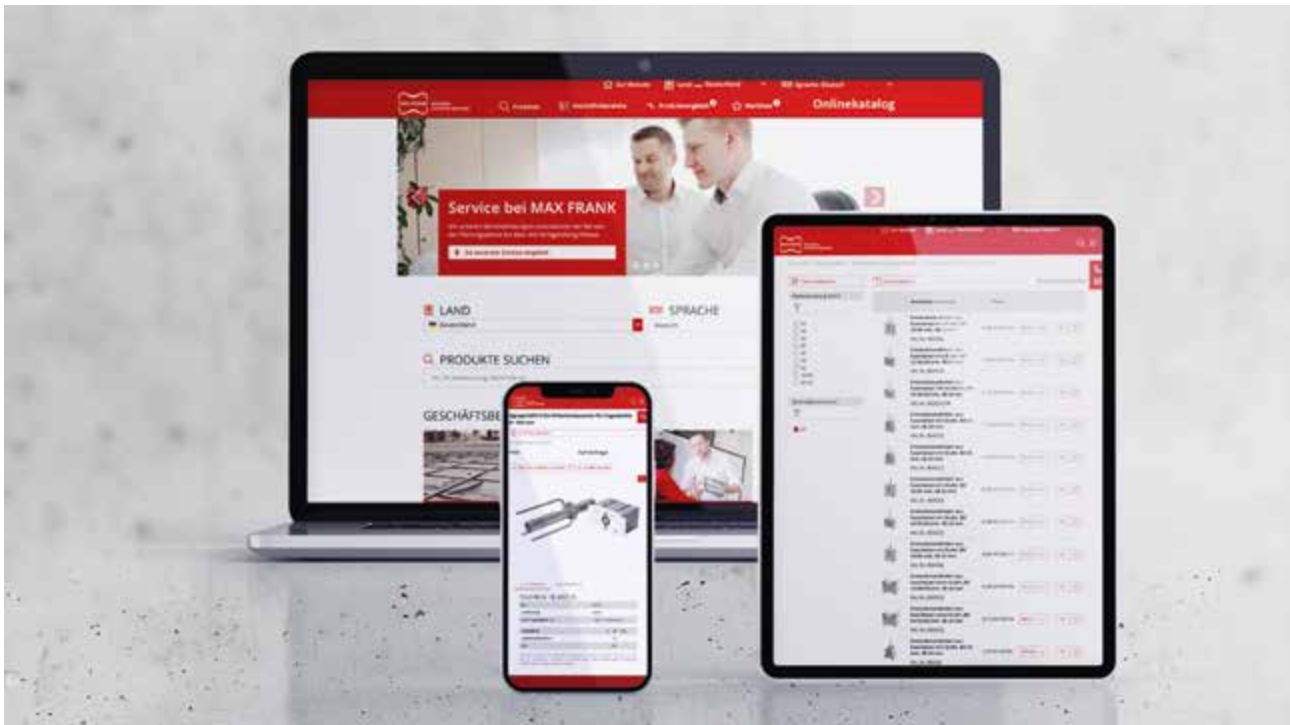
Never miss out! We keep you updated about new products, the latest software and special solutions. Simply sign up for our newsletter free of charge and without obligation and follow us on LinkedIn and YouTube!



ONLINE CATALOGUE

You can find current product and price information in our online catalogue. Also use functions such as the product comparison, the watch list or the PDF download of article information.





Online catalogue

Search, find and compare MAX FRANK articles.

From now on, this can be done easily online - with the new **online catalogue**.

In the online catalogue you will find a variety of product information, such as article numbers, pictures, descriptions, technical and logistics data and current prices.



Practical features:

Search and filter

With search and filter options you can quickly find the desired items.

Product comparison

Select up to ten items and compare their features at a glance.

Watchlist

Easily start a quote request for the items on the watch list.

Data sheet download

Create a PDF with the most important product information with just one click.

▶ Try the online catalog now



Service at MAX FRANK is multifaceted and therefore very personal.

With our services, we support you from the planning phase to beyond completion and create individual, holistic and economical project solutions together with you.

Our customer service team will be happy to advise you and is available Monday to Thursday from 7:30 a.m. to 5:00 p.m. and Fridays from 7:30 a.m. to 1:30 p.m.:



+49 9427 189-320



customerservice@maxfrank.de

Notes regarding the Product List

We generally deliver on the basis of our general terms and conditions of sale and in the defined packaging units. Information about this can be found in the respective product areas. Different delivery quantities are possible on request and by arrangement. We charge a minimum quantity surcharge for these fractional quantities. A freight rate will be charged for shipment.



MAX FRANK

BUILDING
COMMON GROUND

Spacers



Spacers

Spacers are used to ensure compliance of the concrete cover of reinforced concrete structures and components prior to and during the concreting process.



Fibre concrete spacers

12



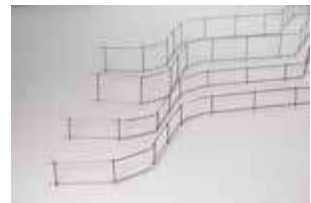
Cast concrete spacers

24



Plastic spacers

26



Steel spacers

29



Fibre concrete distance tubes

31



Sealing cones and plugs

35



Spacers and distance tubes for drinking water application

41

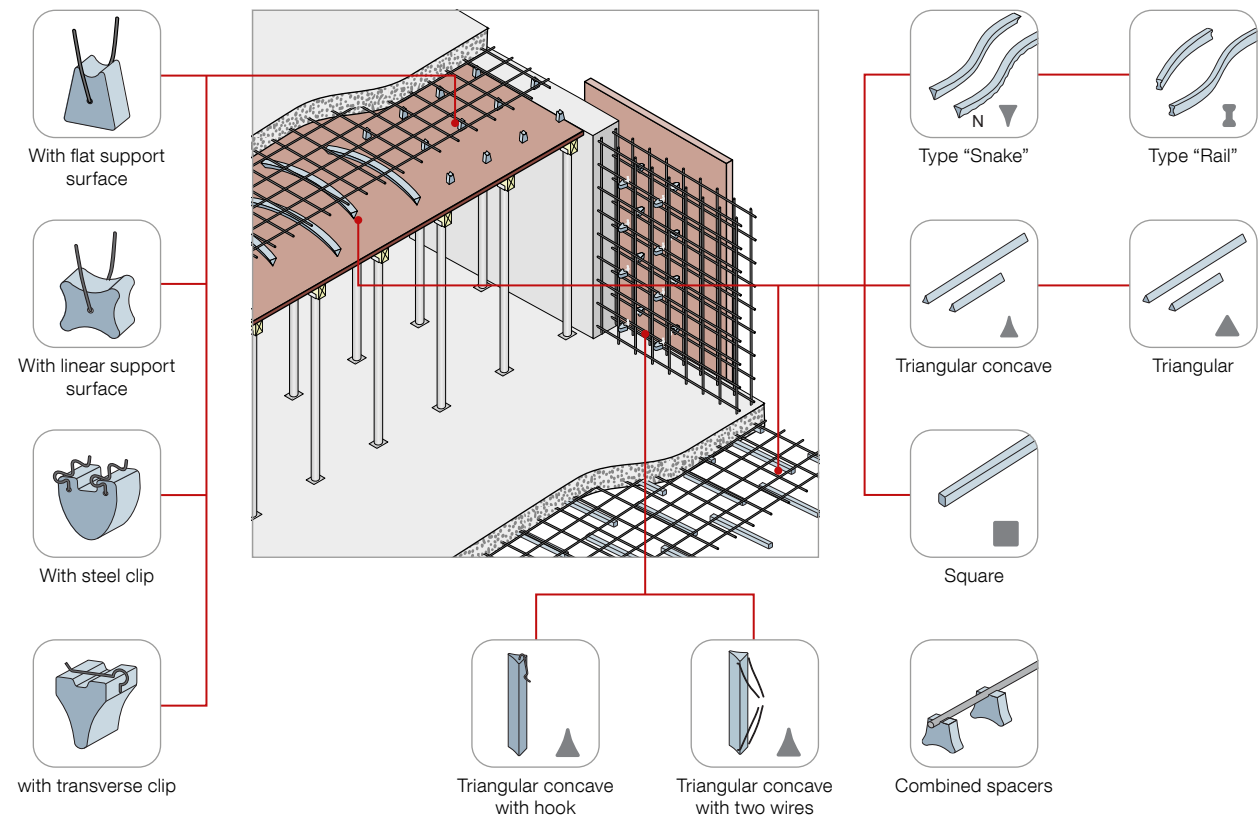


Fibre concrete spacers

Achieving the right amount of concrete cover is essential for the durability of reinforced concrete structures. Fibre concrete spacers ensure correct concrete cover before and during concreting. They are characterized by high compressive strength and excellent chemical and physical resistance. A test report according to DBV leaflet "Spacers – edition November 2019" is available from the German concrete association. The spacers fulfil the requirements of all exposure classes. All recipes used are tested by independent testing institutes with regard to the required properties.

★ Advantages

- High density with low porosity
- High load-bearing capacity
- Same material properties as the structural concrete
- Excellent bond with the structural concrete, no hairline cracks
- KOMO certified according to the Dutch assessment guideline BRL2817



Laying and requirement assessment

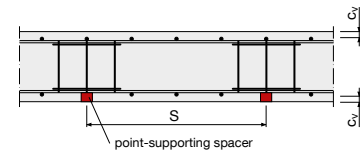
In the case of thin main bars, the flexure must be observed during the concreting process. In the case of heavy reinforcement, the compressive stress of the spacers must be checked.

The laying spacing depends primarily on the accepted flexure at the maximum load e.g. when walking on the reinforcement, especially when concreting. When placing bar spacers in the tensile zone, short pieces with a sufficient offset should be installed.

Guiding values according to the DBV data sheet "Concrete cover and reinforcement"

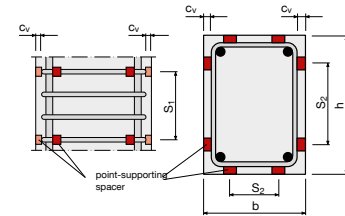
Component: Slabs

| Supported main bars \varnothing | max. S | Spacings S of the spacers | | | |
|-----------------------------------|--------|---------------------------|----------------------------------|-----------|-------------|
| | | Block spacers | Requirement, pcs. m ² | | |
| | | | L = 18 cm | L = 33 cm | L = 1000 cm |
| < 6,5 mm | 0,50 m | 4 | 3,0 | 2,5 | 1,33 |
| > 6,5 mm | 0,70 m | 2 | 1,6 | 1,4 | 0,84 |



Component: Beams and columns

| Spacings S of the spacers max. S ₁ in longitudinal direction | | |
|---|---------|--------|
| Longitudinal bars \varnothing | Columns | Beam |
| < 10 mm | 0,50 m | 0,25 m |
| 12 – 20 mm | 1,00 m | 0,50 m |
| > 20 mm | 1,25 m | 0,75 m |

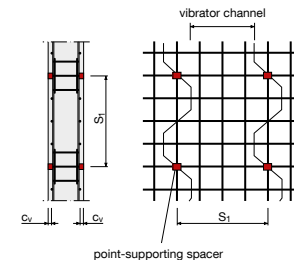


| Spacings S of the spacers max. S ₂ in transverse direction | | |
|---|-------------------|--------|
| b / h | Number, distances | |
| | Columns | Beam |
| < 1,00 m | 2x | 2x |
| > 1,00 m | ≥ 3x | ≥ 3x |
| max. S ₂ | 0,75 m | 0,50 m |

Component: Walls

| Main bars \varnothing | max. S ₁ | Spacings S ₁ and number | | |
|-------------------------|---------------------|------------------------------------|--|-----------|
| | | Block spacers | Requirement, pcs. m ² wall* | |
| | | | L = 18 cm | L = 33 cm |
| < 8 mm | 0,70 m | 4 | 1,6 | 1,4 |
| > 10 mm | 1,00 m | 2 | 1,0 | 0,8 |

* and per wall side



Fibre concrete block spacers

- High compressive strength, no deformation in heat or cold, concrete cover completely maintained
- Secure positioning when closing the formwork and when concreting
- Suitable for impermeable concrete, no hairline cracks between spacer and concrete
- Fire-resistant according to the maximum requirements of DIN 4102 - Class A1 (not flammable)

| Type series | AD | AD / BAD | AK | AK-Q | AB | AB |
|--------------------------|---------------------------|---------------------------|---------------------------|---------------------------|------------------|-----------------------|
| Drawing | | | | | | |
| Material quality | Fibre-reinforced concrete | Fibre-reinforced concrete | Fibre-reinforced concrete | Fibre-reinforced concrete | Cast concrete | Cast concrete |
| Fixing method | Wire | Wire | Double clip | Transverse clip | Shuttlecock clip | Concrete binding wire |
| Support surface | Flat | linear-supporting | linear-supporting | linear-supporting | point-supporting | Flat |
| horizontal reinforcement | + | + | - | - | + | + |
| vertical reinforcement | - | + | + | + | + | + |
| Exposed concrete | - | + | + | + | + | - |
| type group | B2 | B2 | B2 | B2 | B2 | B2 |

⊕ suitable ⊖ not suitable

Check suitability of spacer on a test surface before use with exposed concrete or self-compacting concrete (SSV).

Type groups according to DBV data sheet "Spacers" are: B1 = point-supporting, not fixed, B2 = point-supporting, fixed, C1 = linear-supporting, not fixed, C2 = linear-supporting, fixed

Spacer with wire

WG: 50




Made of fibre-reinforced concrete for horizontal and vertical reinforcement.

| | Item No. | Concrete cover | Cutting width | Packaging unit | Weight | Pallet content | Weight |
|--|----------|----------------|---------------|----------------|-------------------|----------------|-----------|
| | | mm | mm | Pcs | kg/packaging unit | Pcs | kg/pallet |
| | BAD25 | 25 | 24 | 600 | 21.00 | 24000 | 860 |
| | BAD30 | 30 | 24 | 600 | 22.80 | 24000 | 932 |
| | BAD35 | 35 | 24 | 500 | 23.50 | 20000 | 960 |
| | BAD40 | 40 | 24 | 400 | 23.80 | 16000 | 972 |
| | BAD50 | 50 | 24 | 250 | 19.50 | 10000 | 800 |
| | BAD60 | 60 | 24 | 250 | 23.75 | 10000 | 970 |
| | AD4012 | 40 | 24 | 250 | 20.75 | 10000 | 850 |
| | AD4512 | 45 | 24 | 250 | 22.00 | 10000 | 900 |
| | AD5013 | 50 | 28 | 200 | 24.00 | 8000 | 980 |
| | AD5513 | 55 | 28 | 175 | 23.45 | 7000 | 958 |
| | AD6013 | 60 | 28 | 175 | 25.38 | 7000 | 1035 |
| | AD3562 | 35/40 | 24 | 250 | 17.50 | 10000 | 720 |
| | AD4562 | 45/55 | 24 | 200 | 23.40 | 8000 | 956 |
| | AD5062 | 50/60 | 24 | 200 | 24.60 | 8000 | 1004 |
| | AD2071 | 20/25/30 | 20 | 750 | 21.75 | 30000 | 890 |
| | AD3572 | 35/40/50 | 24 | 250 | 24.00 | 10000 | 980 |
| | AD4572 | 45/55/60 | 24 | 125 | 19.13 | 5000 | 785 |

Spacer without wire

WG: 50


Made of fibre-reinforced concrete for horizontal reinforcement.

| | Item No. | Concrete cover mm | Cutting width mm | Packaging unit Pcs | Weight kg/packaging unit | Pallet content Pcs | Weight kg/pallet |
|---|----------|----------------------|---------------------|-----------------------|--------------------------------|-----------------------|---------------------|
|  | BAO25 | 25 | 24 | 600 | 19.80 | 24000 | 812 |
| | BAO30 | 30 | 24 | 600 | 21.60 | 24000 | 884 |
| | BAO35 | 35 | 24 | 500 | 22.50 | 20000 | 920 |
| | BAO40 | 40 | 24 | 400 | 22.72 | 16000 | 929 |
| | BAO50 | 50 | 24 | 250 | 18.75 | 10000 | 770 |
|  | AO2071 | 20/25/30 | 20 | 750 | 21.00 | 30000 | 860 |
| | AO3572 | 35/40/50 | 24 | 250 | 23.25 | 10000 | 950 |
| | AO4572 | 45/55/60 | 24 | 125 | 18.75 | 5000 | 770 |
|  | AO5013 | 50 | 28 | 200 | 23.20 | 8000 | 948 |
| | AO5513 | 55 | 28 | 175 | 22.93 | 7000 | 937 |
| | AO6013 | 60 | 28 | 175 | 25.03 | 7000 | 1021 |

Spacers with steel clip

WG: 50



Made of fibre-reinforced concrete for vertical reinforcement.

| | Description | Item No. | Concrete cover mm | Cutting width mm | Packaging unit Pcs | Pallet content Pcs | Weight kg/pallet |
|--|---|----------|----------------------|---------------------|-----------------------|-----------------------|---------------------|
|  | Clamp for steel up to 8 mm in diameter | AK25RA | 25 | 20 | 1000 | 40000 | 980 |
| | | AK30RA | 30 | 20 | 750 | 30000 | 890 |
| | | AK35RA | 35 | 20 | 500 | 20000 | 720 |

Spacers with transverse clip

WG: 50


Made of fibre-reinforced concrete for vertical reinforcement.

| | Description | Item No. | Concrete cover mm | Cutting width mm | Packaging unit Pcs | Pallet content Pcs | Weight kg/pallet |
|---|---|-----------|----------------------|---------------------|-----------------------|-----------------------|---------------------|
|  | Groove for steel diameter 3 - 10 mm for external reinforcement | AK30S5Q10 | 30 | 36 | 250 | 10000 | 720 |
| | | AK35S5Q10 | 35 | 36 | 250 | 10000 | 790 |
| | | AK40S6Q10 | 40 | 36 | 250 | 10000 | 930 |
|  | Groove for steel diameter 12 - 16 mm for internal reinforcement | AK30S5Q16 | 30 | 36 | 250 | 10000 | 720 |
| | | AK35S5Q16 | 35 | 36 | 250 | 10000 | 830 |
| | | AK40S6Q16 | 40 | 36 | 250 | 10000 | 920 |

“Rondo” round spacer

WG: 50


Round spacer made of fibre-reinforced concrete for wrapping prefabricated reinforcement cages in formwork. When using Tubbox® column formers, the round spacer simplifies the insertion of the reinforcement cage. For steel diameters up to 12 mm.

| | Item No. | Concrete cover mm | Cutting width mm | Packaging unit Pcs | Weight kg/packaging unit | Pallet content Pcs | Weight kg/pallet |
|---|---------------|----------------------|---------------------|-----------------------|--------------------------------|-----------------------|---------------------|
|  | RONDO03002512 | 30 | 25 | 110 | 23.98 | 4400 | 979 |
| | RONDO03502512 | 35 | 25 | 100 | 25.50 | 4000 | 1040 |
| | RONDO04002512 | 40 | 25 | 60 | 20.52 | 2400 | 841 |
| | RONDO05002512 | 50 | 25 | 40 | 24.08 | 1600 | 983 |

Pile cage spacers "AROLLE"



WG: 50

Round spacers attached to horizontal reinforcement allow the reinforcement to formally enter the drill hole. For steel diameters up to 12 mm (hole diameter 15 mm).

| | Item No. | Concrete cover mm | Cutting width mm | Packaging unit Pcs | Weight kg/packaging unit | Pallet content Pcs | Weight kg/pallet |
|--|---|----------------------|---------------------|-----------------------|--------------------------------|-----------------------|---------------------|
| |  | AR0208515 | 35 | 20 | 100 | 24.00 | 4000 |
| | AR02010515 | 45 | 20 | 50 | 17.30 | 2500 | 885 |

Binding wire

WG: 180

| | Description | Item No. | Wire thickness mm | Weight kg/packaging unit | Pallet content Packaging unit | Weight kg/pallet |
|---|---|----------|----------------------|--------------------------------|----------------------------------|---------------------|
|  | Binding wire roll BR 1.4 black toughened | HSBDRS14 | 1.4 | 20.00 | 36 | 740 |
|  | Binding wire roll BR 1.4 galvanized | HSBDRV14 | 1.4 | 20.00 | 36 | 740 |

Fibre concrete bar spacers

- High compressive strength, no deformation in heat or cold, concrete cover completely maintained
- Suitable for impermeable concrete, no hairline cracks between spacer and concrete
- Large support surface - no impressions in the formwork
- Fire-resistant according to the maximum requirements of DIN 4102 - Class A1 (not flammable)
- All bar spacers from a length of 330 mm are provided with an interior reinforcement fibre for high protection against breakage

| | Snake, Snake N, Banana N | Rail, Rail B | Triangular | Triangular concave | Triangular concave with hook | Triangular concave with binding wire | Square | Round | Combined spacers |
|--------------------------|--------------------------|----------------|------------|--------------------|------------------------------|--------------------------------------|--------|-------|------------------|
| Type series | FAHKS FAHKBN | FAHSS FAHSB | FAHD | FAHK | FAHDH | FAHKZD | FAHV | FAHR | KOMBST |
| Drawing | | | | | | | | | |
| horizontal reinforcement | + | + | + | + | - | ○ | + | + | + |
| vertical reinforcement | - | - | - | - | + | + | - | - | - |
| Exposed concrete | ○ | - | - | - | ○ | ○ | - | ○ | + |
| type group | C1 | C1 | C1 | C1 | C2 | C2 | C1 | C1 | B1 / C1 |

⊕ suitable ○ conditionally suitable ⊖ not suitable

Check suitability of spacer on a test surface before use with exposed concrete or self-compacting concrete (SSV).

Type groups according to DBV data sheet "Spacers" are: B1 = point-supporting, not fixed, B2 = point-supporting, fixed, C1 = linear-supporting, not fixed, C2 = linear-supporting, fixed

Bar spacer type "Snake"

WG: 54

Made of fibre-reinforced concrete for horizontal mesh and rod reinforcement.

| | Item No. | Concrete cover mm | Length mm | Weight kg/pce | Pallet content Pcs | Weight kg/pallet |
|--|------------|-------------------|-----------|---------------|--------------------|------------------|
| | FAHKS20100 | 20 | 1000 | 0.54 | 1250 | 695 |
| | FAHKS25100 | 25 | 1000 | 0.70 | 1000 | 720 |
| | FAHKS30100 | 30 | 1000 | 0.81 | 1000 | 830 |
| | FAHKS35100 | 35 | 1000 | 1.03 | 750 | 792 |
| | FAHKS40100 | 40 | 1000 | 1.27 | 600 | 782 |
| | FAHKS45100 | 45 | 1000 | 1.41 | 500 | 725 |
| | FAHKS50100 | 50 | 1000 | 1.74 | 500 | 890 |
| | FAHKS55100 | 55 | 1000 | 1.92 | 400 | 788 |
| | FAHKS60100 | 60 | 1000 | 2.20 | 350 | 790 |
| | FAHKS20080 | 20 | 800 | 0.43 | 1250 | 558 |
| | FAHKS25080 | 25 | 800 | 0.56 | 1250 | 720 |
| | FAHKS30080 | 30 | 800 | 0.64 | 1250 | 820 |
| | FAHKS35080 | 35 | 800 | 0.83 | 1000 | 852 |
| | FAHKS40080 | 40 | 800 | 1.02 | 750 | 785 |
| | FAHKS45080 | 45 | 800 | 1.13 | 600 | 698 |
| | FAHKS50080 | 50 | 800 | 1.39 | 600 | 854 |

Lengths can be subject to production-related tolerance.

Bar spacer type "Snake N"

WG: 54

Made of fibre-reinforced concrete with nubs for horizontal mesh and rod reinforcement.


| | Item No. | Concrete cover | Length | Weight | Pallet content | Weight |
|---|------------|----------------|--------|--------|----------------|-----------|
| | | mm | mm | kg/pce | Pcs | kg/pallet |
|  | FAHKS20100 | 20 | 1000 | 0.57 | 1250 | 733 |
| | FAHKS25100 | 25 | 1000 | 0.71 | 1000 | 734 |
| | FAHKS30100 | 30 | 1000 | 0.79 | 1000 | 810 |
| | FAHKS35100 | 35 | 1000 | 1.07 | 750 | 823 |
| | FAHKS40100 | 40 | 1000 | 1.26 | 600 | 776 |
| | FAHKS45100 | 45 | 1000 | 1.43 | 500 | 735 |
| | FAHKS50100 | 50 | 1000 | 1.71 | 500 | 875 |
| | FAHKS55100 | 55 | 1000 | 1.93 | 400 | 792 |
| | FAHKS60100 | 60 | 1000 | 2.07 | 350 | 745 |
| | FAHKS20080 | 20 | 800 | 0.46 | 1250 | 595 |
| | FAHKS25080 | 25 | 800 | 0.54 | 1250 | 695 |
| | FAHKS30080 | 30 | 800 | 0.63 | 1250 | 808 |
| | FAHKS35080 | 35 | 800 | 0.86 | 1000 | 880 |
| | FAHKS40080 | 40 | 800 | 1.01 | 750 | 778 |
| | FAHKS45080 | 45 | 800 | 1.14 | 600 | 704 |
| | FAHKS50080 | 50 | 800 | 1.36 | 600 | 836 |

Lengths can be subject to production-related tolerance.

Bar spacer type "Banana N"

WG: 54

Made of fibre-reinforced concrete with nubs for horizontal mesh reinforcement.


| | Item No. | Concrete cover | Length | Weight | Pallet content | Weight |
|---|------------|----------------|--------|--------|----------------|-----------|
| | | mm | mm | kg/pce | Pcs | kg/pallet |
|  | FAHKBN2033 | 20 | 330 | 0.22 | 4050 | 915 |
| | FAHKBN2533 | 25 | 330 | 0.27 | 3375 | 945 |
| | FAHKBN3033 | 30 | 330 | 0.32 | 2700 | 895 |
| | FAHKBN3533 | 35 | 330 | 0.41 | 2160 | 910 |
| | FAHKBN4033 | 40 | 330 | 0.49 | 1890 | 950 |
| | FAHKBN4533 | 45 | 330 | 0.53 | 1350 | 740 |
| | FAHKBN5033 | 50 | 330 | 0.57 | 1080 | 640 |
| | FAHKBN2025 | 20 | 250 | 0.17 | 5400 | 938 |
| | FAHKBN2525 | 25 | 250 | 0.20 | 4050 | 838 |
| | FAHKBN3025 | 30 | 250 | 0.25 | 3510 | 880 |
| | FAHKBN3525 | 35 | 250 | 0.31 | 2970 | 950 |
| | FAHKBN4025 | 40 | 250 | 0.37 | 2700 | 1006 |
| | FAHKBN4525 | 45 | 250 | 0.41 | 2430 | 1004 |
| | FAHKBN5025 | 50 | 250 | 0.44 | 2160 | 979 |

Lengths can be subject to production-related tolerance.

Bar spacer type "Rail"

WG: 54

Made of fibre-reinforced concrete for horizontal mesh and rod reinforcement.


| | Item No. | Concrete cover | Length | Weight | Pallet content | Weight |
|---|------------|----------------|--------|--------|----------------|-----------|
| | | mm | mm | kg/pce | Pcs | kg/pallet |
|  | FAHSS30100 | 30 | 1000 | 0.84 | 1000 | 860 |
| | FAHSS35100 | 35 | 1000 | 1.09 | 750 | 835 |
| | FAHSS40100 | 40 | 1000 | 1.15 | 600 | 710 |
| | FAHSS45100 | 45 | 1000 | 1.45 | 500 | 745 |
| | FAHSS50100 | 50 | 1000 | 1.70 | 500 | 870 |
| | FAHSS55100 | 55 | 1000 | 2.10 | 400 | 860 |
| | FAHSS60100 | 60 | 1000 | 2.43 | 350 | 870 |

Lengths can be subject to production-related tolerance.

Triangular bar spacers

WG: 52

Made of fibre-reinforced concrete for horizontal mesh and rod reinforcement with continuous reinforcement threads.


| | Item No. | Concrete cover | Length | Weight | Packaging unit | Pallet content | Weight |
|---|------------|----------------|--------|-------------------|----------------|----------------|-----------|
| | | mm | mm | kg/packaging unit | Pcs | Pcs | kg/pallet |
|  | FAHD020100 | 20 | 1000 | - | - | 1500 | 995 |
| | FAHD025100 | 25 | 1000 | - | - | 1000 | 1020 |
| | FAHD030100 | 30 | 1000 | - | - | 800 | 1148 |
| | FAHD035100 | 35 | 1000 | - | - | 600 | 1172 |
| | FAHD040100 | 40 | 1000 | - | - | 400 | 1024 |
| | FAHD045100 | 45 | 1000 | - | - | 350 | 1130 |
| | FAHD050100 | 50 | 1000 | - | - | 300 | 1181 |
| | FAHD055100 | 55 | 1000 | - | - | 250 | 1178 |
| | FAHD030033 | 30 | 330 | 35.25 | 75 | 2475 | 1183 |
| | FAHD035033 | 35 | 330 | 37.86 | 60 | 1980 | 1269 |
| | FAHD040033 | 40 | 330 | 41.50 | 50 | 1650 | 1390 |
| | FAHD050033 | 50 | 330 | 42.24 | 33 | 1089 | 1414 |
| | FAHD055033 | 55 | 330 | 38.25 | 25 | 825 | 1282 |

Lengths can be subject to production-related tolerance.

Triangular concave bar spacers

WG: 52

Made of fibre-reinforced concrete for horizontal mesh and rod reinforcement with continuous reinforcement threads.


| | Item No. | Concrete cover | Length | Weight | Pallet content | Weight |
|--|------------|----------------|--------|--------|----------------|-----------|
| | | mm | mm | kg/pce | Pcs | kg/pallet |
|  | FAHK025100 | 25 | 1000 | 0.81 | 1000 | 830 |
| | FAHK030100 | 30 | 1000 | 1.02 | 1000 | 1035 |
| | FAHK035100 | 35 | 1000 | 1.34 | 750 | 1025 |
| | FAHK040100 | 40 | 1000 | 1.78 | 600 | 1090 |
| | FAHK045100 | 45 | 1000 | 1.96 | 500 | 1000 |
| | FAHK050100 | 50 | 1000 | 1.91 | 500 | 973 |
| | FAHK055100 | 55 | 1000 | 2.63 | 400 | 1070 |

Lengths can be subject to production-related tolerance.

Triangular concave bar spacers with hook clip

WG: 52

Depending on the distance between the horizontal reinforcement layers. Made of fibre-reinforced concrete for vertical reinforcement.

| | Item No. | Concrete cover | Length | Packaging unit | Weight | Pallet content | Weight |
|---|------------|----------------|--------|----------------|-------------------|----------------|-----------|
| | | mm | mm | Pcs | kg/packaging unit | Pcs | kg/pallet |
|  | FAHDH20018 | 20 | 180 | 200 | 25.60 | 6400 | 839 |
| | FAHDH25018 | 25 | 180 | 130 | 24.96 | 4160 | 819 |
| | FAHDH30018 | 30 | 180 | 125 | 24.75 | 3000 | 614 |
| | FAHDH35018 | 35 | 180 | 100 | 25.80 | 2400 | 639 |
| | FAHDH40018 | 40 | 180 | 75 | 19.43 | 1800 | 486 |
| | FAHDH45018 | 45 | 180 | 60 | 22.92 | 1440 | 570 |
| | FAHDH50018 | 50 | 180 | 50 | 22.90 | 1200 | 570 |
| | FAHDH55018 | 55 | 180 | 50 | 24.60 | 1200 | 610 |
| | FAHDH60018 | 60 | 180 | 44 | 25.12 | 1408 | 824 |
| | FAHDH20033 | 20 | 330 | 150 | 34.35 | 3600 | 844 |
| | FAHDH25033 | 25 | 330 | 65 | 23.40 | 2080 | 769 |
| | FAHDH30033 | 30 | 330 | 75 | 26.48 | 1800 | 655 |
| | FAHDH35033 | 35 | 330 | 55 | 24.81 | 1760 | 814 |
| | FAHDH40033 | 40 | 330 | 50 | 26.05 | 1200 | 645 |
| | FAHDH45033 | 45 | 330 | 37 | 25.05 | 1184 | 822 |
| | FAHDH50033 | 50 | 330 | 30 | 24.63 | 960 | 808 |
| | FAHDH55033 | 55 | 330 | 28 | 24.92 | 896 | 817 |
| | FAHDH60033 | 60 | 330 | 25 | 26.05 | 800 | 854 |

Clip type "PL" for steel diameters max. 16 mm.

Lengths can be subject to production-related tolerance.

Square bar spacers

WG: 52

Made of fibre-reinforced concrete for heavy, horizontal reinforcement with continuous reinforcement threads.

| | Item No. | Concrete cover | Length | Weight | Pallet content | Weight |
|--|---------------|----------------|--------|--------|----------------|-----------|
| | | mm | mm | kg/pce | Pcs | kg/pallet |
| | FAHV025025100 | 25 | 1000 | 1.32 | 850 | 1142 |
| | FAHV030030100 | 30 | 1000 | 1.89 | 600 | 1154 |
| | FAHV035035100 | 35 | 1000 | 2.58 | 450 | 1181 |
| | FAHV040040100 | 40 | 1000 | 3.39 | 350 | 1207 |
| | FAHV050050100 | 50 | 1000 | 5.38 | 200 | 1096 |
| | FAHV060060100 | 60 | 1000 | 7.71 | 150 | 1177 |

Other dimensions and rectangular profiles available on request.
Lengths can be subject to production-related tolerance.

Combined spacer with structural steel rail

WG: 56

Fibre-reinforced concrete spacer with structural steel rail, suitable for non-walkable reinforcement, especially in precast plants.

| | Item No. | Concrete cover | Weight | Pallet content | Weight |
|--|-------------|----------------|--------|----------------|-----------|
| | | mm | kg/pce | Pcs | kg/pallet |
| | KOMBST25110 | 25 | 0.40 | 1000 | 420 |
| | KOMBST30110 | 30 | 0.45 | 1000 | 470 |
| | KOMBST35110 | 35 | 0.51 | 1000 | 533 |
| | KOMBST40110 | 40 | 0.53 | 1000 | 550 |

Steel bar within tolerance dimension of the concrete cover.
Lengths can be subject to production-related tolerance.
Production length approx. 1100 mm with 6 spacers.

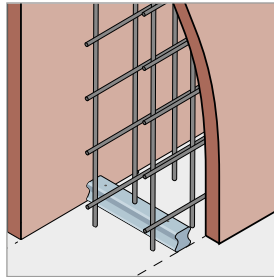
Spacer for special applications

Due to the function and use of a building, spacers often have to meet quality requirements that aren't covered by the standard requirements for spacers. In order to ensure that you always have the correct spacer, we can manufacture special spacers according to your requirements.

- Drinking water compatibility
- Individual installation situations
- Reduced water absorption
- Chloride resistance
- Sulphate resistance
- Exposed concrete application

Formwork kicker made of fibre-reinforced concrete

As a continuous stop spacer between the formwork, square profiles 40 x 40 mm with 2 nail holes.



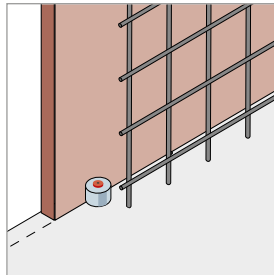
WG: 66

| Item No. | Length mm | Packaging unit Pcs | Weight kg/packaging unit | Pallet content Pcs | Weight kg/pallet |
|-----------|-----------|--------------------|--------------------------|--------------------|------------------|
| SAV400150 | 150 | 95 | 35.63 | 3420 | 1303 |
| SAV400200 | 200 | 65 | 32.50 | 2340 | 1190 |

Further dimensions available on request.

Formwork kicker made of fibre-reinforced concrete

As stop spacer between the formwork.



WG: 66

| Description | Item No. | Height mm | External diameter mm | Packaging unit Pcs | Pallet content Pcs | Weight kg/packaging unit |
|---------------------------------|----------|-----------|----------------------|--------------------|--------------------|--------------------------|
| With nail insert (without nail) | SAR60N | 40 | 60 | 100 | 4000 | 22.50 |

When using power-actuated fasteners, it is recommended that you always perform a test assembly to determine the correct cartridge thickness and the correct device setting on site. This can prevent damage to the formwork stops.

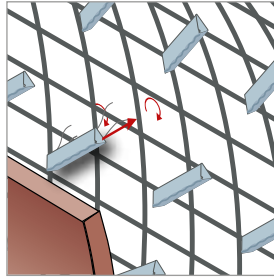
Nail for power-actuated fastener

WG: 66

| Item No. | Diameter mm | Length mm | Packaging unit Pcs | Weight kg/packaging unit |
|----------|-------------|-----------|--------------------|--------------------------|
| SAFBRN72 | 3,7 | 72 | 100 | 1.00 |

Bar spacer, triangular concave with nubs and two wires, equilateral shape

Made of fibre-reinforced concrete for secure fixing in every installation position with large support width.



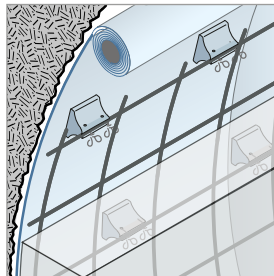
WG: 52

| Item No. | Concrete cover mm | Length mm | Weight kg/pce | Pallet content Pcs | Weight kg/pallet |
|---------------|----------------------|--------------|------------------|-----------------------|---------------------|
| FAHKZDN600220 | 60 | 220 | 0.84 | 1250 | 1071 |
| FAHKZDN650220 | 65 | 220 | 0.75 | 1200 | 920 |

Lengths can be subject to production-related tolerance.

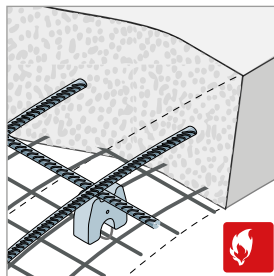
Tunnel spacers

In tunnel construction, sealing films are used on the mountain side in the closed tunnel construction method. The large support surface of the tunnel spacers ensures that the spacer has the necessary stability and that the sealing film is not damaged.



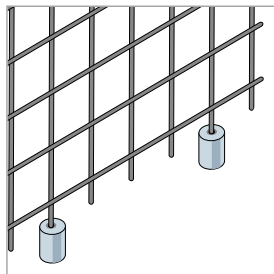
Spacer for fire protection reinforcement

Made of fibre-reinforced concrete for the simultaneous securing of the concrete cover of supporting and fire protection reinforcement for tunnel structures.



Reinforcement support

Made of fibre-reinforced concrete for supporting rebars. The reinforcement support consists of a fibre-reinforced concrete cylinder and a plastic dowel for fixing the reinforcement. The plastic dowels automatically clamp the reinforcing bars when pushed into the dowels.





WG: 50

| Description | Item No. | Concrete cover mm | Height mm | External diameter mm | Packaging unit Pcs | Weight kg/packaging unit | Weight kg/pallet |
|--|-----------|----------------------|--------------|-------------------------|-----------------------|-----------------------------|---------------------|
| Suitable for steel diameter 6 - 10 mm | FBSP53530 | 30 | 50 | 35 | 250 | 25.00 | 1020 |
| | FBSP53535 | 35 | 55 | 35 | 200 | 22.00 | 900 |
| | FBSP53540 | 40 | 60 | 35 | 200 | 24.00 | 980 |
| | FBSP53550 | 50 | 70 | 35 | 175 | 24.50 | 1000 |

Spacer for concrete pipe production

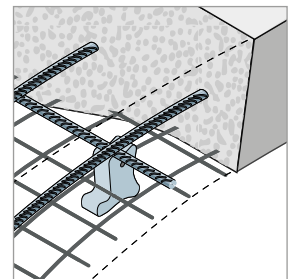
WG: 50

| | Description | Item No. | Concrete cover mm | Cutting width mm | Packaging unit Pcs | Weight kg/packaging unit | Pallet content Pcs | Weight kg/pallet |
|---|--|----------|-------------------|------------------|--------------------|--------------------------|--------------------|------------------|
|  | Transverse groove for steel diameter 8 mm, clamp for steel diameter 6 mm | AK30Q3K | 30 | 28 | 250 | 22.00 | 10000 | 900 |
| | | AK35Q3K | 35 | 28 | 250 | 23.75 | 10000 | 970 |
| | | AK40Q3K | 40 | 28 | 200 | 22.20 | 8000 | 908 |
|  | Longitudinal groove for steel diameter 6 mm, clamp for steel diameter 8 mm | AK30L10K | 30 | 55 | 250 | 18.75 | 10000 | 770 |
| | | AK35L10K | 35 | 55 | 250 | 20.00 | 10000 | 820 |
| | | AK40L10K | 40 | 55 | 250 | 22.50 | 10000 | 920 |

Transverse and longitudinal groove for steel diameter 8 to 10 mm available for all types.

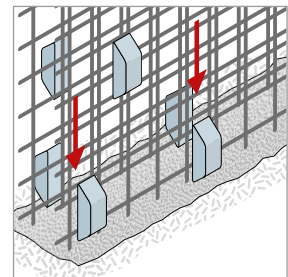
Spacer “shoe shape”

“Shoe-shape” spacers are provided with a nail hole and are suitable for the use of inclined formwork. The spacer can be fixed with a nail and slipping is thus ruled out.



Diaphragm wall spacers

Spacers for diaphragm walls prevent the reinforcement from coming into contact with the building site wall and enable tilt-free lowering of large reinforcement units thanks to the specially shaped profile.





Cast concrete spacers

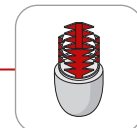
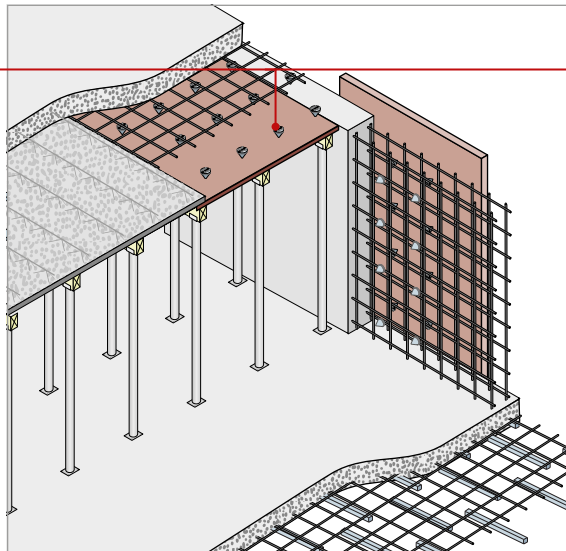
Cast concrete spacers are used to guarantee concrete cover in case of high requirements for the concrete surface. A test report according to DBV leaflet "Spacers – edition November 2019" is available from the German concrete association.

✚ Advantages

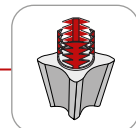
- Cast concrete spacers, no heat/cold deformation
- Absolute guarantee of concrete cover
- Various attachment options for quick and easy fixing
- Precise positioning
- Homogeneous bond, no hairline cracks between spacer and concrete
- Spacers made of cast concrete can be produced in various concrete covers and dimensions.
- Fire-resistant according to the maximum requirements of DIN 4102 – Class A1 (not flammable)



With wire




With shuttlecock clip



With shuttlecock clip

Spacer with plastic clip



WG: 185

| | Description | Item No. | Concrete cover mm | Packaging unit Pcs | Weight kg/packaging unit | Pallet content Pcs | Weight kg/pallet |
|---|---|-----------|-------------------|--------------------|--------------------------|--------------------|------------------|
|  | For vertical and horizontal reinforcement, clamp for steel diameter 12 mm | AB20HLZ10 | 20 | 250 | 10.25 | 10000 | 430 |
| | | AB30HLZ10 | 30 | 250 | 12.75 | 10000 | 530 |
| | | AB40HLZ10 | 40 | 250 | 20.75 | 10000 | 850 |
| | | | | | | | |

Further types made of cast concrete available on request.

Spacer with shuttlecock clip


WG: 185

| | Description | Item No. | Concrete cover mm | Packaging unit Pcs | Weight kg/packaging unit | Pallet content Pcs | Weight kg/pallet |
|---|---|----------|-------------------|--------------------|--------------------------|--------------------|------------------|
|  | For vertical reinforcement, steel diameter 4 - 10 mm | AB25HRF | 25 | 250 | 8.00 | 10000 | 340 |
| | | AB30HRF | 30 | 250 | 9.75 | 10000 | 410 |
| | | AB35HRF | 35 | 250 | 12.00 | 10000 | 500 |
| | | AB40HRF | 40 | 250 | 13.75 | 10000 | 570 |
|  | For vertical and horizontal reinforcement, steel diameter 4 - 10 mm | AB25HVF | 25 | 250 | 11.50 | 10000 | 480 |
| | | AB30HVF | 30 | 250 | 14.75 | 10000 | 610 |
| | | AB35HVF | 35 | 250 | 17.75 | 10000 | 730 |
| | | AB40HVF | 40 | 250 | 20.75 | 10000 | 850 |
| | | AB45HVF | 45 | 250 | 27.50 | 10000 | 1120 |
| | | AB50HVF | 50 | 200 | 25.60 | 8000 | 1044 |

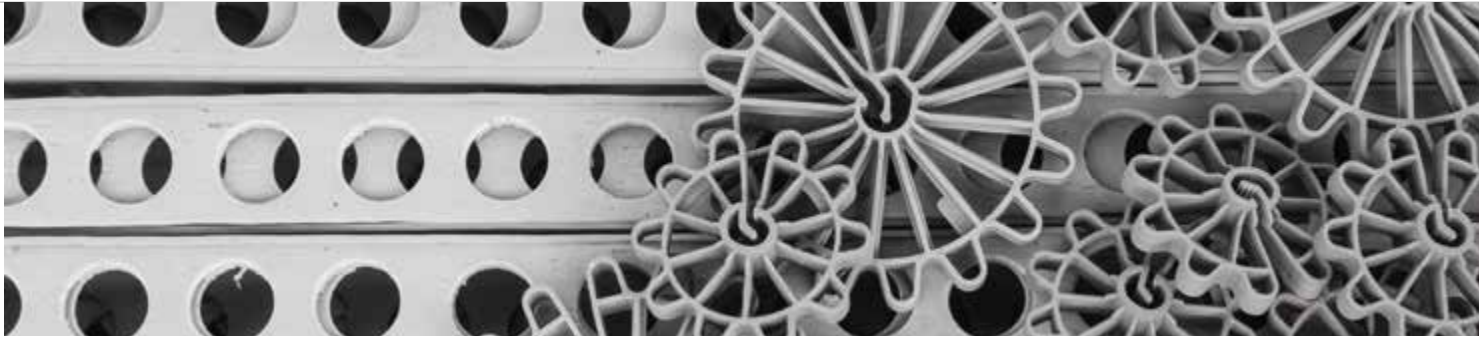
Further types made of cast concrete available on request.

Spacer with loop wire

WG: 185

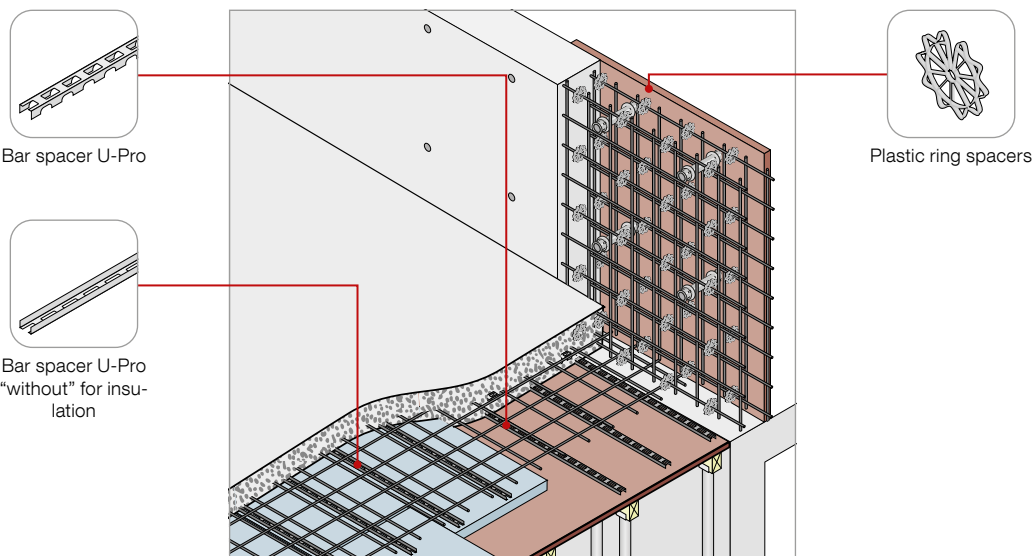
| | Description | Item No. | Concrete cover mm | Packaging unit Pcs | Weight kg/packaging unit | Pallet content Pcs | Weight kg/pallet |
|---|---|-----------|-------------------|--------------------|--------------------------|--------------------|------------------|
|  | For vertical and horizontal reinforcement, with galvanized eye wire | AB20HFOED | 20 | 400 | 22.80 | 20000 | 1160 |
| | | AB25HFOED | 25 | 250 | 18.25 | 15000 | 1115 |
| | | AB30HFOED | 30 | 250 | 22.00 | 12500 | 1120 |
| | | AB35HFOED | 35 | 250 | 26.25 | 10000 | 1070 |
| | | AB40HFOED | 40 | 250 | 27.75 | 10000 | 1130 |
| | | AB45HFOED | 45 | 200 | 25.40 | 8000 | 1036 |
| | | AB50HFOED | 50 | 200 | 29.00 | 6000 | 890 |
| | | AB55HFOED | 55 | 150 | 24.75 | 6000 | 1010 |
| | | AB60HFOED | 60 | 150 | 43.20 | 6000 | 1748 |
| | | | | | | | |

Further types made of cast concrete available on request.




Plastic spacers

Spacers ensure the concrete cover before and during concreting. In the case of simple interior components, plastic spacers are a cost-effective alternative to the tried and tested fibre-reinforced concrete spacers and to spacers made of cast concrete.



Plastic ring spacers



WG: 164

| | Item No. | Concrete cover | For steel diameters | Packaging unit | Weight | Pallet content | Weight |
|---|----------|----------------|---------------------|----------------|-------------------|----------------|-----------|
| | | mm | mm | Pcs | kg/packaging unit | Pcs | kg/pallet |
|  | KRA15 | 15 | 4 - 12 | 1000 | 2.80 | 60000 | 188 |
| | KRA20 | 20 | 4 - 12 | 1000 | 4.00 | 50000 | 220 |
| | KRA25 | 25 | 4 - 12 | 500 | 3.05 | 30000 | 203 |
| | KRA30 | 30 | 4 - 12 | 500 | 4.70 | 20000 | 208 |
| | KRA35 | 35 | 4 - 12 | 200 | 3.20 | 12000 | 212 |
| | KRA40 | 40 | 4 - 12 | 125 | 2.16 | 10000 | 193 |
| | KRA50 | 50 | 4 - 12 | 100 | 2.40 | 5000 | 140 |

Fractional quantities are not possible.

Plastic bar spacers

WG: 164


| | Description | Item No. | Concrete cover | Length | Packaging unit | Weight | Pallet content | Weight |
|---|---|----------|----------------|--------|----------------|-------------------|----------------|-----------|
| | | | mm | m | Pcs | kg/packaging unit | Pcs | kg/pallet |
|  | U-Pro "with" – profiles with lateral recess | KUM20 | 20 | 2.00 | 50 | 14.00 | 3150 | 902 |
| | | KUM25 | 25 | 2.00 | 50 | 17.50 | 2450 | 878 |
| | | KUM30 | 30 | 2.00 | 50 | 21.50 | 2100 | 923 |
| | | KUM35 | 35 | 2.00 | 30 | 14.40 | 1800 | 884 |
| | | KUM40 | 40 | 2.00 | 30 | 15.30 | 1200 | 632 |
| | | KUM50 | 50 | 2.00 | 30 | 25.20 | 840 | 726 |
|  | U-Pro "without" – profiles for insulation | KUO25 | 25 | 2.00 | 50 | 20.50 | 2450 | 1025 |
| | | KUO30 | 30 | 2.00 | 50 | 24.00 | 2100 | 1028 |
| | | KUO35 | 35 | 2.00 | 30 | 15.90 | 1800 | 974 |
| | | KUO40 | 40 | 2.00 | 30 | 17.10 | 1200 | 704 |
| | | KUO50 | 50 | 2.00 | 30 | 30.30 | 840 | 868 |

Fractional quantities are not possible.

Plastic pipes

WG: 164






Round tube, roughened.

| | Item No. | Internal diameter | External diameter | Length | Packaging unit | Weight | Pallet content |
|---|----------|-------------------|-------------------|--------|----------------|-------------------|----------------|
| | | mm | mm | m | Pcs | kg/packaging unit | Pcs |
|  | KR2226 | 22 | 26 | 2.00 | 50 | 20.00 | 1750 |

Fractional quantities are not possible.

Plastic pipes components



WG: 164

| | Description | Item No. | Suitable for | Installation length mm | Packaging unit Pcs | Weight kg/packaging unit | Pallet content Pcs |
|---|---|----------|-----------------|------------------------|--------------------|--------------------------|--------------------|
|  | Face cap for round tube, diameter 22 mm | KVK2240 | KR2226 | 25 | 500 | 3.80 | 20000 |
|  | Sealing stopper for round tube and face cap | KVST22 | KR2226, KVK2240 | 12 | 500 | 0.95 | 50000 |
|  | Inner plug for round tube sealing | KIST22 | KR2226 | 25 | 500 | 5.00 | 50000 |
|  | Cone, grey, for round tube, diameter 22 mm | KKO22 | KR2226 | 10 | 500 | 1.75 | 30000 |
|  | Sealing plug for round tube diameter 22 mm | KVST22L | MR22, MQUELLM | 1 | 500 | 0.80 | 40000 |

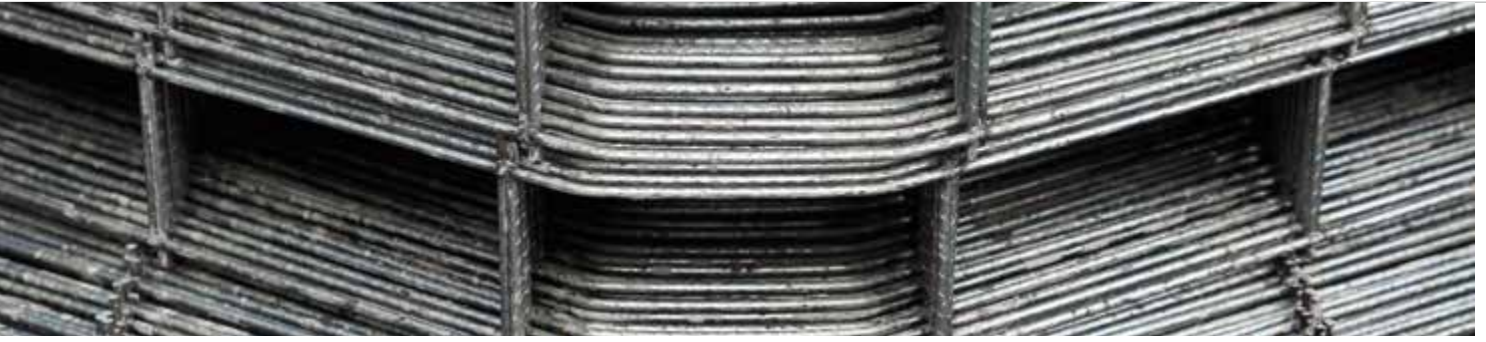
Fractional quantities are not possible.

Plastic distance tubes

WG: 164

| | Description | Item No. | Internal diameter mm | Length mm | Packaging unit Pcs | Pallet content Pcs |
|---|---|----------|----------------------|-----------|--------------------|--------------------|
|  | Plastic distance tube incl. 2 sealing stoppers, in a stable execution with widened support for formwork | KMS200 | 22 | 200 | 100 | 3000 |
| | | KMS240 | 22 | 240 | 100 | 2400 |
| | | KMS250 | 22 | 250 | 100 | 2400 |
| | | KMS300 | 22 | 300 | 100 | 2400 |
| | | KMS400 | 22 | 400 | 100 | 1500 |
|  | Sealing stopper for the fast and secure sealing of the distance tubes | KMSV22 | 22 | - | 200 | 25000 |

Fractional quantities are not possible.

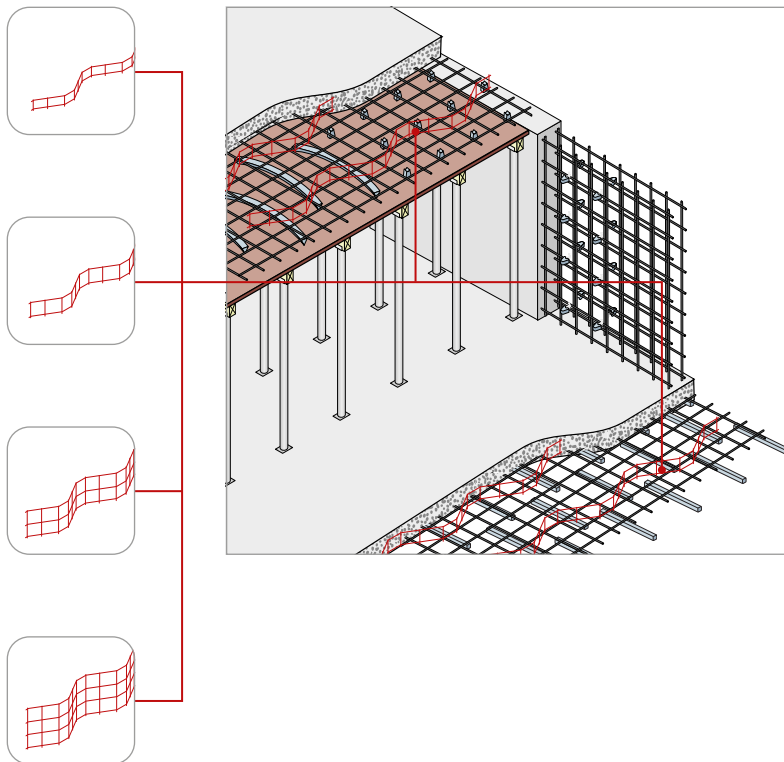


Steel spacers

Steel spacers are used between the lower and upper reinforcement in the floor, ceiling and wall. They ensure the spacing between the reinforcement layers. This type of spacer is ideally suited for installation of mats and steel bar reinforcements.

★ Advantages

- Tested according to DBV leaflet "Supports" according to Eurocode 2
- Large support area prevents tipping
- No contact with the formwork, therefore no damage to the formwork skin and no rust stain formation



U-Korb®

WG: 72

Wire spacer for spacing the reinforcement in floor / ceiling / wall.

| Item No. | Height | Description | Packaging unit | Pallet content | Weight kg/pallet |
|----------|--------|-------------|----------------|----------------|---------------------|
| | mm | | Pcs | Pcs | |
| UKS02 | 20 | 2/200 | 25 | 3000 | 1226 |
| UKS03 | 30 | 3/200 | 25 | 2800 | 1188 |
| UKS04 | 40 | 4/200 | 25 | 2600 | 1143 |
| UKS05 | 50 | 5/200 | 25 | 2200 | 1003 |
| UKS06 | 60 | 6/200 | 25 | 2000 | 944 |
| UKS07 | 70 | 7/200 | 25 | 1600 | 783 |
| UKS08 | 80 | 8/200 | 25 | 1600 | 807 |
| UKS09 | 90 | 9/200 | 25 | 1400 | 730 |
| UKS10 | 100 | 10/200 | 25 | 1200 | 646 |
| UKS11 | 110 | 11/200 | 25 | 1200 | 664 |
| UKS12 | 120 | 12/200 | 25 | 1000 | 571 |
| UKS13 | 130 | 13/200 | 25 | 1000 | 649 |
| UKS14 | 140 | 14/200 | 25 | 800 | 535 |
| UKS15 | 150 | 15/200 | 25 | 800 | 547 |
| UKS16 | 160 | 16/200 | 25 | 800 | 559 |
| UKS18 | 180 | 18/200 | 25 | 600 | 510 |
| UKS20 | 200 | 20/200 | 25 | 600 | 532 |
| UKS22 | 220 | 22/200 | 25 | 600 | 606 |
| UKS24 | 240 | 24/200 | 25 | 400 | 426 |
| UKS26 | 260 | 26/200 | 25 | 400 | 458 |
| UKS28 | 280 | 28/200 | 25 | 400 | 473 |
| UKS30 | 300 | 30/200 | 25 | 400 | 488 |
| UKS32 | 320 | 32/200 | 25 | 200 | 296 |
| UKS34 | 340 | 34/200 | 25 | 200 | 303 |
| UKS36 | 360 | 36/200 | 25 | 200 | 311 |
| UKS38 | 380 | 38/200 | 25 | 200 | 318 |

DBV-h-B-L, comply with the requirements of the DBV data sheet "Support".
 Fractional quantities are not possible.
 Permissible load: 0.67kN/m.

Installation distance according to DBV leaflet "Supports according to Eurocode 2"

| Diameter of supported bars | close space "distances" |
|---|-------------------------|
| $\varnothing \leq 6,5 \text{ mm}$ | 500 mm |
| $6,5 \text{ mm} < \varnothing \leq 12 \text{ mm}$ | 700 mm |
| $\varnothing > 12 \text{ mm}$ | 700 mm |

The installation distance corresponds to the centre distance.
 Linear supports are to be butted in the longitudinal direction.
 If a larger installation distance is to be selected, this must be verified by a calculation.

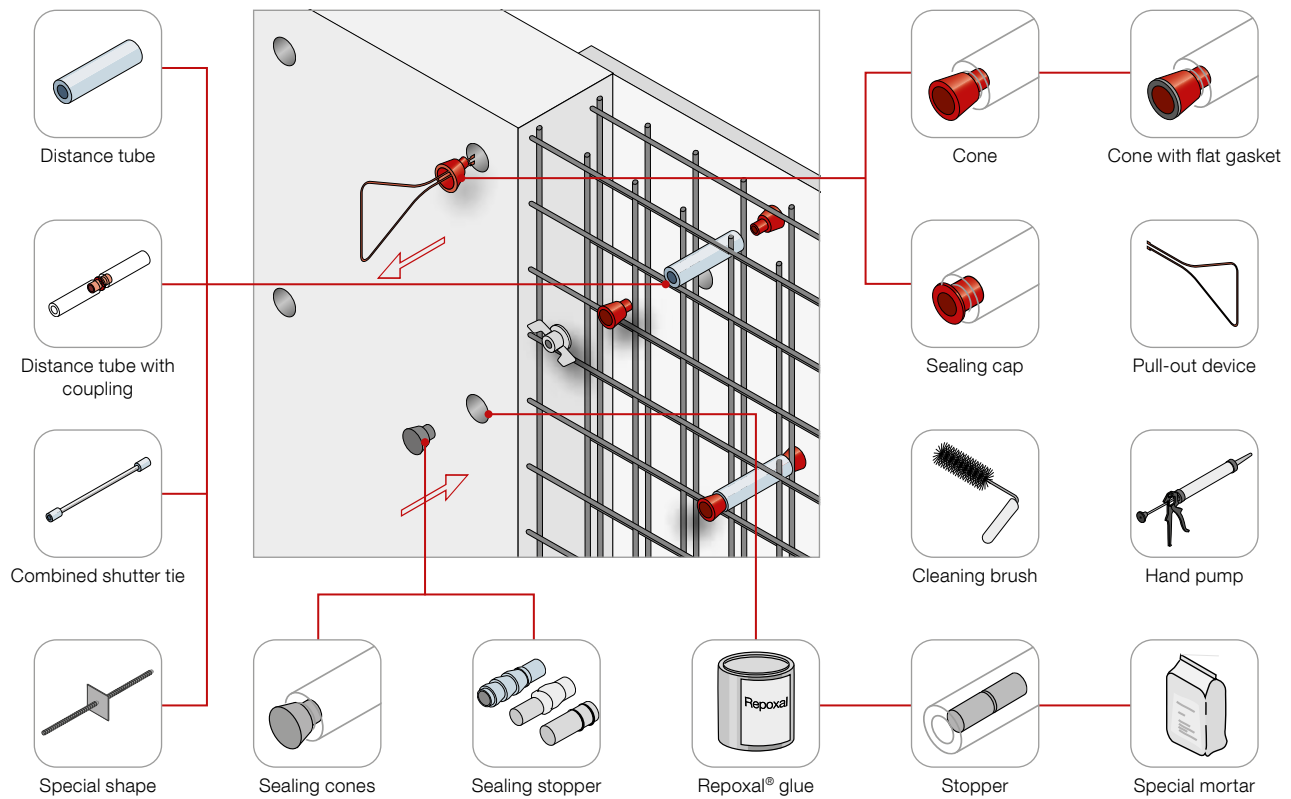


Fibre concrete distance tubes

Distance tubes are used with reusable tie bars to guarantee the concrete walls thickness. They bond completely with the concrete and thus prevent the penetration of water and other concrete damaging substances. Distance tubes can be combined with accessories from MAX FRANK to create a proven system for a wide range of physical and chemical influences on structures. Certifications from certified testing centres are available.

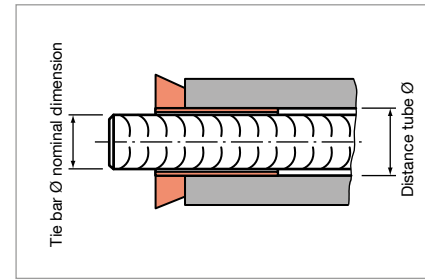
Advantages

- Shutter ties designed for water-impermeable components
- Homogeneous bond created with structural concrete with the same material properties
- Proven system of individually matched components



Selection table tie bar

| Distance tube Ø [mm] | Tie bar Ø nominal dimension [mm] |
|-------------------------|-------------------------------------|
| 22 | 12,5 |
| 22 | 15,0 |
| 27 | 20,0 |
| 32 | 22,0 |


Distance tubes, uncut

WG: 58

Made of fibre-reinforced concrete.

| Item No. | Internal diameter mm | Length m | Weight kg/m | Pallet content Pcs | Weight kg/pallet |
|----------|-------------------------|-------------|----------------|-----------------------|---------------------|
| MR221250 | 22 | 1.25 | 1.83 | 600 | 1393 |
| MR271250 | 27 | 1.25 | 2.10 | 500 | 1333 |

Distance tubes, fixed lengths

WG: 58




Made of fibre-reinforced concrete.

| Item No. | Length mm | Packaging unit Pcs | Weight kg/packaging unit | Pallet content Pcs | Weight kg/pallet |
|----------|--------------|-----------------------|-----------------------------|-----------------------|---------------------|
| MR220100 | 100 | 200 | 37.60 | 4800 | 922 |
| MR220120 | 120 | 120 | 27.36 | 4320 | 1005 |
| MR220130 | 130 | 120 | 28.80 | 4320 | 1057 |
| MR220140 | 140 | 120 | 31.68 | 4320 | 1160 |
| MR220150 | 150 | 120 | 33.96 | 4320 | 1243 |
| MR220160 | 160 | 100 | 30.30 | 3600 | 1111 |
| MR220180 | 180 | 100 | 33.90 | 2400 | 834 |
| MR220200 | 200 | 80 | 30.32 | 2880 | 1112 |
| MR220210 | 210 | 70 | 30.52 | 2520 | 1119 |
| MR220220 | 220 | 100 | 41.30 | 2400 | 1011 |
| MR220230 | 230 | 70 | 30.52 | 2520 | 1119 |
| MR220240 | 240 | 70 | 31.71 | 2520 | 1162 |
| MR220250 | 250 | 70 | 32.97 | 2520 | 1207 |
| MR220260 | 260 | 60 | 28.80 | 2160 | 1057 |
| MR220270 | 270 | 60 | 30.60 | 2160 | 1122 |
| MR220280 | 280 | 60 | 31.68 | 2160 | 1160 |
| MR220300 | 300 | 60 | 33.90 | 2160 | 1240 |
| MR220330 | 330 | 60 | 37.20 | 1440 | 913 |
| MR220340 | 340 | 60 | 38.28 | 1440 | 939 |
| MR220345 | 345 | 60 | 37.86 | 1440 | 929 |
| MR220350 | 350 | 60 | 39.42 | 1440 | 966 |
| MR220360 | 360 | 60 | 40.50 | 1440 | 992 |
| MR220365 | 365 | 60 | 41.10 | 1440 | 1006 |
| MR220380 | 380 | 60 | 42.72 | 1440 | 1045 |
| MR220400 | 400 | 60 | 44.88 | 1440 | 1097 |
| MR220430 | 430 | 40 | 31.48 | 1440 | 1153 |
| MR220450 | 450 | 40 | 33.92 | 1440 | 1241 |
| MR220480 | 480 | 40 | 35.60 | 1440 | 1302 |
| MR220500 | 500 | 40 | 37.60 | 1440 | 1374 |

Any cut length up to 1.25 m can be supplied - item number MRFIX. All cut lengths below 100 mm are invoiced at the price of 100 mm. Fixed lengths for distance tubes diameter 27 mm on request.

Combined shutter ties


WG: 102

| | Description | Item No. |
|---|---|------------------|
|  | Combined shutter tie | V22VBS V27VBS |
|  | Combined shutter tie with cast-iron waterstop and fibre-reinforced concrete pipes | V22WSG |
|  | Combined shutter tie with cast-iron waterstop, fibre-reinforced concrete end pieces and steel pipes | V22WSGST |

Delivery takes place in unassembled separate parts.

Distance tube with coupling


WG: 102

| | Description | Item No. |
|---|--|--------------------|
|  | Two-part distance tube with coupler (continuous tie bar), from wall thickness > 400 mm | MR22KUP MR27KUP |

Delivery takes place in unassembled separate parts.

Shutter ties, special versions





WG: 102

| | Description | Item No. |
|---|--|----------|
|  | Waterstop, 120 x 120 x 2 mm, welded onto tie bar, diameter 15 mm, type B | GEWWSB15 |

Delivery takes place in unassembled separate parts.

Sealing cap, cone, coupling


WG: 98

| | Description | Item No. | For internal diameter mm | Installation length mm | Packaging unit | Outer packaging Pcs |
|---|------------------------------|---|--------------------------|------------------------|----------------|---------------------|
| | | | | | Pcs | |
|  | Sealing cap | MKAP22 | 22 | 1 | 250 | 3750 |
| | | MKAP27 | 27 | 2 | 250 | - |
|  | Cone | MKO22 | 22 | 10 | 250 | 2500 |
| | | MKON22T | 22 | 30 | 250 | 1000 |
| | | MKON22T50 | 22 | 50 | 250 | - |
| | | MKON27 | 27 | 10 | 250 | 2500 |
| | |  | Coupler | MKUP22 MKUP27 | 22 27 | 3 3 |
|  | Cone, incl. flat gasket 2 mm | MKO22FD02 | 22 | 10 | 250 | - |
| | Cone, incl. flat gasket 8 mm | MKO22FD08 | 22 | 10 | 250 | - |
| | Cone, incl. flat gasket 2 mm | MKON22TFD02 | 22 | 30 | 250 | - |
| | Cone, incl. flat gasket 6 mm | MKON22TFD06 | 22 | 30 | 250 | - |

Flat gasket, self-adhesive

WG: 98

For preventing efflorescence, for exposed concrete requirements.

| | Item No. | Suitable for | Internal diameter mm | External diameter mm | Thickness mm | Packaging unit Pcs |
|---|----------|-----------------------|-------------------------|-------------------------|-----------------|-----------------------|
|  | MFD22 | MKO22 | 20 | 36 | 2 | 100 |
| | MFD2208 | MKO22 | 20 | 36 | 8 | 100 |
| | MFD22T | MKON22T, MKON22T50 | 25 | 39 | 2 | 100 |
| | MFD22T06 | MKON22T, MKON22T50 | 25 | 39 | 6 | 100 |
| | MFD27 | MKON27 | 24 | 45 | 2 | 100 |
| | MFD2706 | MKON27 | 24 | 45 | 6 | 100 |

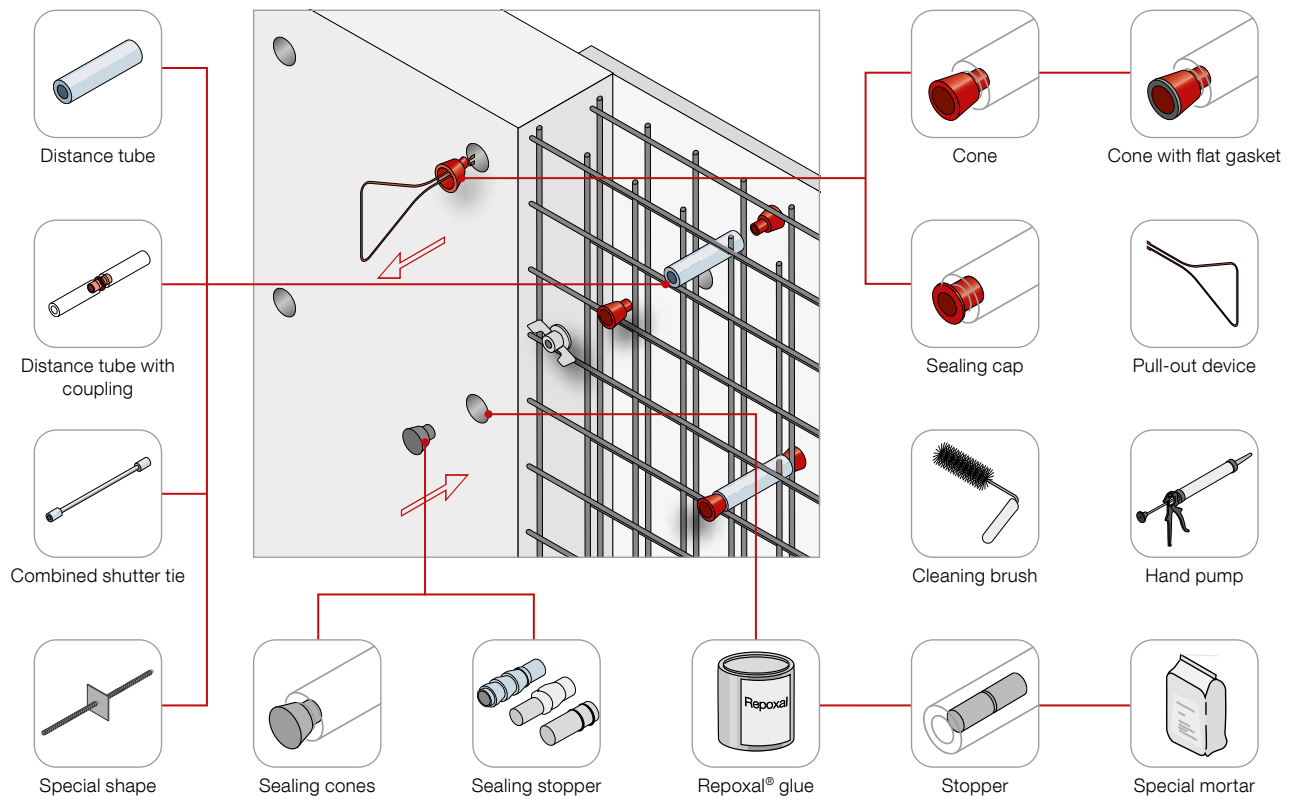


Sealing cones and plugs

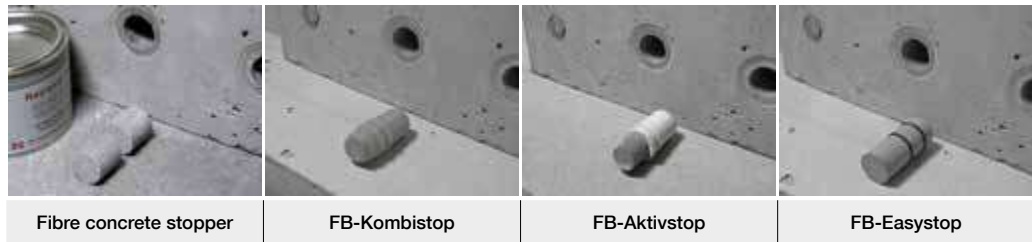
Formwork bracing leaves openings in the concrete wall after concreting and stripping. Fibre concrete sealing cones and plugs for straightforward sealing of tie holes. There are various seal versions, depending on the requirements with regard to appearance, building physics, weathering and construction. The stoppers and cones are glued using the tried-and-tested Repoxal®. This systems meets the requirements for sound insulation, fire protection and pressing water loads.

Advantages

- Fast and clean sealing of tie holes
- Individual design opportunities
- Watertight sealing of structures
- Smooth, almost pore-free concrete surface



- ⊕ suitable
- conditionally suitable
- ⊖ not suitable




| | Fibre concrete stopper | FB-Kombistop | FB-Aktivstop | FB-Easystop |
|--------------------------------|------------------------|--------------------------------------|--------------------------------------|----------------------------|
| Properties: | | | | |
| Installation in frosty weather | ⊖ | ⊕ | ⊕ | ⊕ |
| Drinking water | ⊕ | ⊕ | ⊖ | ⊖ |
| Exposed concrete | ○ | ⊖ | ⊖ | ⊕ |
| Stress: | | | | |
| Salt water | ⊕ | ⊖ | ⊕ | ○ |
| Slurry | ⊕ | ⊖ | ⊕ | ⊖ |
| Oil | ⊖ | ⊖ | ○ | ⊕ |
| Application area: | | | | |
| Water-impermeable (> 5 bar) | ⊕ | ⊕ | ⊕ | ⊖ |
| Fire | ⊕ | ⊖ | ⊖ | ⊖ |
| Sound insulation | ⊕ | ⊖ | ⊖ | ⊖ |
| Processing: | Glue in | Simple tapping in with rubber hammer | Simple tapping in with rubber hammer | Simple screwing in by hand |

Combination of sealing options

| | Sealing cone with lugs, butted | Sealing cone with lugs, recessed | Sealing cone, butted | Sealing cone, recessed | Fibre concrete stopper | FB-Kombistop | FB-Aktivstop | FB-Easystop |
|--------------------|--------------------------------|----------------------------------|----------------------|----------------------------|------------------------|--------------|--------------|-------------|
| | ⊖ | ⊖ | ⊖ | ⊖ | ⊕ | ⊕ | ⊕ | ⊕ |
| (10 mm) | FBVKZ22 GBVKZ22 | GBVKZ22ZV05 | | | | ST2250FG | ST2250AS | ST2250ES |
| (30 mm) | FBVKZ22T | | FBVK22T GBVK22T | FBVK22TZV05 GBVK22TZV05 | | | | |
| (50 mm) | FBVKZ22T50 | | FBVK22T50 | | | | | |

Fibre concrete stopper

WG: 58

| | Item No. | Diameter mm | Length mm | Packaging unit Pcs | Weight kg/packaging unit | Pallet content Pcs | Weight kg/pallet |
|--|---|----------------|--------------|-----------------------|--------------------------------|-----------------------|---------------------|
| |  | ST190020 | 19 | 20 | 1000 | 12.00 | 50000 |
| | ST200020 | 20 | 20 | 1000 | 13.00 | 50000 | 670 |
| | ST220020 | 22 | 20 | 1000 | 16.00 | 50000 | 820 |
| | ST230020 | 23 | 20 | 1000 | 17.00 | 50000 | 870 |
| | ST240020 | 24 | 20 | 1000 | 19.00 | 50000 | 970 |
| | ST250020 | 25 | 20 | 1000 | 20.00 | 50000 | 1020 |
| | ST260020 | 26 | 20 | 1000 | 24.00 | 50000 | 1220 |
| | ST270020 | 27 | 20 | 1000 | 24.00 | 50000 | 1220 |
| | ST220050 | 22 | 50 | 500 | 20.00 | 25000 | 1020 |
| | ST270050 | 27 | 50 | 400 | 23.60 | 16000 | 964 |

Fibre concrete stoppers, uncut


WG: 58

| Item No. | Diameter mm | Length mm | Pallet content Pcs | Weight kg/pallet |
|----------|----------------|--------------|-----------------------|---------------------|
| ST221250 | 22 | 1250 | 1250 | 1239 |

FB-Kombistop

WG: 128


Sealing stopper made of fibre-reinforced concrete with integrated rubber seal.

| | Item No. | Diameter mm | Length mm | Packaging unit Pcs | Weight kg/packaging unit |
|--|--|----------------|--------------|-----------------------|--------------------------------|
| |  | ST2250FG | 22 | 50 | 100 |

FB-Aktivstop

WG: 128


Sealing stopper made of fibre-reinforced concrete with integrated expanding seal.

| | Item No. | Diameter mm | Length mm | Packaging unit Pcs | Weight kg/packaging unit |
|--|---|----------------|--------------|-----------------------|--------------------------------|
| |  | ST2250AS | 22 | 50 | 100 |

FB-Easystop

WG: 128


Sealing stopper made of fibre-reinforced concrete with integrated sealing rings.

| | Item No. | Diameter mm | Length mm | Packaging unit Pcs | Weight kg/packaging unit |
|--|---|----------------|--------------|-----------------------|--------------------------------|
| |  | ST2250ES | 22 | 50 | 100 |

FB-Aktivstop Platinum 100

WG: 128

Sealing stopper made of fibre-reinforced concrete for sealing the conical tie hole for formwork "Platinum 100".

| | Item No. | Diameter | Length | Packaging unit | Weight |
|---|-----------|----------|--------|----------------|-----------------|
| | | mm | mm | Pcs | kg/package unit |
|  | ST2250ASP | conical | 60 | 100 | 3.15 |

Fibre-reinforced concrete sealing cones

WG: 128

For sealing conical tie holes and as a design element for exposed concrete surfaces.

| | Description | Item No. | Suitable for | Dimensions | Packaging unit | Weight |
|--|---------------|-------------|--------------|--------------------|----------------|-----------------|
| | | | | mm | Pcs | kg/package unit |
|  | butted | FBVKZ22 | MKO22 | Ø41 x Ø21.6 x 22 | 100 | 3.00 |
| | | FBVKZ22T | MKON22T | Ø42.6 x Ø21.6 x 40 | 100 | 6.00 |
| | | FBVKZ22T50 | MKON22T50 | Ø42.6 x Ø21.6 x 60 | 100 | 16.00 |
| | | FBVKZ27 | MKON27 | Ø47 x Ø26.6 x 22 | 100 | 5.00 |
|  | set back 5 mm | FBVK22T | MKON22T | Ø42.9 x Ø31 x 28 | 100 | 6.00 |
| | | FBVK22T50 | MKON22T50 | Ø43 x Ø31 x 48 | 100 | 11.00 |
| | | FBVK22TZV05 | MKON22T | Ø40.7 x Ø32 x 23 | 100 | 4.40 |
| | | FBVKSJK | GEWSKO15 | Ø59 x Ø50 x 40 | 100 | 19.00 |

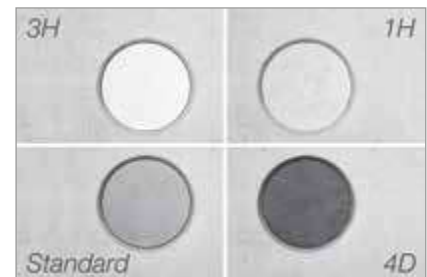
Custom order of other sizes and shapes on request, article number FBVKSONDER.

Special colours and shapes

The colour gradations 3H, 1H, Standard and 4D are available as basic colours for sealing cones made of fibre-reinforced concrete and cast concrete (see adjacent figure).

Based on these basic colours, a variety of other shades of grey are available for sealing cones. This also applies to other colours, such as reds, yellows or browns. A project-related colour match is required for this.

Colour accuracy cannot be guaranteed on account of fluctuations in the natural raw materials. Recessed variants are recommended, since the colour gradation is emphasised by the shadow joint of the geometric grid of the clamping points.



Cast concrete sealing cones




WG: 128

For sealing conical tie holes and as a design element for exposed concrete surfaces.

| | Description | Item No. | Suitable for | Dimensions | Packaging unit | Weight |
|---|---------------|-------------|--------------|--------------------|----------------|-----------------|
| | | | | mm | Pcs | kg/package unit |
|  | butted | GBVKZ22 | MKO22 | Ø41 x Ø21.6 x 22 | 100 | 3.00 |
| | set back 5 mm | GBVKZ22ZV05 | MKO22 | Ø33.5 x Ø21.6 x 22 | 100 | 2.00 |
| | butted | GBVKZ27 | MKON27 | Ø47 x Ø26.6 x 22 | 100 | 5.00 |
|  | | GBVK22T | MKON22T | Ø42.5 x Ø32 x 28 | 100 | 6.00 |
| | set back 5 mm | GBVK22TZV05 | MKON22T | Ø40.7 x Ø32 x 23 | 100 | 5.00 |

Adhesive

WG: 98

| | Description | Item No. | Content | Packaging unit Pcs | Weight kg/packaging unit |
|---|---|----------|---------------|-----------------------|-----------------------------|
|  | Repoxal® two-component glue (specially for impermeable bonding) | MREPOX | 710 g + 290 g | 10 | 10.00 |
|  | Repoxal® K adhesive incl. hardener in double cartridge | MREPOXK | 2 x 310 ml | 12 | 11.04 |
|  | Repoxal® TW two-component glue (tested for impermeable bonding in drinking water application) | MREPOXTW | 500 g + 250 g | 6 | 5.36 |

Coverage of Repoxal®, Repoxal® TW and Repoxal® K

- Consumption quantities: approx. 3 kg for 1,000 stoppers, length 20 mm, diameter 22 mm
- Consumption quantities: approx. 4 kg for 1,000 stoppers, length 20 mm, diameter 27 mm

Accessories


WG: 98

| Description | Item No. |
|---|-------------|
| Hand pump for Repoxal® K double cartridge | MRKHPR |
| Cone pull-out device | MZGKONEN |
| Cleaning brush for distance tubes diameter 22 mm | MRBUERSTE |
| Cleaning brush for distance tubes diameter 22 mm with shoulder for drilling machine | MRBUERSTEAB |
| Static mixer Repoxal® cartridge adhesive, spare part | MREPOXK1 |
| Static mixer Repoxal® 2-component cartridge adhesive, spare part | MREPOXK2 |

Special mortar

WG: 100

Swelling mortar – low-shrinkage cement-based mortar for filling combined shutter ties and for tamping concrete openings of all kinds.



| | Description | Item No. | Weight kg/bag | Weight kg/pallet | Pallet content Packaging unit |
|---|---------------------|----------|------------------|---------------------|----------------------------------|
|  | Special mortar 3/25 | MQUELLM | 25.00 | 1020 | 40 |

Processing:

- Depending on the temperature, pot life is approx. 40 minutes.
- Do not process at ambient, component and mortar temperatures below + 5 °C.
- You will need approx. 1 kg ready-mix mortar per metre of Ø 22 mm distance tube.

Hand pump

WG: 100

| | Description | Item No. |
|---|------------------|-----------|
|  | Hand pump | MQUELLVS |
|  | Extension nozzle | MQUELLVSV |

Further accessories and spare parts on request.
 Suitable sealing plug (KVST22L) see page 28.

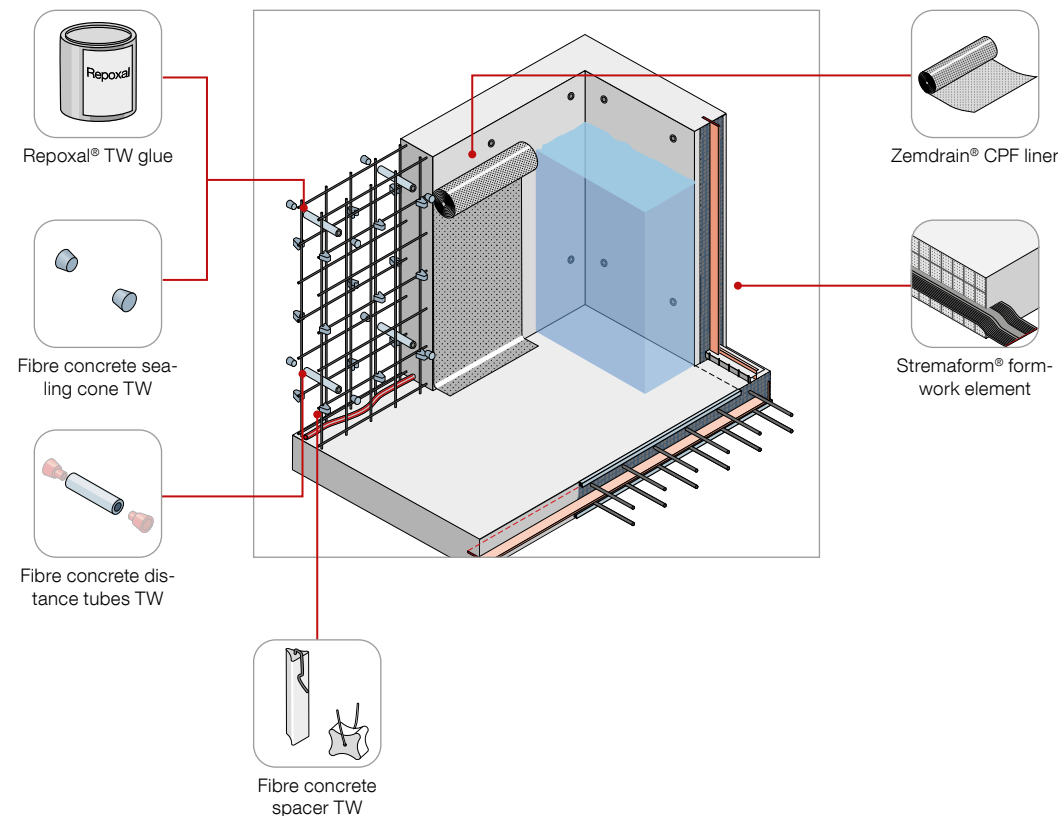


Spacers and distance tubes for drinking water application

Drinking water is a particularly valuable commodity that must be protected. Therefore, special requirements and tests apply to products used in drinking water supply structures. In the DVGW worksheet W 300-1 (A) "Drinking Water Tanks - Design and Construction" a water-impermeable and low-porosity concrete is required that does not require any further measures for surface treatment and inner lining.

Advantages


- The MAX FRANK system solution (see system drawing) meets the requirements for drinking water supply systems.
- The sealing of the tie hole complies with the UBA guideline on epoxy resin coatings for the hygienic assessment of epoxy resin coatings in contact with drinking water.
- MAX FRANK TW spacers and TW distance tubes comply with the DVGW worksheet W 347 "Hygiene requirements for cement-bound materials intended for use in drinking water supply systems". The KTW test (migration test) applies to cement-bound materials such as fibre-reinforced concrete.
- MAX FRANK TW spacers and TW distance tubes comply with the DVGW worksheet W 270 "Microbial enhancement on materials to come into contact with drinking water".



Block spacer made of fibre-reinforced concrete TW


WG: 99

Tested according to DVGW-W270 and DVGW-W347.

| | Item No. | Concrete cover | Cutting width | Packaging unit | Weight | Pallet content | Weight |
|---|----------|----------------|---------------|----------------|-------------------|----------------|-----------|
| | | mm | mm | Pcs | kg/packaging unit | Pcs | kg/pallet |
|  | AD3572TW | 35/40/50 | 24 | 250 | 24.00 | 10000 | 980 |

Bar spacer made of fibre-reinforced concrete TW - type "snake"


WG: 99

| | Item No. | Concrete cover | Length | Weight | Pallet content | Weight |
|---|--------------|----------------|--------|--------|----------------|-----------|
| | | mm | mm | kg/pce | Pcs | kg/pallet |
|  | FAHKS40100TW | 40 | 1000 | 1.27 | 600 | 782 |
| | FAHKS45100TW | 45 | 1000 | 1.41 | 500 | 725 |
| | FAHKS50100TW | 50 | 1000 | 1.74 | 500 | 890 |

Lengths can be subject to production-related tolerance.

Bar spacer made of fibre-reinforced concrete TW - type triangular with hook

WG: 99

| | Item No. | Concrete cover | Length | Packaging unit | Weight | Pallet content | Weight |
|---|--------------|----------------|--------|----------------|-------------------|----------------|-----------|
| | | mm | mm | Pcs | kg/packaging unit | Pcs | kg/pallet |
|  | FAHDH40018TW | 40 | 180 | 75 | 19.43 | 1800 | 486 |
| | FAHDH50018TW | 50 | 180 | 50 | 22.90 | 1200 | 570 |

Lengths can be subject to production-related tolerance.

Fibre-reinforced concrete distance tube TW, uncut

WG: 99

| Item No. | Internal diameter | Length | Weight | Pallet content | Weight |
|------------|-------------------|--------|--------|----------------|-----------|
| | mm | m | kg/pce | Pcs | kg/pallet |
| MR221250TW | 22 | 1.25 | 2.29 | 600 | 1393 |

Fibre-reinforced concrete distance tube TW, standard lengths

WG: 99

| Item No. | Internal diameter | Length | Weight | Pallet content | Weight |
|------------|-------------------|--------|--------|----------------|-----------|
| | mm | mm | kg/pce | Pcs | kg/pallet |
| MR220280TW | 22 | 280 | 0.53 | 2160 | 1160 |
| MR220300TW | 22 | 300 | 0.57 | 2160 | 1240 |

Other fixed lengths on request.

Stopper made of fibre-reinforced concrete TW

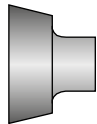
WG: 99

| Item No. | Diameter | Length | Packaging unit | Weight | Pallet content | Weight |
|------------|----------|--------|----------------|-------------------|----------------|-----------|
| | mm | mm | Pcs | kg/packaging unit | Pcs | kg/pallet |
| ST220020TW | 22 | 20 | 1000 | 16.00 | 50000 | 820 |

Fibre-reinforced concrete sealing cone TW

WG: 99


For sealing conical tie holes.

| | Description | Item No. | Suitable for | Dimensions | Packaging unit | Weight |
|---|-------------|------------|--------------|--------------------|----------------|-------------------|
| | | | | mm | Pcs | kg/packaging unit |
|  | butted | FBVKZ22TW | MKO22 | Ø41 x Ø21.6 x 22 | 100 | 3.00 |
| | | FBVKZ22TTW | MKON22T | Ø42.6 x Ø21.6 x 40 | 100 | 6.00 |

Custom-made products on request.

Repoxal® TW two-component glue

WG: 99

| | Description | Item No. | Content | Packaging unit Pcs | Weight kg/packaging unit |
|---|---|----------|---------------|-----------------------|-----------------------------|
|  | Repoxal® TW two-component glue (tested for impermeable bonding in drinking water application) | MREPOXTW | 500 g + 250 g | 6 | 5.36 |

For yield, see page 39.



MAX FRANK

BUILDING
COMMON GROUND

Formwork technologies



Formwork technologies

Economical design, efficient product combination and improved concrete quality – MAX FRANK formwork technologies include a wide range of formwork solutions.



Pecafil® permanent formwork

46



Stremaform® stay-in-place formwork for working joints

51



Stremaform® stay-in-place formwork for expansion joints

64



Tubbox® column former

68



Zemdrain® CPF liner

73



Balcony and ceiling edge formwork

78



Box-out shutters and recess formers

81



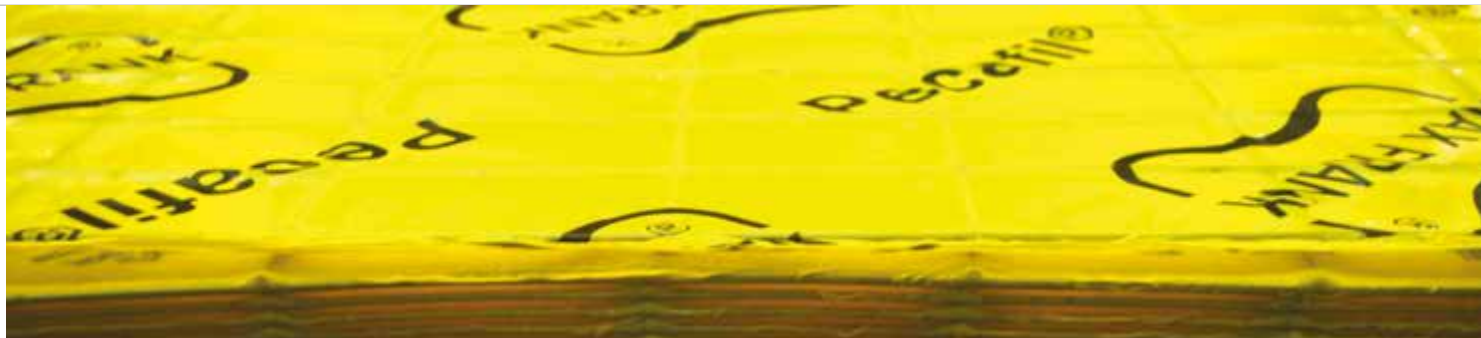
Trennfit release agent

85



Formwork accessories

89

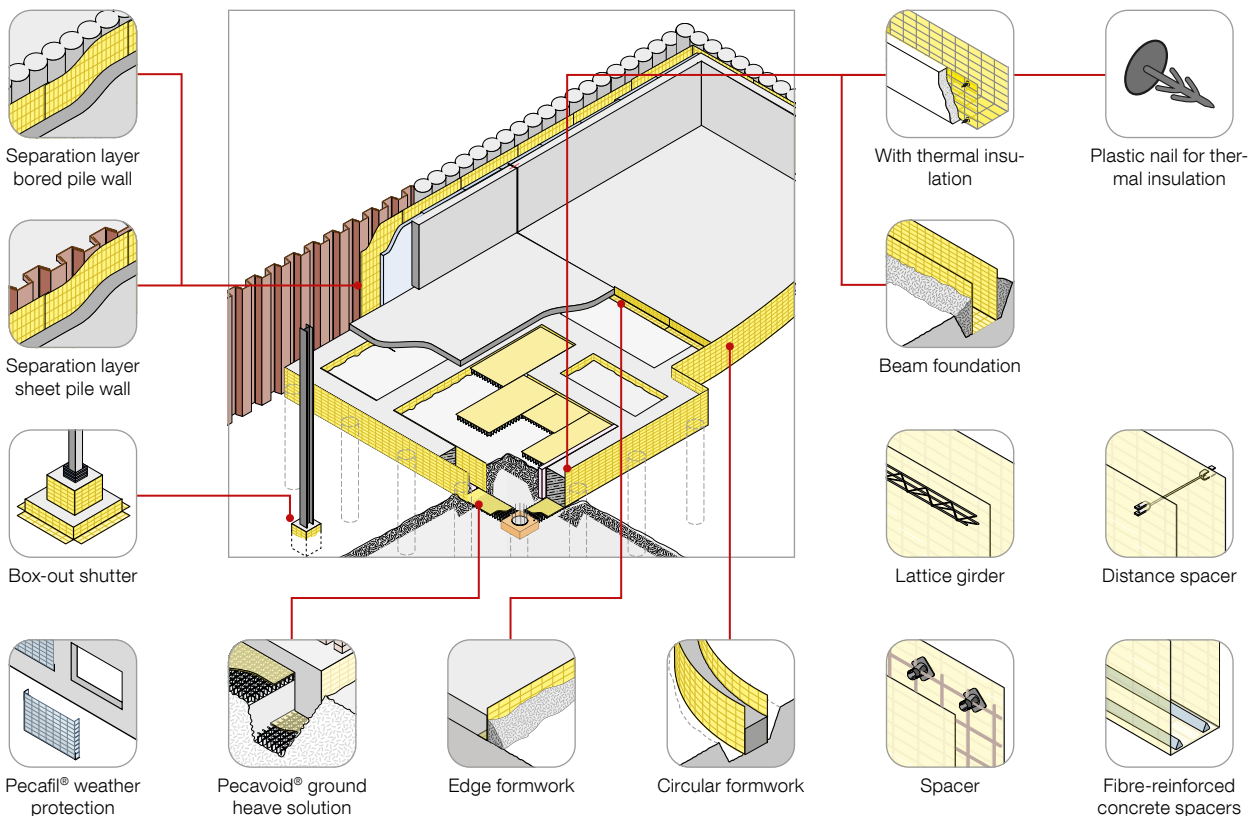


Pecafil® permanent formwork

Pecafil® formwork elements can be used universally for many purposes, above all as formwork for foundations and ribbed slabs as well as sheeting for building pits. It is also suitable in the transparent version for weather, dust and protection screens. The material is available in different thicknesses. Thanks to its light weight it is easy to carry and install. The units can be shortened and adapted on the building site using simple tools. Pecafil® can also be supplied as pre-formed sections. Pecafil® permanent formwork is environmentally friendly, groundwater-neutral and recyclable.

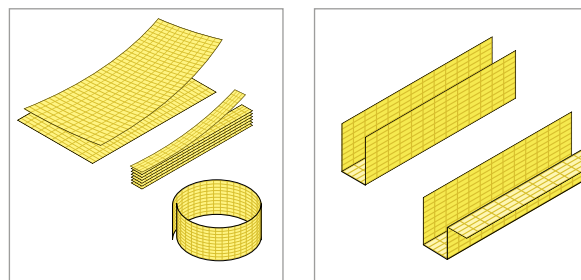
★ Advantages

- Fast and simple installation of the formwork
- No need for lifting equipment
- No time or costs for stripping, cleaning and returning the formwork
- Release agent is not necessary



Pecafil® cutting and bending

Available as flat material or bent according to your specifications. Other shapes on request. When bending on site, care should be taken to ensure the main bar is always on the inside of the Pecafil® section (VR6)! Processing costs for bending and cutting on request. The residual pieces resulting from cutting are supplied.



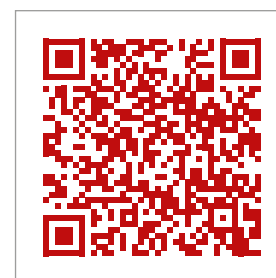
Pecafil® components

WG: 232

| Description | Item No. | Packaging unit |
|---|-------------|----------------|
| | | Pcs |
| Pecafil® adhesive tape, PVC adhesive tape, yellow, extra strong, frost-proof, roll length 33 m, roll width 50 mm | PVE0036 | 36 |
| Pecafil® spacer, plastic bar spacer, required quantity 8 pcs./m ² (refer to installation instructions) | UKGP4050B | 200 |
| Pecafil® lattice girder E10, standard length 4.20 m | PV180000000 | - |
| Pecafil® distance spacer, applicable to the width of the foundation | PV170000000 | - |
| Plastic nail for thermal insulation | PVE0029 | 50 |

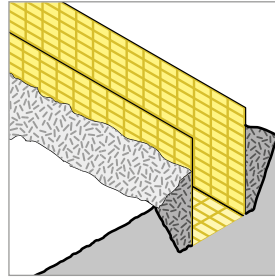
Pecafil® sheets and Pecafil® formwork strips

For further article and price information on Pecafil® sheets and Pecafil® formwork strips, please refer to the MAX FRANK online catalogue.



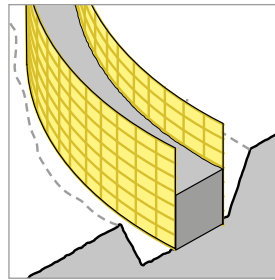
Pecafil® strip foundation

Pecafil® is mainly used as formwork for strip foundations. These can be executed both below and above ground. When using Pecafil®, no additional working space is required for support.



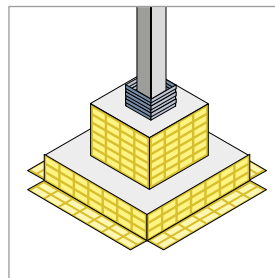
Pecafil® circular formwork

For curved foundations Pecafil® formwork material is bent to the foundation shape on site. The material can be supplied pre-bent for smaller dimensions.



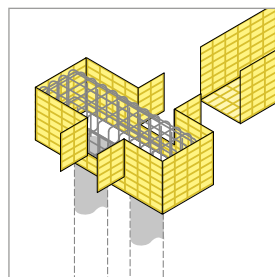
Pecafil® box-out shutter

Pecafil® universal formwork material as external shuttering for pocket foundations is pre-bent and delivered in the correct height to the building site. Circular foundations are very simple to manufacture using pre-bent units.



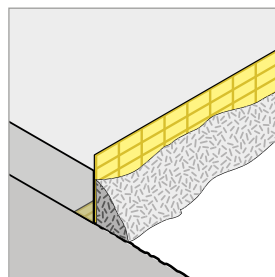
Pecafil® pile cap formwork

Since several piles are often combined in one foundation in the pile cap area, variable shapes can be created. Pecafil® is pre-bent accordingly and delivered in the correct height as specified by the building site.



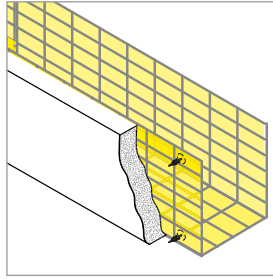
Pecafil® edge formwork

With Pecafil® edge formwork, floor or ceiling slabs can be shuttered at the edge. When using semi-prefabricated members, Pecafil® units are suitable for the shuttering of the slab edges.



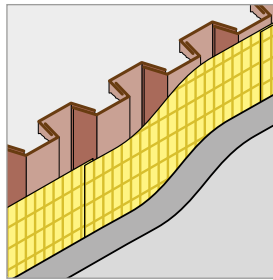
Pecafil® with thermal insulation

Before concreting the foundation, the on-site thermal insulation can be installed between the reinforcement and the Pecafil® formwork or between the Pecafil® formwork and the earth to be filled. Both methods are quick and simple to construct.



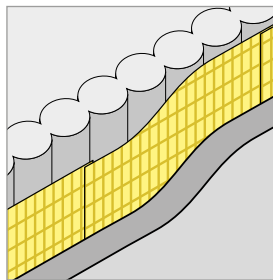
Pecafil® separation layer for sheet piles

The separation layer made of Pecafil® withstands even high concreting pressure and serves as a separating and sliding layer to facilitate subsequent pulling of the sheet piles. Installation by means of welding is carried out directly on the sheet pile wall.



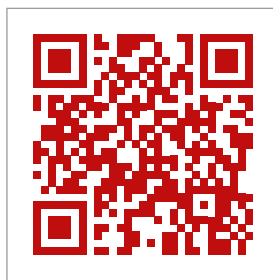
Pecafil® separation layer for bored piles

The separation layer made of Pecafil® reduces concrete consumption and withstands high concreting pressure. Installation by means of specialized bolt fixings is carried out directly or with the aid of propping on the bored pile wall.



Application video for Pecafil® foundation formwork

By scanning the QR code you can watch an application video of the Pecafil® foundation formwork. Pecafil® formwork sections are delivered to the building site pre-assembled and can be installed simply by hand in just a few steps. The video demonstrates simple installation step-by-step.



Pecafil® weather protection

- As temporary weather, dust and privacy protection screens
- 2-year UV-stabilisation
- Galvanized wires



WG: 230

| Item No. | Type | Length mm | Width mm | Area m ² /pce. |
|-------------|--------|--------------|-------------|------------------------------|
| PV150003200 | FV 2.4 | 2400 | 3200 | 7.68 |

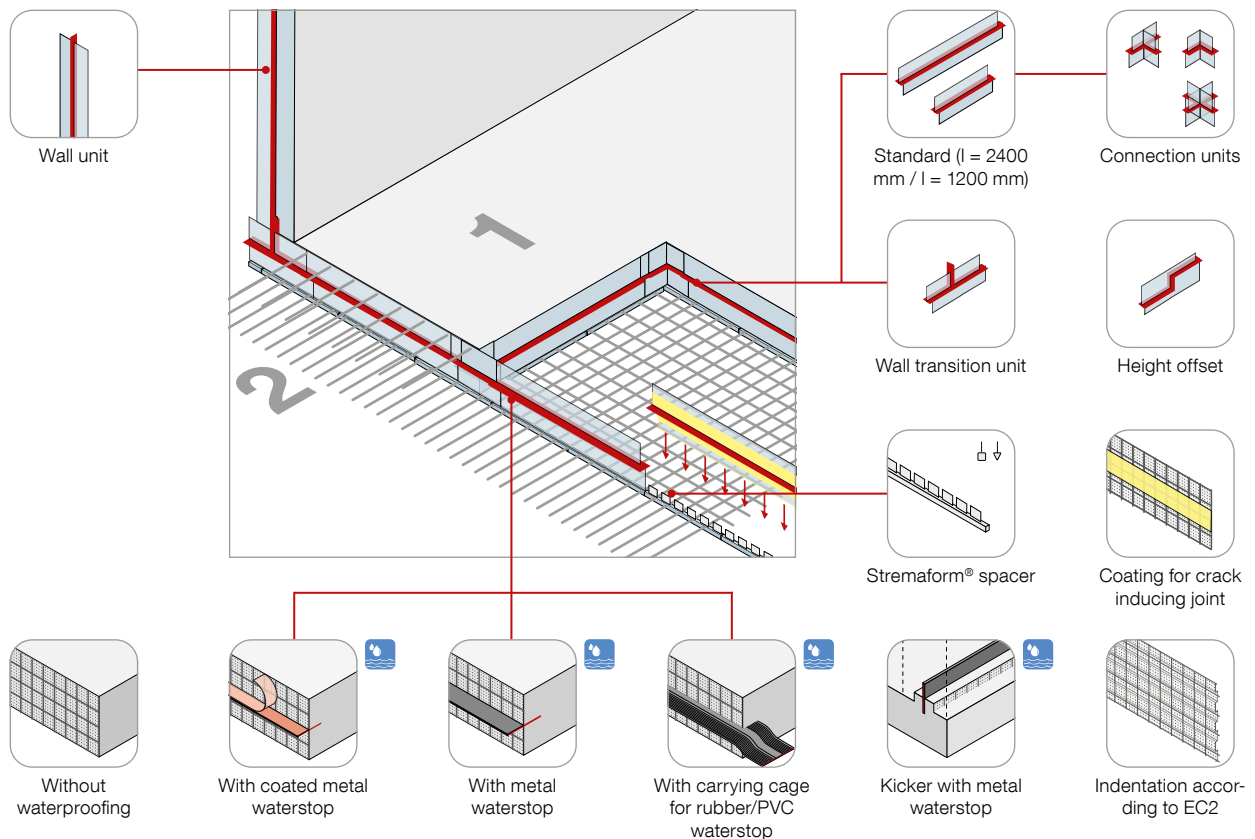


Stremaform® stay-in-place formwork for working joints

Stremaform® formwork is the leading product of ready-to-install formwork systems for working joints. The formwork elements are used as permanent formwork in floor slabs, ceilings and walls. Stremaform® products for working joints have been developed and constructed in Germany by MAX FRANK for more than 30 years.

★ Advantages

- Faster and more cost-effective formwork compared to timber formwork
- Reliable and functional formwork element
- Proven quality: Engineered in Germany for over 30 years
- No dismantling or disposal of formwork material



Spacers

Formwork technologies

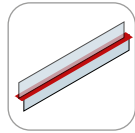
Reinforcement technologies

Sealing technologies

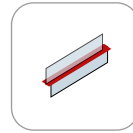
Building acoustics

Stremaform® modular system

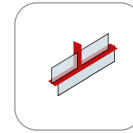
Stremaform® formwork elements for working joints in slabs and walls are planned, manufactured and delivered as a modular system. Standardised units are available for a wide range of applications and uses.



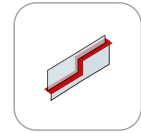
Standard 2400 mm



Standard 1200 mm



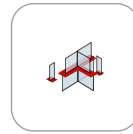
Wall transition unit



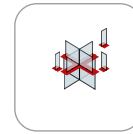
Height offset



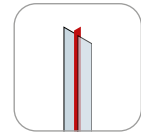
Corner unit



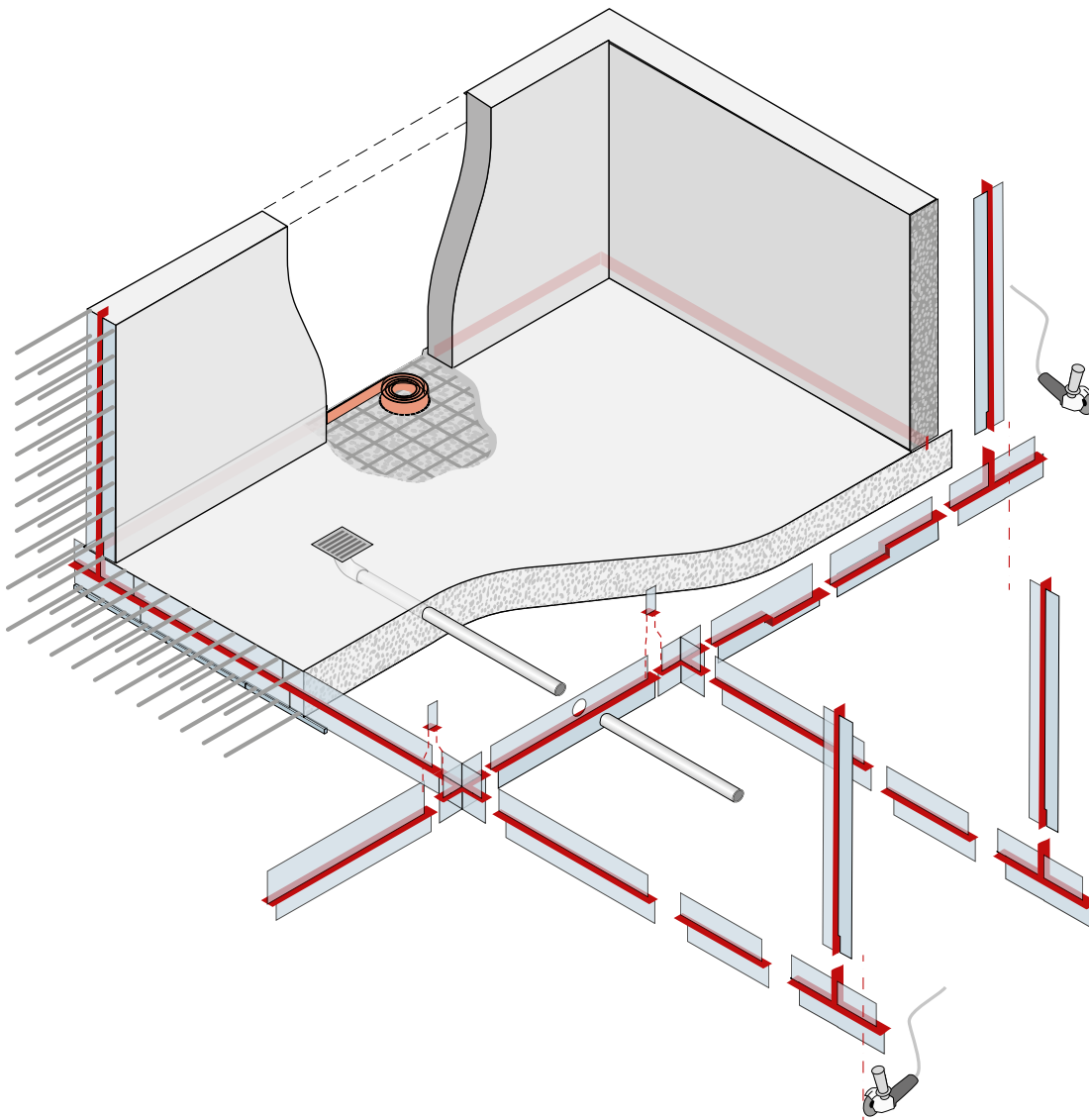
T unit



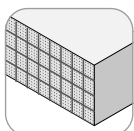
Crossing



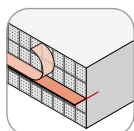
Wall unit



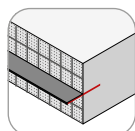
Stremaform® waterproofing variants



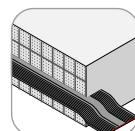
Without waterproofing



With coated metal waterstop



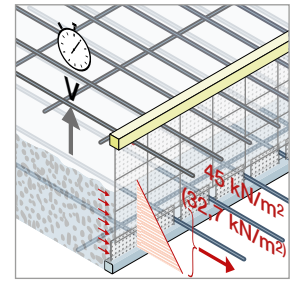
With metal waterstop



With carrying cage for rubber/PVC waterstop

Stremaform® variants

Stremaform® formwork elements for working joints are structurally designed to withstand a maximum fresh concrete pressure of 45 kN/m² (32.7 kN/m² for installation dimensions > 1800 mm). They are produced in different variations and strengths depending on the pour height. Decisive for the design variant is the installation dimension, which describes the distance between lower and upper reinforcement.



Stremaform® geometry

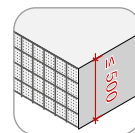
| Standard 2400 mm | Standard 1200 mm Wall transition unit Height offset | Corner unit T unit Crossing | Standard Wall unit |
|------------------|---|-----------------------------------|-----------------------|
| | | | |
| | | | |

Bracing depending on the installation dimension

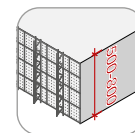
Stremaform® formwork elements for working joints with and without waterproofing systems are braced as follows:

Slab

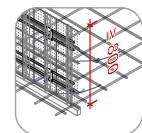
- Partially braced up to an installation dimension $h \leq 500$ mm
- Braced from an installation dimension $h > 500$ mm
- For installation dimensions $h > 800$ mm we recommend our Stremaform® back anchoring system



Partially braced
 $h \leq 500$ mm



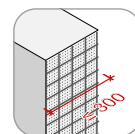
braced
 $500 \text{ mm} < h \leq 800$
mm



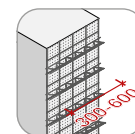
braced + back
anchoring
 $h > 800$ mm

Wall

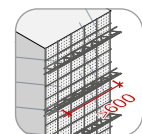
- Partially braced up to an installation dimension $b \leq 300$ mm
- Braced from an installation dimension $b > 300$ mm
- For installation dimensions $b > 600$ mm we recommend our Stremaform® back anchoring system



Partially braced
 $b \leq 300$ mm



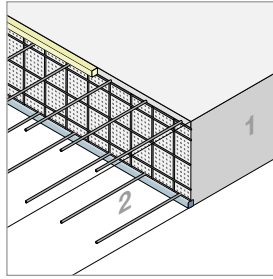
braced
 $300 \text{ mm} < b \leq 600$
mm



braced + back
anchoring
 $b > 600$ mm

Stremaform® formwork for working joints without waterproofing

Stremaform® formwork elements for working joints without waterproofing systems, available as partially braced or braced version. The elements are installed between the reinforcement layers in the slab or wall.



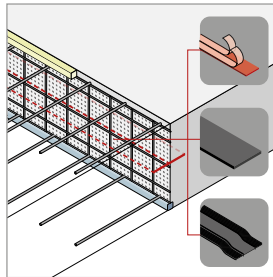
WG: 244

| | Description | Length mm | Installation dimension mm |
|--|---------------|--------------|------------------------------|
| | Standard unit | 2400 | 100 - 2000 |

As standard, the stiffened version is recommended from an installation dimension of 310 mm (walls) and 510 mm (slabs). Stiffening below 310 mm (walls) is not possible.

Stremaform® formwork for working joints prepared for different waterproofing systems

Stremaform® elements can be fitted with coated or uncoated metal water-stop or waterstop cage.



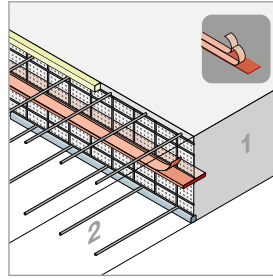
WG: 244

| | Description | Length mm | Installation dimension mm |
|--|---------------|--------------|------------------------------|
| | Standard unit | 2400 | 100 - 2000 |

As standard, the stiffened version is recommended from an installation dimension of 310 mm (walls) and 510 mm (slabs). Stiffening below 310 mm (walls) is not possible.

Option coated metal waterstop

The standard version with coated metal waterstop is Fradiflex® Premium 150/1.5 mm with double-sided coating. Single-sided coating variants are possible.



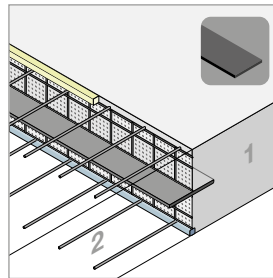
WG: 244

| Description |
|---|
| Metal waterstop 150/1.5 mm (standard) |
| Double-sided coating (standard) |
| One-sided coating |
| One-sided coating for prefabricated shaped elements transition wall, height offset, corner, T, crossing |

Other sizes of metal waterstops on request.

Option metal waterstop (uncoated)

For design with uncoated metal waterstop, different metal waterstop variants are available. Design variants with angled metal waterstop and/or butt joint coatings are possible.



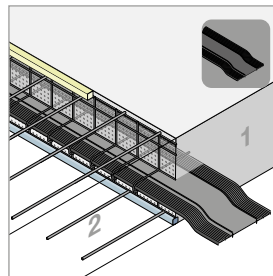
WG: 244

| Description |
|----------------------------|
| Metal waterstop 250/1.5 mm |
| Metal waterstop 250/2.0 mm |
| Metal waterstop 300/1.5 mm |
| Metal waterstop 300/2.0 mm |
| Upstand 15° on both sides |
| Coating on overlap |

Other sizes of metal waterstops on request.

Option waterstop cage

For design with waterstop cage, different waterstop cage variants are available for the insertion of waterstops or metal waterstops. Design variants with angled waterstop cage are possible.



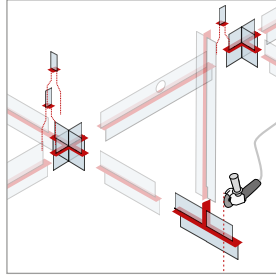
WG: 244

| Description |
|--|
| Waterstop cage 80/20-5 mm (for insert of coated metal waterstop) |
| Waterstop cage 250/30-16 mm |
| Waterstop cage 320/30-16 mm |
| Upstand 15° on both sides |

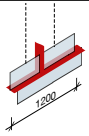
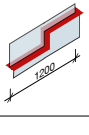
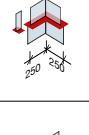
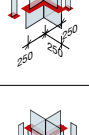
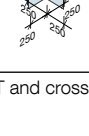
Other waterstop cage sizes on request.

Option Stremaform® prefabricated shaped elements

Stremaform® prefabricated shaped elements complete the modular system. They offer the possibility of combining straight standard elements with waterproofing systems in such a way that transitions into walls, height offsets in the waterproofing level and connections between construction joints across corners are possible.



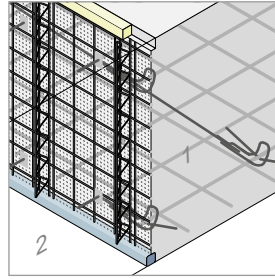
WG: 244

| | Description | Length mm |
|---|----------------------------------|--------------|
|  | Wall transition unit | 1200 |
|  | Height offset | 1200 |
|  | Corner unit with metal waterstop | 500 |
|  | T unit with metal waterstop | 750 |
|  | Crossing with metal waterstop | 1000 |

Corner, T and cross shaped parts are not available for the waterstop cage variant.

Stremaform® bracing

The Stremaform® bracing system is used to secure Stremaform® formwork elements from an installation dimension of ≥ 800 mm during the installation phase and to accommodate the concrete pressure. We offer two versions: (1) Stremaform® with double bar bracing to accommodate the on site, diagonally welded tensile bars. (2) Stremaform® bracing system (double bar bracing + tensile bar system) for weld-free bracing.



Option Stremaform® double bar bracing

WG: 242

| | Item No. | Application | Installation dimension |
|--|--------------|-------------|------------------------|
| | | | mm |
| | PV4900DS1200 | Slab | 1200 |
| | PV4900DS2000 | Slab | 2000 |
| | PV4900DS0800 | Wall | 800 |
| | PV4900DS1400 | Wall | 1400 |

Stremaform® bracing for larger installation dimensions on request. Diagonal bars are not included in the scope of delivery.

Option Stremaform® bracing system (weld-free)

WG: 242

| | Item No. | Application | Installation dimension |
|--|-------------|-------------|------------------------|
| | | | mm |
| | PV490001200 | Slab | 1200 |
| | PV490002000 | Slab | 2000 |
| | PV490000800 | Wall | 800 |
| | PV490001400 | Wall | 1400 |

Stremaform® bracing for larger installation dimensions on request. Tensile bars and safety bars are included in the scope of delivery.

Stremaform® eccentric clamp for fixing the diagonal bars on Stremaform®

WG: 242

| | Description | Item No. | Packaging unit |
|--|--|----------|----------------|
| | | | Pcs |
| | Eccentric clamp, reusable for round bar diameter 5 - 10 mm | PVE0123 | 50 |

The eccentric clamp is reusable and ordered as required.

Option prefabricated cut outs (detailing levels 2 and 3)

WG: 244

| | Description |
|--|----------------------------------|
| | Cut to fixed length |
| | Cut to size on one side, conical |
| | Cut of penetration |

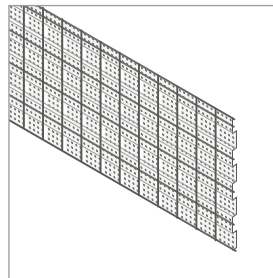
Option edge detailing

WG: 244

| | Description | Width mm |
|--|---|-------------|
| | Fibre concrete bar, glued, up to concrete cover 40 mm | - |
| | Fibre concrete bar, glued, from concrete cover 45 mm | - |
| | Expanded metal overhang (standard) | 30 |
| | | 50 |
| | | 70 |
| | Comb for reinforcement (standard) | 80 |
| | 120 | |
| | 160 | |
| | Timber batten on one side | - |

Option Stremaform® with indentation

Stremaform® formwork for working joints can be executed with an optional indented surface to Eurocode 2 (EN 1992-1-1).

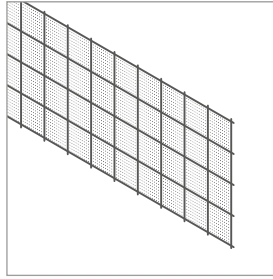


WG: 244

| Description |
|--|
| Indented surface according to EN1992-1 (EC2) |

Option Stremaform® for concrete of high fluidity

All variants of Stremaform® formwork for working joints can be produced to incorporate an optional close-meshed expanded metal for concretes with high fluidity.

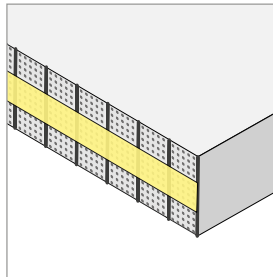


WG: 244

| |
|---------------------|
| Description |
| Surface fine-meshed |

Option Stremaform® crack inducing formwork

Stremaform® crack inducing formwork reduces a frictional connection between concrete pours over at least 1/3 of the structural element thickness in order to produce a controlled crack.



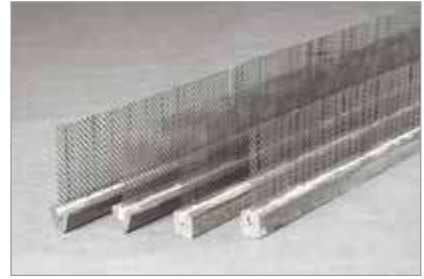
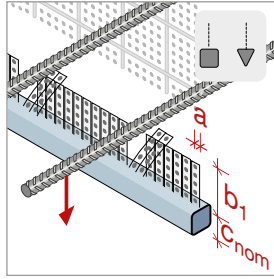
WG: 244

| |
|---|
| Description |
| Crack inducer formation with integrated separation layer (1/3 of the component thickness) |

Crack inducer execution for the continuous concrete sequence on request.

Stremaform® System-Spacer with fibre-reinforced concrete strip

The Stremaform® System-Spacer serves as a spacer and sealing strip and prevents time-consuming cleaning work. Furthermore, the two comb patterns and three comb heights offer full flexibility regarding reinforcement diameters, spacings and layers.



Stremaform® System-Spacer with fibre-reinforced concrete bar square

WG: 242

| Item No. | Concrete cover | Length | Grid a | Comb height b ₁ |
|---------------|----------------|--------|--------|----------------------------|
| | mm | | | |
| PV3SPV3517080 | 35 | 1200 | 17 | 80 |
| PV3SPV3517120 | 35 | 1200 | 17 | 120 |
| PV3SPV3517160 | 35 | 1200 | 17 | 160 |
| PV3SPV4017080 | 40 | 1200 | 17 | 80 |
| PV3SPV4017120 | 40 | 1200 | 17 | 120 |
| PV3SPV4017160 | 40 | 1200 | 17 | 160 |
| PV3SPV4517080 | 45 | 1200 | 17 | 80 |
| PV3SPV4517120 | 45 | 1200 | 17 | 120 |
| PV3SPV4517160 | 45 | 1200 | 17 | 160 |
| PV3SPV5017080 | 50 | 1200 | 17 | 80 |
| PV3SPV5017120 | 50 | 1200 | 17 | 120 |
| PV3SPV5017160 | 50 | 1200 | 17 | 160 |
| PV3SPV6017080 | 60 | 1200 | 17 | 80 |
| PV3SPV6017120 | 60 | 1200 | 17 | 120 |
| PV3SPV6017160 | 60 | 1200 | 17 | 160 |
| PV3SPV7517080 | 75 | 1200 | 17 | 80 |
| PV3SPV7517120 | 75 | 1200 | 17 | 120 |
| PV3SPV7517160 | 75 | 1200 | 17 | 160 |
| PV3SPV3530080 | 35 | 1200 | 30 | 80 |
| PV3SPV3530120 | 35 | 1200 | 30 | 120 |
| PV3SPV3530160 | 35 | 1200 | 30 | 160 |
| PV3SPV4030080 | 40 | 1200 | 30 | 80 |
| PV3SPV4030120 | 40 | 1200 | 30 | 120 |
| PV3SPV4030160 | 40 | 1200 | 30 | 160 |
| PV3SPV4530080 | 45 | 1200 | 30 | 80 |
| PV3SPV4530120 | 45 | 1200 | 30 | 120 |
| PV3SPV4530160 | 45 | 1200 | 30 | 160 |
| PV3SPV5030080 | 50 | 1200 | 30 | 80 |
| PV3SPV5030120 | 50 | 1200 | 30 | 120 |
| PV3SPV5030160 | 50 | 1200 | 30 | 160 |
| PV3SPV6030080 | 60 | 1200 | 30 | 80 |
| PV3SPV6030120 | 60 | 1200 | 30 | 120 |
| PV3SPV6030160 | 60 | 1200 | 30 | 160 |
| PV3SPV7530080 | 75 | 1200 | 30 | 80 |
| PV3SPV7530120 | 75 | 1200 | 30 | 120 |
| PV3SPV7530160 | 75 | 1200 | 30 | 160 |

Grid 17 mm suitable for reinforcement diameters Ø10, Ø12, Ø14, Ø16 and Ø32 mm.
 Grid 30 mm suitable for reinforcement diameters Ø20, Ø25, Ø28, Ø40 and Ø50 mm.
 Fibre concrete mix with special properties on request.

Stremaform® fibre-reinforced triangular concrete spacer

WG: 242

| Item No. | Concrete cover mm | Length mm | Grid a mm | Comb height b ₁ mm |
|---------------|----------------------|--------------|--------------|----------------------------------|
| PV3SPD3017080 | 30 | 1200 | 17 | 80 |
| PV3SPD3017120 | 30 | 1200 | 17 | 120 |
| PV3SPD3017160 | 30 | 1200 | 17 | 160 |
| PV3SPD3517080 | 35 | 1200 | 17 | 80 |
| PV3SPD3517120 | 35 | 1200 | 17 | 120 |
| PV3SPD3517160 | 35 | 1200 | 17 | 160 |
| PV3SPD4017080 | 40 | 1200 | 17 | 80 |
| PV3SPD4017120 | 40 | 1200 | 17 | 120 |
| PV3SPD4017160 | 40 | 1200 | 17 | 160 |
| PV3SPD5017080 | 50 | 1200 | 17 | 80 |
| PV3SPD5017120 | 50 | 1200 | 17 | 120 |
| PV3SPD5017160 | 50 | 1200 | 17 | 160 |
| PV3SPD6017080 | 60 | 1200 | 17 | 80 |
| PV3SPD6017120 | 60 | 1200 | 17 | 120 |
| PV3SPD6017160 | 60 | 1200 | 17 | 160 |
| PV3SPD3030080 | 30 | 1200 | 30 | 80 |
| PV3SPD3030120 | 30 | 1200 | 30 | 120 |
| PV3SPD3030160 | 30 | 1200 | 30 | 160 |
| PV3SPD3530080 | 35 | 1200 | 30 | 80 |
| PV3SPD3530120 | 35 | 1200 | 30 | 120 |
| PV3SPD3530160 | 35 | 1200 | 30 | 160 |
| PV3SPD4030080 | 40 | 1200 | 30 | 80 |
| PV3SPD4030120 | 40 | 1200 | 30 | 120 |
| PV3SPD4030160 | 40 | 1200 | 30 | 160 |
| PV3SPD5030080 | 50 | 1200 | 30 | 80 |
| PV3SPD5030120 | 50 | 1200 | 30 | 120 |
| PV3SPD5030160 | 50 | 1200 | 30 | 160 |
| PV3SPD6030080 | 60 | 1200 | 30 | 80 |
| PV3SPD6030120 | 60 | 1200 | 30 | 120 |
| PV3SPD6030160 | 60 | 1200 | 30 | 160 |

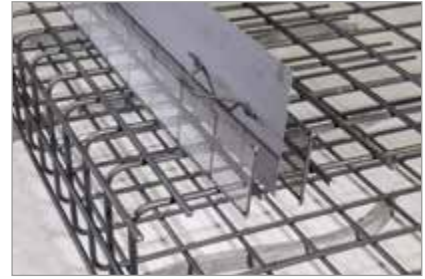
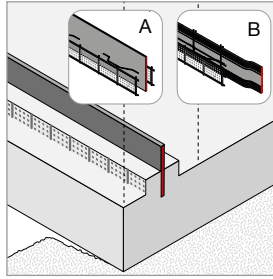
Grid 17 mm suitable for reinforcement diameters Ø10, Ø12, Ø14, Ø16 and Ø32 mm.

Grid 30 mm suitable for reinforcement diameters Ø20, Ø25, Ø28, Ø40 and Ø50 mm.

Fibre concrete mix with special properties on request.

Stremaform® kicker with metal waterstop or carrying cage for rubber/PVC waterstop

Stremaform® kicker for working joint between floor slab/wall or wall/slab, with metal waterstop 250/1.5 mm or carrying cage for rubber/PVC waterstop 250/30-16 mm for sealing. Pre-assembled formwork elements or special units available according to specification.



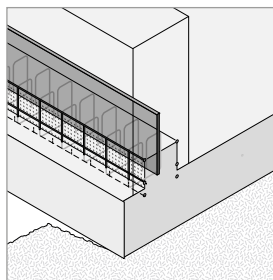
WG: 242

| | Description | Item No. | Strip height mm | Length mm | Installation dimension mm |
|--|---------------------------------------|--------------|--------------------|--------------|------------------------------|
| | Standard element with metal waterstop | PV3S-BW51000 | 150 | 2400 | 150 |
| | Standard element with waterstop cage | PV3S-BW61000 | 150 | 2400 | 150 |
| | Corner unit with metal waterstop | PV3S-BW56000 | 150 | - | 150 |
| | Corner unit with waterstop cage | PV3S-BW66000 | 150 | - | 150 |
| | T unit with metal waterstop | PV3S-BW57000 | 150 | - | 150 |
| | T unit with waterstop cage | PV3S-BW67000 | 150 | - | 150 |
| | Crossing with metal waterstop | PV3S-BW58000 | 150 | - | 150 |
| | Crossing with waterstop cage | PV3S-BW68000 | 150 | - | 150 |

Further dimensions available on request.

Stremaform® kicker for installing metal waterstop on site

Stremaform® kicker between floor slab/wall with holder for a metal waterstop.

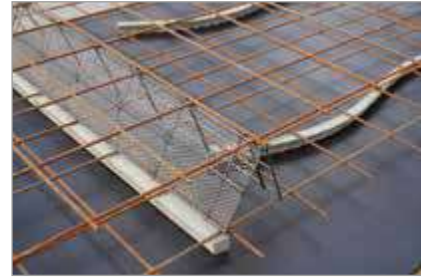
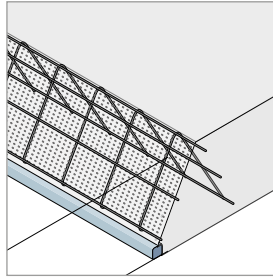


WG: 242

| Item No. | Strip height mm | Length mm | Installation dimension mm |
|-------------|--------------------|--------------|------------------------------|
| PV204800120 | 120 | 2400 | 120 |
| PV204800150 | 150 | 2400 | 150 |

Stremaform® A-Bock, free-standing

Self-supporting, stay-in-place Stremaform® formwork is available for slabs in different heights.



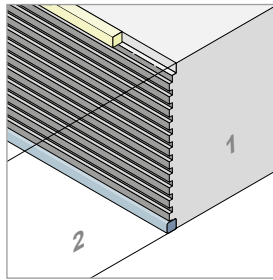
WG: 242

| Item No. | Length mm | Installation dimension mm |
|--------------------|--------------|------------------------------|
| PV200400000-EBM140 | 2400 | 140 |
| PV200400000-EBM160 | 2400 | 160 |
| PV200400000-EBM180 | 2400 | 180 |
| PV200400000-EBM200 | 2400 | 200 |
| PV200400000-EBM220 | 2400 | 220 |
| PV200400000-EBM240 | 2400 | 240 |
| PV200400000-EBM250 | 2400 | 250 |

Further dimensions available on request.

Stremaboard

Stremaboard consists of a profiled, lightweight expanded metal. The material and the simple cutting to size by the customer are ideal for individual adaptation to working joints on site. The profile satisfies the requirements of Eurocode 2 so that working joints produced are to be classified as indented joints.



WG: 241

| Item No. | Length mm | Width mm | Pallet content Packaging unit | Weight kg/pallet |
|----------|--------------|-------------|----------------------------------|---------------------|
| PV2020 | 2400 | 800 | 100 | 584 |



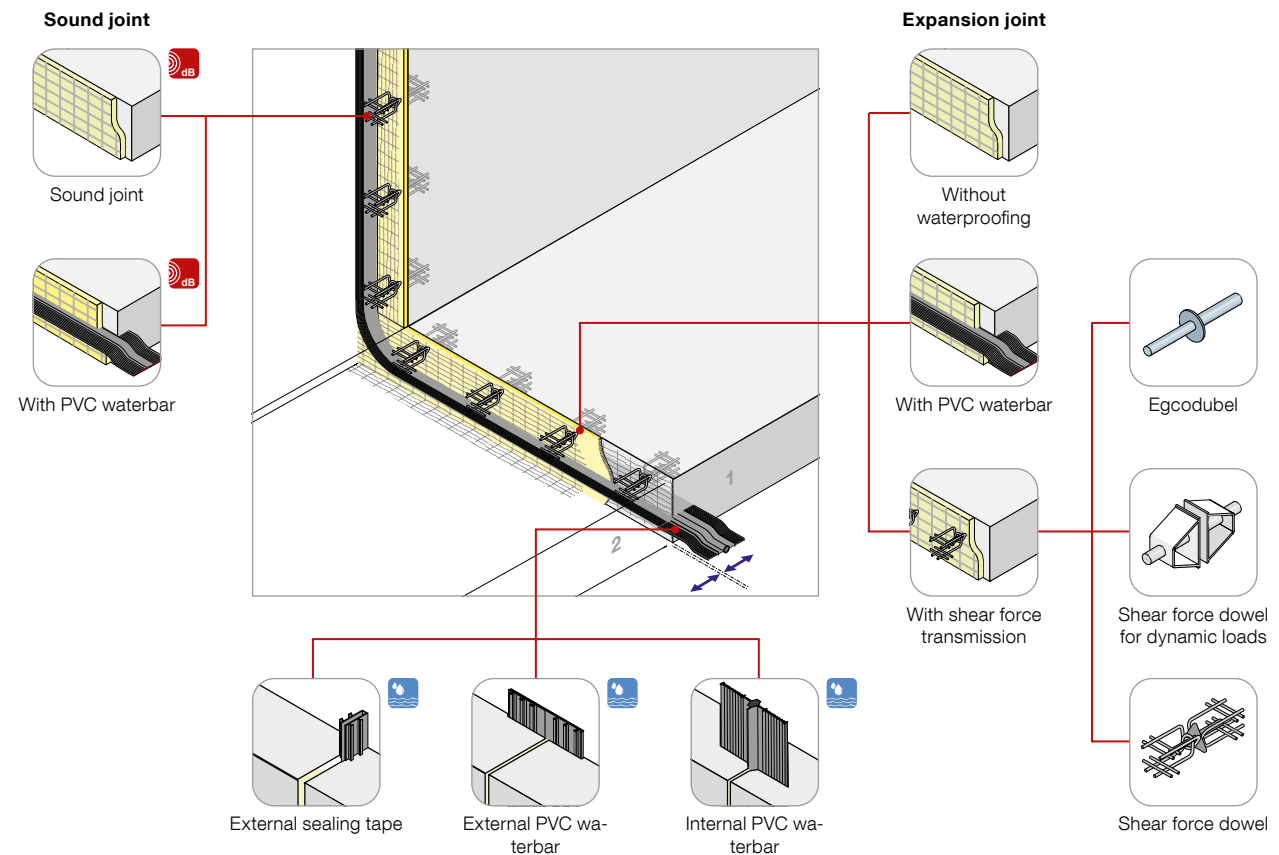
Stremaform® stay-in-place formwork for expansion joints

Stremaform® formwork elements for expansion joints decouple components and absorb their movements within the joint. The elements are used as permanent formwork in floor slabs, ceilings and walls. The formwork elements are prefabricated by us to size, no stripping is required. Reinforcement and concreting can be continued independently and without interruption.

We produce the expansion joint elements with the joint insert of your choice: Rigid foam, heat-resistant mineral wool or sound-insulating mineral fibre.

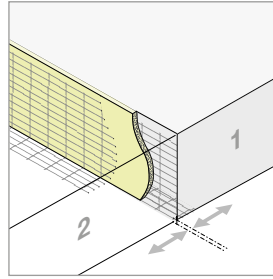
★ Advantages

- Faster and more cost-effective formwork compared to timber formwork
- No dismantling or disposal of formwork material
- Reliable and functional formwork element
- Proven quality: Engineered in Germany for over 30 years



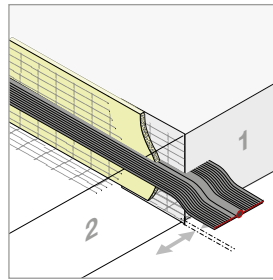
Stremaform® expansion joint formwork

The Stremaform® expansion joint formwork consists of carrier mats and a 20 mm thick expansion joint insert in between. This can optionally consist of Styrodur or fire-resistant mineral wool.



Stremaform® expansion joint formwork with carrying cage for rubber/PVC waterstop

- The Stremaform® formwork element with integrated carrying cage for rubber/PVC waterstop for the on-site mounting of a waterstop for expansion joint
- The Stremaform® fixer ensures that the middle hose of the waterstop for expansion joint is still exactly in the middle of the joint after concreting
- Carrying cage for rubber/PVC waterstop angled by 15° available for horizontal components
- With Styrodur 20 mm expansion joint insert and carrying cage for rubber/PVC waterstop 150/90-75 mm on one side, incl. expansion joint fixer



WG: 242

| Length mm | Element width mm |
|--------------|---------------------|
| 2400 | 200-1500 |

Assembly variants for expansion joint formwork with carrying cage for rubber/PVC waterstop

WG: 242

| Description |
|---|
| Supports on both sides |
| Sheet metal profile 60/20 mm single-sided |
| Sheet metal profile 110/20 mm single-sided |
| Carrying cage for rubber/PVC waterstop 180/90-75 mm on one side |
| Carrying cage for rubber/PVC waterstop angled upwards by 15° |

Formwork elements for expansion joint formwork with carrying cage for rubber/PVC waterstop

WG: 242

| Description |
|-------------------------------------|
| Corner unit |
| Cross element |
| T-unit/section |
| Unit for floor slab/wall transition |

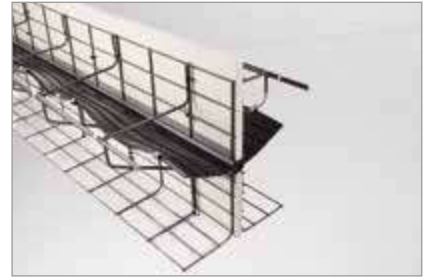
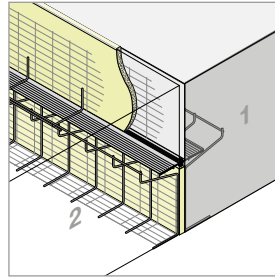
Joint insert

WG: 242

| Material | Thickness mm | Element width mm |
|--------------|-----------------|---------------------|
| Styrodur | 30 | 200-1500 |
| Mineral wool | 20 | 200-1500 |
| Mineral wool | 30 | 200-1500 |

Stremaform® expansion joint formwork with two-piece carrying cage for rubber/PVC waterstop

When installing large water stops we recommend the use of a two-piece version of the carrying cage for rubber/PVC waterstop. The PVC waterbar is rolled out onto the bottom part of the cage with the upper part being installed later. For horizontal structural elements, the carrying cage for rubber/PVC waterstop can be angled upwards by 15° on both sides to aid concrete placement.

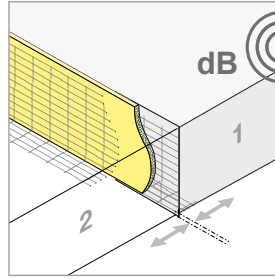

Stremaform® expansion joint formwork with integrated shear force transmission

All Stremaform® units for expansion joints can also be supplied with integrated shear force dowels. The different applications of the Egcodubel and Egcodorn dowels can be found from page 104 onwards.



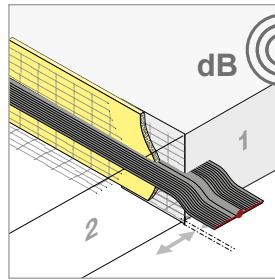
Stremaform® sound joint

The Stremaform® sound joint is used for the acoustic decoupling of concrete members. The ready-to-install formwork is installed in semi-detached and terraced houses for acoustic decoupling between the individual residential buildings.



Stremaform® sound joint with carrying cage for rubber/PVC waterstop

For the water-impermeable sector, the Stremaform® sound joint is additionally equipped with a carrying cage for rubber/PVC waterstop. The PVC waterbar is installed in-situ. With joint inlay, mineral wool 20 mm and carrying cage for rubber/PVC waterstop 150/60-45 mm, single-sided, incl. retaining clip.



WG: 242

| Length mm | Element width mm |
|--------------|---------------------|
| 2400 | 200-1500 |

Surcharge for fixed lengths on request.

Assembly variants for sound joint formwork with carrying cage for rubber/PVC waterstop

WG: 242

| Description |
|---|
| Supports on both sides |
| Carrying cage for rubber/PVC waterstop 180/60-45 mm on one side |
| Carrying cage for rubber/PVC waterstop angled upwards by 15° |

Sound jointing formwork with carrying cage for rubber/PVC waterstop

WG: 242

| Description |
|-------------------------------------|
| Corner unit |
| Cross element |
| T-unit/section |
| Unit for floor slab/wall transition |

Joint insert

WG: 242

| Material | Thickness mm | Element width mm |
|--------------|-----------------|---------------------|
| Mineral wool | 40 | 200-1500 |



Tubbox® column former

Concrete columns can be produced in different geometries and surface qualities with Tubbox® column formers. They are a time-saving and cost-effective alternative to conventional column formwork. The disposable column formers are equipped with a ripcord for easier removal.

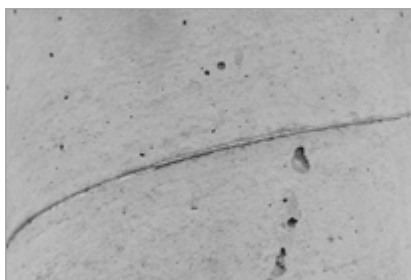
★ Advantages

- Fast set up and stripping accelerates construction
- Easy and handy for transport and installation
- Eliminates time and costs of cleaning and return transport
- Several columns can be produced in one concreting period
- Release agent is not necessary



Tubbox® round column formwork - spiral

Familiar concrete surface quality with normal blowhole pattern and slight impression of the spiral winding structure of the column former.



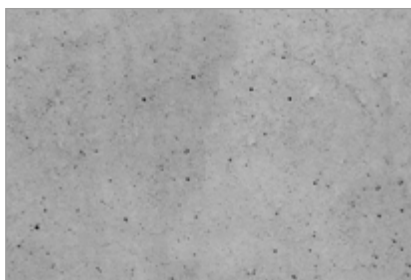
WG: 132

| Item No. | Internal diameter | Concrete requirements | Weight |
|----------|-------------------|-----------------------|--------|
| | mm | m ³ /m | kg/m |
| SRS150 | 150 | 0.019 | 1.45 |
| SRS200 | 200 | 0.033 | 1.89 |
| SRS240 | 240 | 0.048 | 2.20 |
| SRS250 | 250 | 0.052 | 2.39 |
| SRS300 | 300 | 0.074 | 2.67 |
| SRS350 | 350 | 0.101 | 3.98 |
| SRS400 | 400 | 0.132 | 4.67 |
| SRS450 | 450 | 0.167 | 5.63 |
| SRS500 | 500 | 0.206 | 6.87 |
| SRS550 | 550 | 0.249 | 7.80 |
| SRS600 | 600 | 0.297 | 9.34 |
| SRS650 | 650 | 0.348 | 10.79 |
| SRS700 | 700 | 0.404 | 12.11 |
| SRS800 | 800 | 0.528 | 17.00 |
| SRS1000 | 1000 | 0.825 | 23.44 |

Tubbox® column formers are characterized by a high resistance to the fresh concrete pressure. The necessary strength is achieved approx. 3 days after production. In order to reduce the risk of damage during transport or use, we recommend that you observe this deadline when planning your material. The maximum length is 6.0 m for a pipe diameter > 600 mm and 8.0 m for a pipe diameter ≤ 600 mm. If the maximum length is exceeded, the split version will be offered. The necessary mounting of the column formers must be done by the customer. A surcharge of 10% is applied for lengths over 6 metres. Price for lengths under 2 metres on request. Length tolerance ±25 mm.

Tubbox® round column formwork - smooth

Familiar concrete surface quality with occasional blowhole formation, but otherwise smooth concrete surface as an imprint of the plastic insert. With a column former diameter of more than 600 mm, two vertical joints of the column former insert are visible.



WG: 134

| Item No. | Internal diameter | Concrete requirements | Weight |
|----------|-------------------|-----------------------|--------|
| | mm | m ³ /m | kg/m |
| SRG150 | 150 | 0.019 | 1.71 |
| SRG200 | 200 | 0.033 | 2.24 |
| SRG240 | 240 | 0.048 | 2.62 |
| SRG250 | 250 | 0.052 | 2.83 |
| SRG300 | 300 | 0.074 | 3.19 |
| SRG350 | 350 | 0.101 | 4.59 |
| SRG400 | 400 | 0.132 | 5.37 |
| SRG450 | 450 | 0.167 | 6.42 |
| SRG500 | 500 | 0.206 | 7.74 |
| SRG550 | 550 | 0.249 | 8.76 |
| SRG600 | 600 | 0.297 | 10.39 |
| SRG650 | 650 | 0.348 | 11.92 |
| SRG700 | 700 | 0.404 | 13.33 |
| SRG800 | 800 | 0.528 | 18.40 |
| SRG1000 | 1000 | 0.825 | 25.19 |

Tubbox® column formers are characterized by a high resistance to the fresh concrete pressure. The necessary strength is achieved approx. 3 days after production. In order to reduce the risk of damage during transport or use, we recommend that you observe this deadline when planning your material. The maximum length is 6.0 m for a pipe diameter > 600 mm and 8.0 m for a pipe diameter ≤ 600 mm. If the maximum length is exceeded, the split version will be offered. The necessary mounting of the column formers must be done by the customer. A surcharge of 10% is applied for lengths over 6 metres. Price for lengths under 2 metres on request. Length tolerance ±25 mm.

Tubbox® round column formwork - blowhole-free

Highest surface hardness of the edge concrete layer, largely free of blowholes. For more precise information, see Zemdrain®. Overlap of Zemdrain® liner visible.



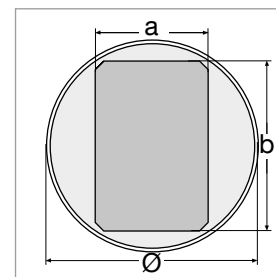
WG: 136

| Item No. | Internal diameter | Concrete requirements | Weight |
|----------|-------------------|-----------------------|--------|
| | mm | m ³ /m | kg/m |
| SRL150 | 150 | 0.019 | 1.61 |
| SRL200 | 200 | 0.033 | 2.11 |
| SRL240 | 240 | 0.048 | 2.46 |
| SRL250 | 250 | 0.052 | 2.66 |
| SRL300 | 300 | 0.074 | 2.99 |
| SRL350 | 350 | 0.101 | 4.36 |
| SRL400 | 400 | 0.126 | 5.10 |
| SRL450 | 450 | 0.167 | 6.12 |
| SRL500 | 500 | 0.206 | 7.41 |
| SRL550 | 550 | 0.249 | 8.40 |
| SRL600 | 600 | 0.297 | 9.99 |
| SRL650 | 650 | 0.348 | 11.49 |
| SRL700 | 700 | 0.404 | 12.87 |
| SRL800 | 800 | 0.528 | 17.87 |
| SRL1000 | 1000 | 0.825 | 24.52 |

Tubbox® column formers are characterized by a high resistance to the fresh concrete pressure. The necessary strength is achieved approx. 3 days after production. In order to reduce the risk of damage during transport or use, we recommend that you observe this deadline when planning your material. The maximum length is 6.0 m for a pipe diameter > 600 mm and 8.0 m for a pipe diameter ≤ 600 mm. If the maximum length is exceeded, the split version will be offered. The necessary mounting of the column formers must be done by the customer. A surcharge of 10% is applied for lengths over 6 metres. Price for lengths under 2 metres on request. Length tolerance ±25 mm.

Tubbox® rectangular column formwork

Tubbox® rectangular column formwork. High-quality concrete members can be created with the high-quality liner. Corners in a chamfered execution.



WG: 138

| Description | Item No. | Dimensions a x b mm | Concrete requirements m³/m | Weight kg/m |
|-------------|-----------|------------------------|-------------------------------|----------------|
| Rectangular | SRR175240 | 175 x 240 | 0.044 | 5.39 |
| | SRR200240 | 200 x 240 | 0.050 | 5.40 |
| | SRR200250 | 200 x 250 | 0.053 | 6.74 |
| | SRR200300 | 200 x 300 | 0.063 | 8.88 |
| | SRR200350 | 200 x 350 | 0.074 | 8.94 |
| | SRR200400 | 200 x 400 | 0.084 | 12.48 |
| | SRR240300 | 240 x 300 | 0.076 | 8.85 |
| | SRR240350 | 240 x 350 | 0.088 | 10.30 |
| | SRR240360 | 240 x 360 | 0.091 | 10.30 |
| | SRR240365 | 240 x 365 | 0.092 | 10.30 |
| | SRR240400 | 240 x 400 | 0.101 | 10.32 |
| | SRR240450 | 240 x 450 | 0.113 | 14.27 |
| | SRR240500 | 240 x 500 | 0.126 | 16.53 |
| | SRR250300 | 250 x 300 | 0.079 | 8.84 |
| | SRR250350 | 250 x 350 | 0.092 | 10.28 |
| | SRR250400 | 250 x 400 | 0.105 | 12.34 |
| | SRR250500 | 250 x 500 | 0.131 | 16.48 |
| | SRR300350 | 300 x 350 | 0.110 | 10.19 |
| | SRR300400 | 300 x 400 | 0.126 | 12.20 |
| | SRR300450 | 300 x 450 | 0.142 | 14.04 |
| SRR300500 | 300 x 500 | 0.158 | 16.24 | |
| SRR350400 | 350 x 400 | 0.147 | 13.94 | |
| SRR400500 | 400 x 500 | 0.210 | 18.58 | |
| Square | SRQ150150 | 150 x 150 | 0.024 | 3.68 |
| | SRQ200200 | 200 x 200 | 0.042 | 5.08 |
| | SRQ240240 | 240 x 240 | 0.060 | 6.82 |
| | SRQ250250 | 250 x 250 | 0.066 | 7.34 |
| | SRQ300300 | 300 x 300 | 0.095 | 9.00 |
| | SRQ350350 | 350 x 350 | 0.129 | 12.15 |
| | SRQ360360 | 360 x 360 | 0.136 | 12.12 |
| | SRQ400400 | 400 x 400 | 0.168 | 13.80 |
| | SRQ450450 | 450 x 450 | 0.213 | 18.53 |
| | SRQ500500 | 500 x 500 | 0.263 | 21.00 |

Tubbox® formwork pipes are characterised by their high resistance to fresh concrete pressure.

The standard length is 2.0 m - 5.0 m.

The maximum standard length is 5.0 m.

If the maximum standard length is exceeded, an additional surcharge of 10% will be applied.

If the maximum standard length is exceeded, the split version will be offered. The necessary mounting of the column formers must be done by the customer.



Price for lengths under 2 metres on request. Length tolerance ± 25 mm.

Maximum possible dimensions 500 x 500 mm.

Tubbox® propping (without push-pull props)

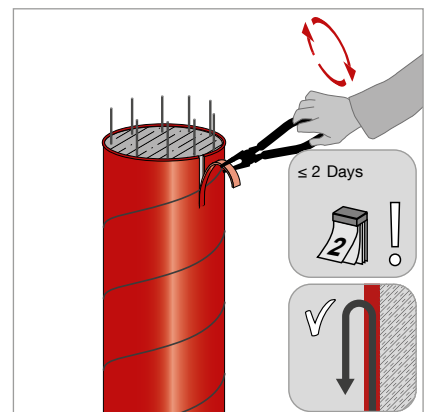
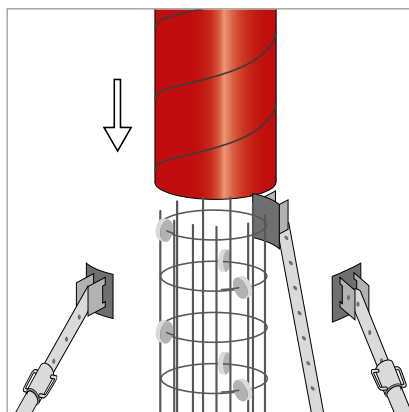
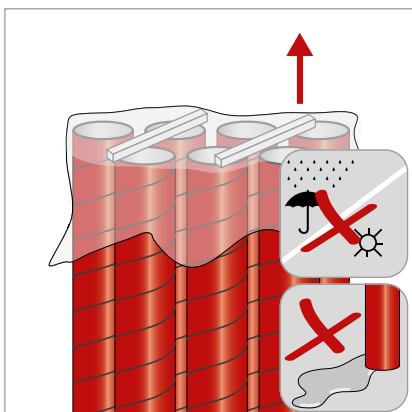
WG: 140

Suitable for the vertical erection of the column formers.

| | Description | Item No. | Weight kg/pce |
|---|--|------------|------------------|
|  | Size I for column former Ø 200 - 600 mm, type fork, lashing strap with ratchet and 3 fork pieces | SRZS200 | 2.30 |
| | Size II for column former Ø > 600 mm, type fork, lashing strap with ratchet and 3 fork pieces | SRZS600 | 2.50 |
| | Additional fork bar piece for connecting a fourth push-pull prop | SRZSGST | 0.43 |
|  | Size I for column former Ø 200 - 600 mm, type threaded rod, lashing strap with ratchet and 3 threaded steel pieces | SRZSGEW200 | 2.40 |
| | Size II for column former Ø > 600 mm, type thread- ed rod, lashing strap with ratchet and 3 threaded steel pieces | SRZSGEW600 | 2.60 |
| | Additional threaded bar piece for connecting a fourth push-pull prop | SRZSGEW | 0.45 |

Application instructions for Tubbox® column formers

- Always support formwork over a large area during transport in order to avoid pressure points.
- Always store formwork vertically.
- Protect formwork against abrasive loads.
- Protect Tubbox® column formers against heat, rain and moisture – do not place in water.
- If accidental damage occurs, protect the damaged surface area against moisture by applying/sealing with adhesive tape.
- This formwork was manufactured, tested and prepared for dispatch in perfect condition following DIN 9001 guidelines. Transport damage or other faults must be recorded on the delivery documents at on receipt of goods. Our guarantee extends only to faults noted on the delivery documents immediately on arrival.
- Do not force column former over reinforcement which may be too large, or over spacers. Protruding spacers and rebars damage the formwork and make impressions on the concrete.





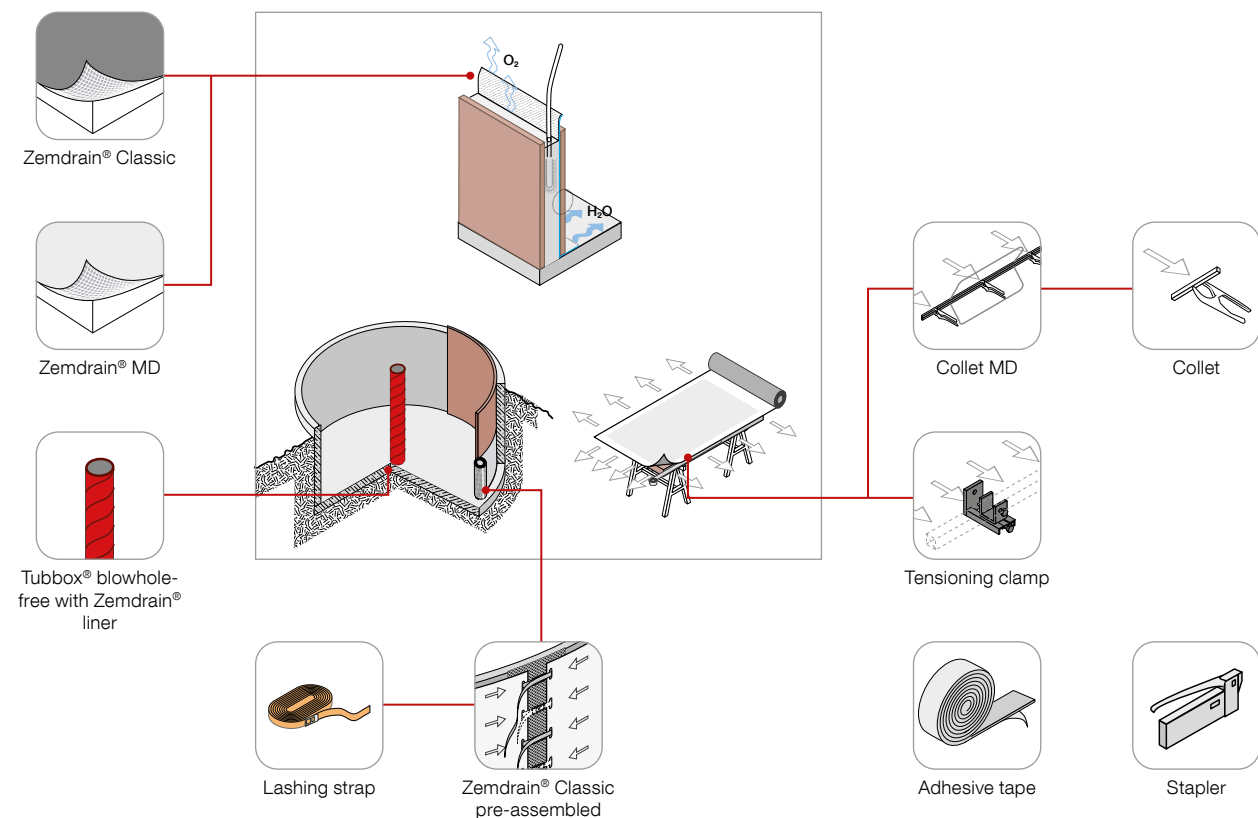
Zemdrain® CPF liner

The controlled permeability formwork (CPF) liner Zemdrain® drains the water from the concrete surface, achieving a harder, denser and more resistant surface finish. This significantly increases the service life of the concrete structure.

As well as delivering increased surface hardness, Zemdrain® CPF liner produces a blowhole free, low-porosity concrete finish. The improved surface ensures lower growth of microorganisms and algae as well as better freeze-deicing salt resistance, and at the same time increases abrasion resistance.

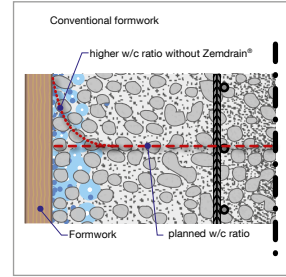
★ Advantages

- Increased service life of the concrete surface
- Value retention of the concrete surface
- Proven cost savings over the total service life of the structure
- Increased abrasion resistance
- Release agent is not necessary



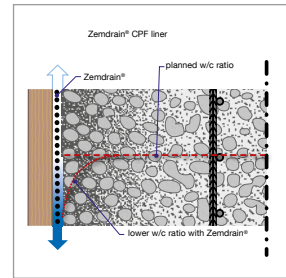
The challenge

Since the formwork is impermeable to water or only slightly absorbent, air and the excess water accumulate at the formwork due to the compaction process. Without Zemdrain, the result is an increase in the w/c ratio, increased pore formation, insufficient density (blowholes) and thus a concrete structure open to attack.



The solution

Controlled permeability formwork liner Zemdrain® drains the excess water from the concrete surface and causes the w/c ratio to be lowered to an almost optimal value. The concrete surface thus becomes harder, denser and therefore more resistant to attack.

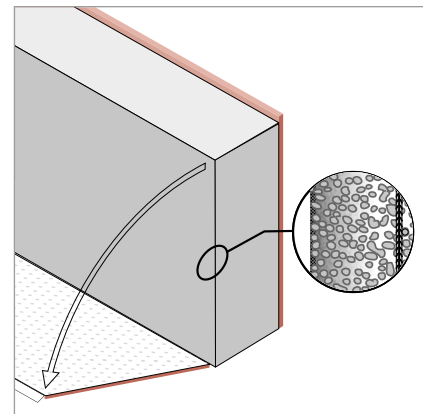
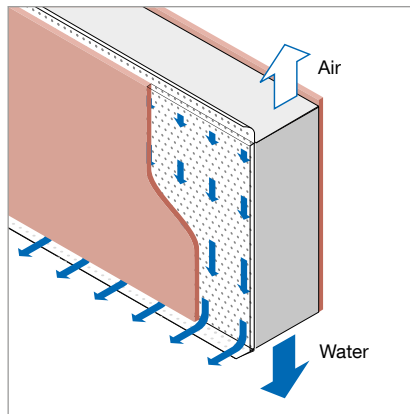
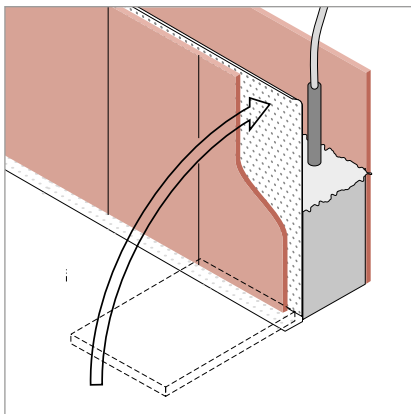


The result

With Zemdrain® as a CPF liner, the concrete obtains a higher surface hardness and an almost blowhole-free surface with low porosity. The improved surface ensures lower growth of microorganisms and algae as well as better freeze-deicing salt resistance, and at the same time increases abrasion resistance.



without Zemdrain® (left) vs. with Zemdrain® (right)



Zemdrain® is a registered trademark of DuPont.

Zemdrain® Classic

- Controlled permeability formwork liner
- Smooth to slightly structured, grey upper side (concrete side)
- Back (formwork side) black and diamond-shaped recesses
- For single use
- Approval for drinking water according to W270 and W347



WG: 96

| Item No. | Width m | Length m | Area m ² /roll | Weight kg/roll |
|----------|------------|-------------|------------------------------|-------------------|
| ZEM1600 | 1.60 | 50.00 | 80.00 | 27.75 |
| ZEM1900 | 1.90 | 50.00 | 95.00 | 33.00 |
| ZEM2250 | 2.25 | 50.00 | 112.50 | 39.00 |
| ZEM2600 | 2.60 | 50.00 | 130.00 | 45.00 |
| ZEM2900 | 2.90 | 50.00 | 145.00 | 50.00 |
| ZEM3200 | 3.20 | 50.00 | 160.00 | 55.00 |
| ZEM4200 | 4.20 | 50.00 | 210.00 | 73.50 |

Width tolerance ± 20 mm

Zemdrain® MD

- Controlled permeability formwork liner
- Smooth to slightly structured white upper side (concrete side)
- Back (formwork side) with special drainage grid
- High cost-effectiveness due to possible multiple use (2 - 3 times) and simple, quick installation
- High storage capacity, therefore also suitable for inclined to horizontal surfaces



WG: 96

| Item No. | Width m | Length m | Area m ² /roll | Weight kg/roll |
|----------|------------|-------------|------------------------------|-------------------|
| ZEMMD2 | 2.50 | 35.00 | 87.50 | 59.00 |

Width tolerance ± 10 mm

Zemdrain® Classic pre-assembled

- Zemdrain® Classic pre-assembled is a CPF liner for circular formwork made to measure for the inside of the round container. Pre-assembly facilitates fast covering of round container formwork.
- For single use



WG: 96

| Description | Item No. |
|--|-----------|
| Conversion of the Zemdrain® CPF liner to suit the inner diameter and height of the round container | ZEMSONDER |






Zemdrain® cut ware

WG: 96

| Description | Item No. |
|---|-------------|
| Cutting of the complete rolls to reduce the roll length. Remnants are calculated and can be supplied on request. Cutting tolerance ± 50 mm. Minimum length 3 m. | ZEMSCHNITTQ |
| Cutting of the complete rolls to reduce the roll widths. Remnants are calculated and can be supplied on request. Cutting tolerance ± 20 mm. | ZEMSCHNITTL |






Tools for processing Zemdrain®

WG: 95

| | Description | Item No. | Packaging unit Pcs |
|---|--|-----------|-----------------------|
|  | Collet, wide-area clamping and tensioning of Zemdrain® Classic over small formwork areas. Subsequent fastening with staples. | ZSZKAZ | 1 |
|  | Collet MD 2.5 m, two-piece collet for Zemdrain® MD | ZSZMD2500 | 1 |
|  | Tensioning clamp for fixing of Zemdrain®. Also available for rental. | ZSL0810 | 1 |
|  | Adjustable stapler, manually operated, for fixing Zemdrain® Classic and MD to formwork surfaces. Uses 8 & 10 mm staples | ZTAKMD1 | 1 |
|  | Spare staples, stainless steel, Monel 053, 10 mm long | ZTEK10 | 1200 |

Zemdrain® components

WG: 95

| | Description | Item No. | Length m | Width mm | Thickness mm | Packaging unit Pcs |
|---|---|----------|-------------|-------------|-----------------|-----------------------|
|  | Special double-sided adhesive tape for the rear-sided fixing and sealing of overlaps of Zemdrain® Classic, not suitable for drinking water tank applications | ZDSSKB | 50.00 | 50 | 0.5 | 24 |
|  | MD fixing tape, double-sided adhesive tape, white, for fixing and sealing Zemdrain® MD to the formwork, not suitable for use in drinking water tank applications | ZBBAND | 10.00 | 50 | 1.0 | 20 |
|  | Zemdrain® covering tape, laminated self-adhesive tape for covering formwork joints and stapled Zemdrain joints, for repairing possibly damaged Zemdrain surfaces or for the edge coverage of lined formwork sections, not suitable for use in drinking water supply systems | ZABAND | 10.00 | 50 | 0.5 | 30 |
|  | Zemdrain® covering tape for formwork joints, fastening with stapler clamps, not self-adhesive | ZEBAND | 30.00 | 50 | - | 24 |
|  | Foam rubber water bar, for sealing formwork element joints, not suitable for use in drinking water tank applications | FKBANDS | 10.00 | 19 | 6 | 15 |

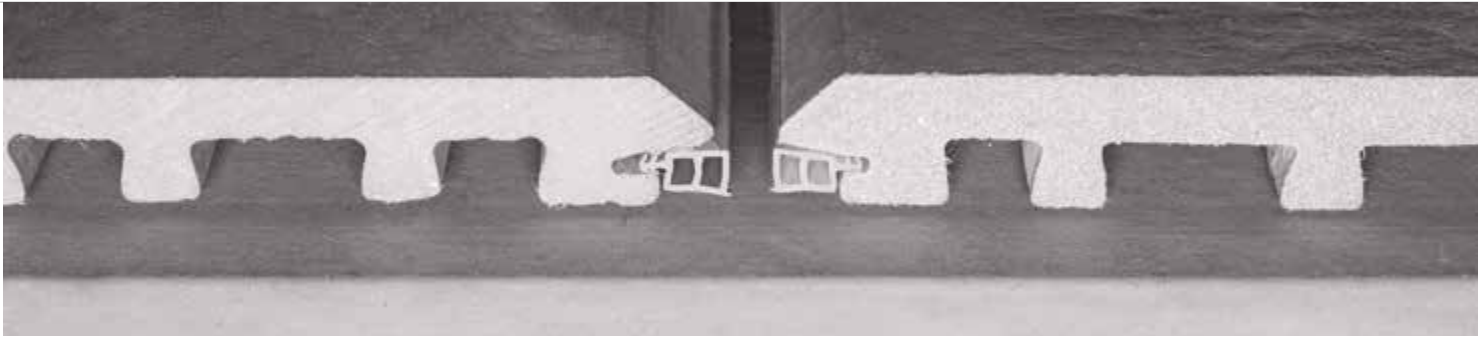
Spacers

Formwork technologies

Reinforcement technologies

Sealing technologies

Building acoustics



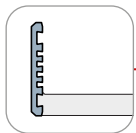
Balcony and ceiling edge formwork

The balcony and ceiling edge formworks are an ideal alternative to conventional timber formwork. The formwork elements remain in the concrete as permanent formwork and produce a clean finish of the concrete components.

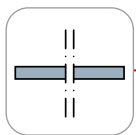
★ Advantages

- Easy assembly
- No elaborate stripping work
- Saves time and costs

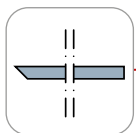
Upstand standard (AKF)



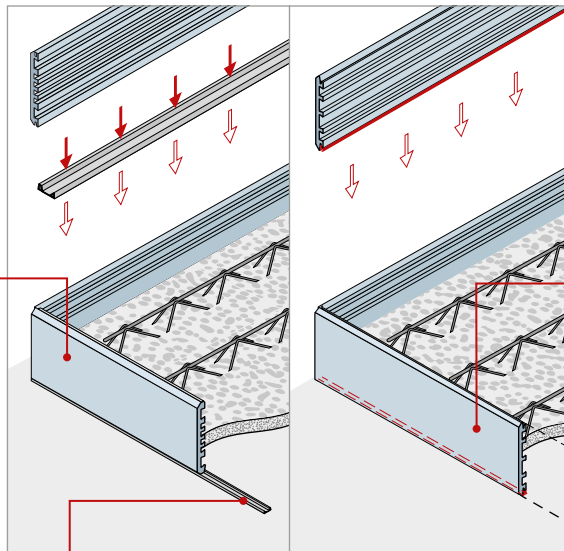
Standard unit



90° edges on both sides

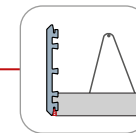


45° edge on one side

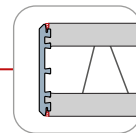


Drip profile made of plastic

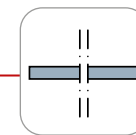
Upstand with sealing strip (AKZ)



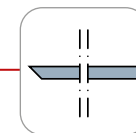
Type "Slab" with one-sided sealing strip



Type "Wall" with double-sided sealing strip



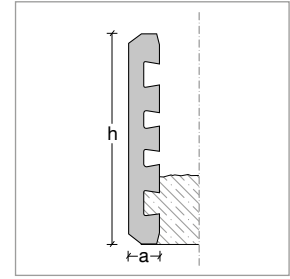
90° edges on both sides



45° edge on one side

Standard upstand unit

- With flat support
- Recommended for formwork of slab openings, stair exits and various recesses in the interior area
- With additional drip profile made of plastic, suitable for balcony formwork with drip former in the outdoor area



WG: 62


| Item No. | Dimensions h x a mm | Length m | Weight kg/m | Pallet content Pcs | Weight kg/pallet |
|------------|------------------------|-------------|----------------|-----------------------|---------------------|
| AKF1602000 | 160 x 25 | 2.00 | 6.50 | 100 | 1320 |
| AKF1602700 | 160 x 25 | 2.70 | 6.48 | 56 | 1000 |
| AKF1802000 | 180 x 25 | 2.00 | 7.00 | 100 | 1420 |
| AKF1802700 | 180 x 25 | 2.70 | 7.04 | 56 | 1084 |
| AKF2002000 | 200 x 25 | 2.00 | 8.00 | 100 | 1620 |
| AKF2002700 | 200 x 25 | 2.70 | 7.78 | 56 | 1196 |
| AKF2202000 | 220 x 25 | 2.00 | 8.50 | 80 | 1380 |
| AKF2202700 | 220 x 25 | 2.70 | 8.52 | 56 | 1308 |
| AKF2402000 | 240 x 25 | 2.00 | 9.50 | 80 | 1540 |
| AKF2402700 | 240 x 25 | 2.70 | 9.52 | 56 | 1459 |
| AKF2502000 | 250 x 25 | 2.00 | 10.00 | 80 | 1620 |
| AKF2502700 | 250 x 25 | 2.70 | 10.00 | 56 | 1532 |
| AKF3002000 | 300 x 25 | 2.00 | 12.00 | 60 | 1460 |
| AKF3002700 | 300 x 25 | 2.70 | 12.22 | 28 | 944 |

One-sided mitre cut 45° on request.

Acceptance only in complete packaging unit (pallet content)

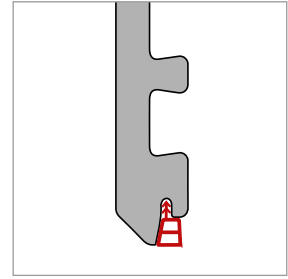
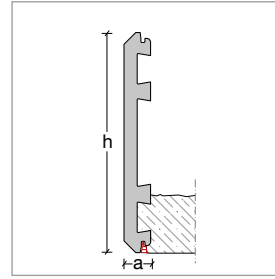
Drip profile made of plastic for upstands

WG: 62

| | Item No. | Dimensions a x b x c mm | Length m | Packaging unit Pcs |
|---|-----------|----------------------------|-------------|-----------------------|
|  | AKFAP2500 | 10 x 31 x 10 | 2.50 | 16 |

Uprand pre-mounted with a sealing strip

- Compensation of small deviations of the formwork surface
- Straight, sharp-edged finish
- Equipped as standard with a sealing strip. Available with two sealing strips on request



WG: 62

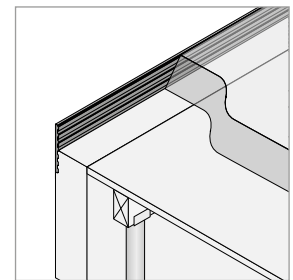
| Item No. | Dimensions h x a | Length m | Weight kg/m | Pallet content | Weight kg/pallet |
|-------------|------------------|-------------|----------------|----------------|---------------------|
| | mm | | | Pcs | |
| AKZ1602000D | 160 x 25 | 2.00 | 5.69 | 100 | 1157 |
| AKZ1602700D | 160 x 25 | 2.70 | 5.68 | 50 | 787 |
| AKZ1802000D | 180 x 25 | 2.00 | 6.19 | 100 | 1257 |
| AKZ1802700D | 180 x 25 | 2.70 | 6.19 | 50 | 855 |
| AKZ2002000D | 200 x 25 | 2.00 | 6.69 | 100 | 1358 |
| AKZ2002700D | 200 x 25 | 2.70 | 6.70 | 50 | 925 |
| AKZ2202000D | 220 x 25 | 2.00 | 7.16 | 80 | 1166 |
| AKZ2202700D | 220 x 25 | 2.70 | 7.16 | 50 | 987 |
| AKZ2402000D | 240 x 25 | 2.00 | 7.65 | 80 | 1244 |
| AKZ2402700D | 240 x 25 | 2.70 | 7.67 | 50 | 1055 |
| AKZ2502000D | 250 x 25 | 2.00 | 7.95 | 80 | 1292 |
| AKZ2502700D | 250 x 25 | 2.70 | 7.95 | 50 | 1094 |
| AKZ2802000D | 280 x 25 | 2.00 | 10.46 | 60 | 1275 |
| AKZ2802700D | 280 x 25 | 2.70 | 10.46 | 25 | 726 |
| AKZ3002000D | 300 x 25 | 2.00 | 9.18 | 60 | 1121 |
| AKZ3002700D | 300 x 25 | 2.70 | 9.18 | 25 | 640 |
| AKZ3502000D | 350 x 25 | 2.00 | 13.15 | 40 | 1072 |
| AKZ3502700D | 350 x 25 | 2.70 | 13.15 | 25 | 908 |
| AKZ3602700D | 360 x 25 | 2.70 | 13.32 | 25 | 919 |
| AKZ4002700D | 400 x 25 | 2.70 | 14.75 | 25 | 1015 |

One-sided mitre cut 45° on request.

Acceptance only in complete packaging unit (pallet content)

Fibre concrete shutter panel

- As slab edge formwork in concrete construction and for covering formwork joints
- Time-saving: no formwork erection
- No leakage of the liquid concrete in the event of unclean formwork joints
- Ideal bond with cast-in-situ concrete
- Dimensionally stable
- Cutting on request



WG: 64

| Item No. | Dimensions h x a | Length m | For slab thickness mm | Weight kg/m | Pallet content | Weight kg/pallet |
|-------------|------------------|-------------|--------------------------|----------------|----------------|---------------------|
| | mm | | | | Pcs | |
| FBSB2501200 | 250 x 20 | 1.20 | 180 | 9.60 | 100 | 1172 |
| FBSB3001200 | 300 x 20 | 1.20 | 200 | 10.00 | 100 | 1220 |
| FBSB3501200 | 350 x 23 | 1.20 | 250 | 14.00 | 80 | 1364 |

Further dimensions available on request. Not suitable for use in exposed concrete surfaces, or usable only after prior clarification.

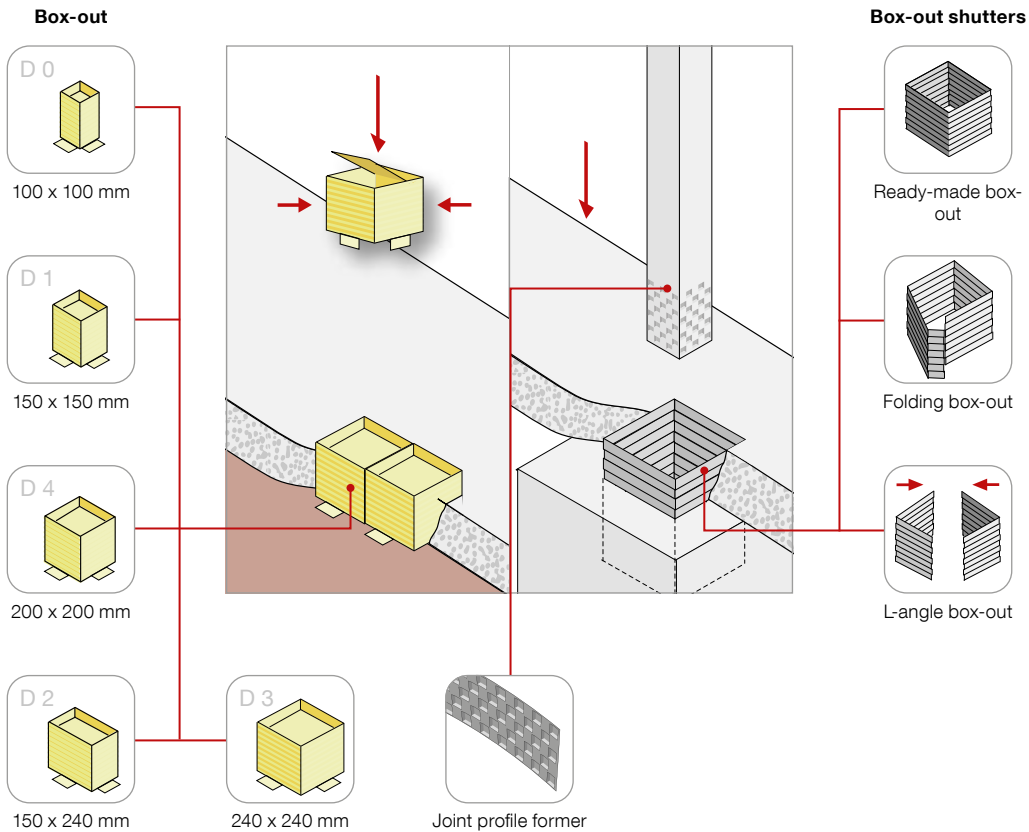


Box-out shutters and recess formers

Recesses made of metal or cardboard provide the right formwork element for every recess.

Advantages

- Elaborate stripping work omitted
- Easy to handle on the building site
- You save costs and time compared to conventional timber formwork



Folding box-out, pre-mounted - art. no. KSMONT

- The box-out shutter profile meets the requirements of EN 1992-1-1 for the highest category "indented"
- From a dimension of 0.20 m x 0.20 m
- Also available with extra support
- Also available in rectangular shape



Folding box-out, unassembled incl. self-tapping screws - art. no. KSUMON

- The box-out shutter profile meets the requirements of EN 1992-1-1 for the highest category "indented"
- No freight and storage problems
- Simple building site transport
- Easy and quick assembly with the self-tapping screws included
- Folding dimension pre-defined, fold sheet metal to the stop
- Also available in rectangular shape



Self-tapping screws

WG: 194

| Item No. | Packaging unit |
|----------|----------------|
| | Pcs |
| SBKBSS | 50 |

L-angle box-out - art. no. KSLWINKEL

- The box-out shutter profile meets the requirements of EN 1992-1-1 for the highest category "indented"
- Very large dimensions possible
- Delivered unassembled in two separate L-angles
- Simple and fast installation by plugging together without any further fastening material
- Inexpensive transport and storage options
- A range of system heights to suit slab depths from 500 mm to 2500 mm available
- Also available in rectangular shape



Anchor hole drilling

WG: 86

| Description | Item No. |
|---------------------------|----------|
| 2 drill holes per box-out | SBKAL |

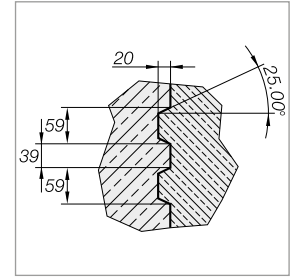
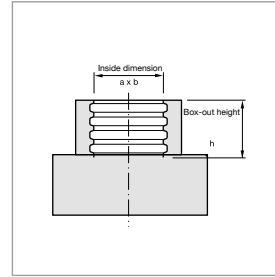
Folding box-outs pre-mounted, unassembled and L-angle box-outs

For further article and price information on folding box-outs pre-mounted, unassembled and L-angle box outs, please refer to the MAX FRANK online catalogue.



Please consider for all types of sleeve foundation:

- All dimensions are internal dimensions (always specify internal dimensions when ordering)
- Stable trapezoidal sheet metal, therefore often no stiffening necessary
- Profile depth 20 mm - take into account in the reinforcement layout
- Manufacturing tolerance: ± 20 mm
- Box-out height in increments of 50 mm



Stiffening

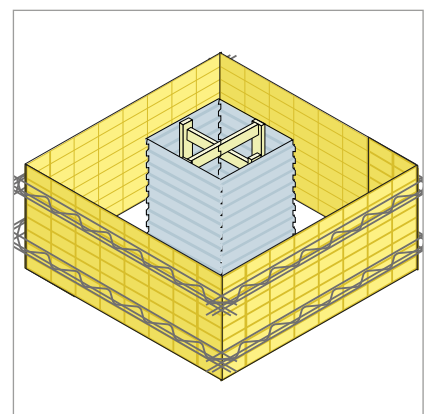
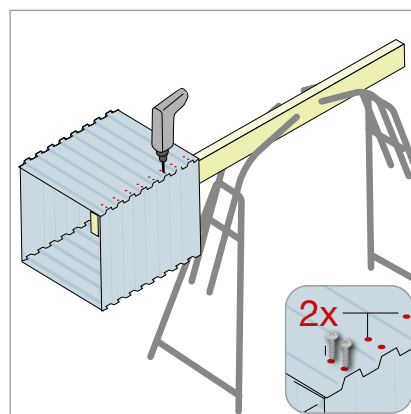
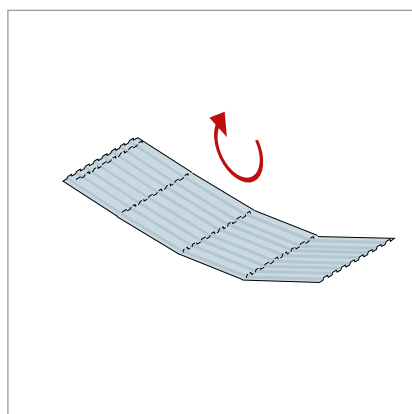
The box-out shutters are made of stable trapezoidal sheet metal. Stiffening can therefore often be dispensed with. However, if recesses with particularly large dimensions should be required, it is recommended to additionally stiffen the box-out shutters. The stiffening of the pre-mounted box-out shutters and the attachment of a base is possible in the factory, so that the shutters can be delivered fully assembled to the building site.



| Box-out width m | Box-out height m | | | | | | | | | | | | | | | | | |
|--------------------|---------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|--|
| | 0,30 | 0,40 | 0,50 | 0,60 | 0,70 | 0,80 | 0,90 | 1,00 | 1,10 | 1,20 | 1,30 | 1,40 | 1,50 | 1,60 | 1,70 | 1,80 | 1,90 | |
| 0,45/0,45 | | | | | | | | | | | | | | | | | | |
| 0,50/0,50 | | | | | | | | | | | | | | | | | | |
| 0,55/0,55 | | | | | | | | | | | | | | | | | | |
| 0,60/0,60 | | | | | | | | | | | | | | | | | | |
| 0,65/0,65 | | | | | | | | | | | | | | | | | | |
| 0,70/0,70 | | | | | | | | | | | | | | | | | | |
| 0,75/0,75 | | | | | | | | | | | | | | | | | | |
| 0,80/0,80 | | | | | | | | | | | | | | | | | | |
| 0,85/0,85 | | | | | | | | | | | | | | | | | | |
| 0,90/0,90 | | | | | | | | | | | | | | | | | | |
| 0,95/0,95 | | | | | | | | | | | | | | | | | | |
| 1,00/1,00 | | | | | | | | | | | | | | | | | | |

Table values are considered to be guiding values, depending on the building site conditions and the concrete pouring speed

Box-out, self-supporting Stiffening necessary



Box-out for slab box-outs

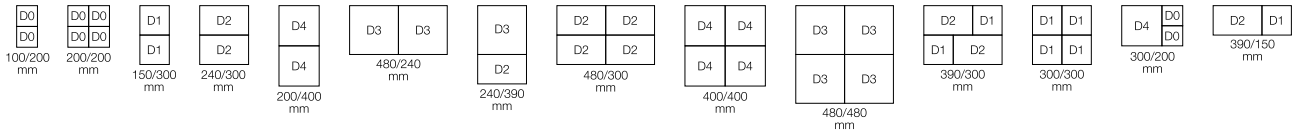
- High-quality coated cardboard, punched and perforated in a plate
- Stable due to inner stiffening ring
- Spill-proof due to void creation
- Easy stripping by pulling out the handle-like lid flap
- For larger recesses, we recommend our box-out shutters made of sheet steel
- Enlargement of the recess by combining several box-outs



WG: 108

| Item No. | Type | Length mm | Width mm | Height mm | Packaging unit Pcs | Weight kg/packaging unit | Pallet content Packaging unit | Weight kg/pallet |
|----------|------|-----------|----------|-----------|--------------------|--------------------------|-------------------------------|------------------|
| SBOXD0 | D 0 | 100 | 100 | 240 | 50 | 9.00 | 20 | 200 |
| SBOXD1 | D 1 | 150 | 150 | 240 | 50 | 16.00 | 15 | 260 |
| SBOXD2 | D 2 | 150 | 240 | 240 | 50 | 19.00 | 15 | 305 |
| SBOXD3 | D 3 | 240 | 240 | 240 | 50 | 26.00 | 10 | 280 |
| SBOXD4 | D 4 | 200 | 200 | 240 | 50 | 21.00 | 10 | 230 |

Combination possibilities



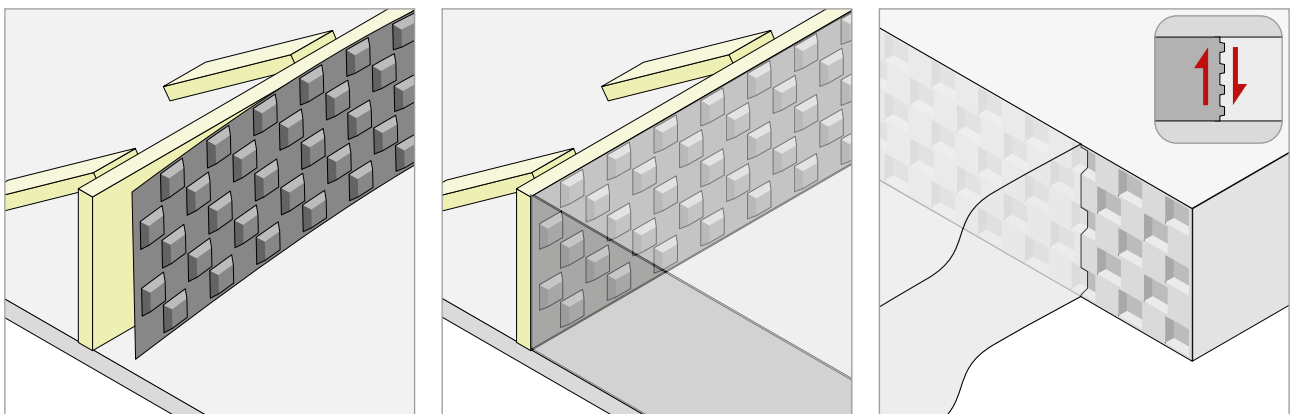
Joint profile former

- Made of moulded plastic
- Gives the concrete the optimal structure for the transmission of shear forces
- Replaces trapezoidal strips
- Cutting possible on the building site
- Fulfils the requirements of the highest category "indented" according to EN 1992-1-1, assuming a 90 % indented joint



WG: 118

| Description | Item No. | Length m | Width m | Profile height mm |
|---|-----------|----------|---------|-------------------|
| Joint profile former with perforation for simpler adaptation | FFP12083 | 1.22 | 0.79 | 12 |
| Joint profile former without perforation, multiple use possible | FFPO12083 | 1.22 | 0.79 | 12 |



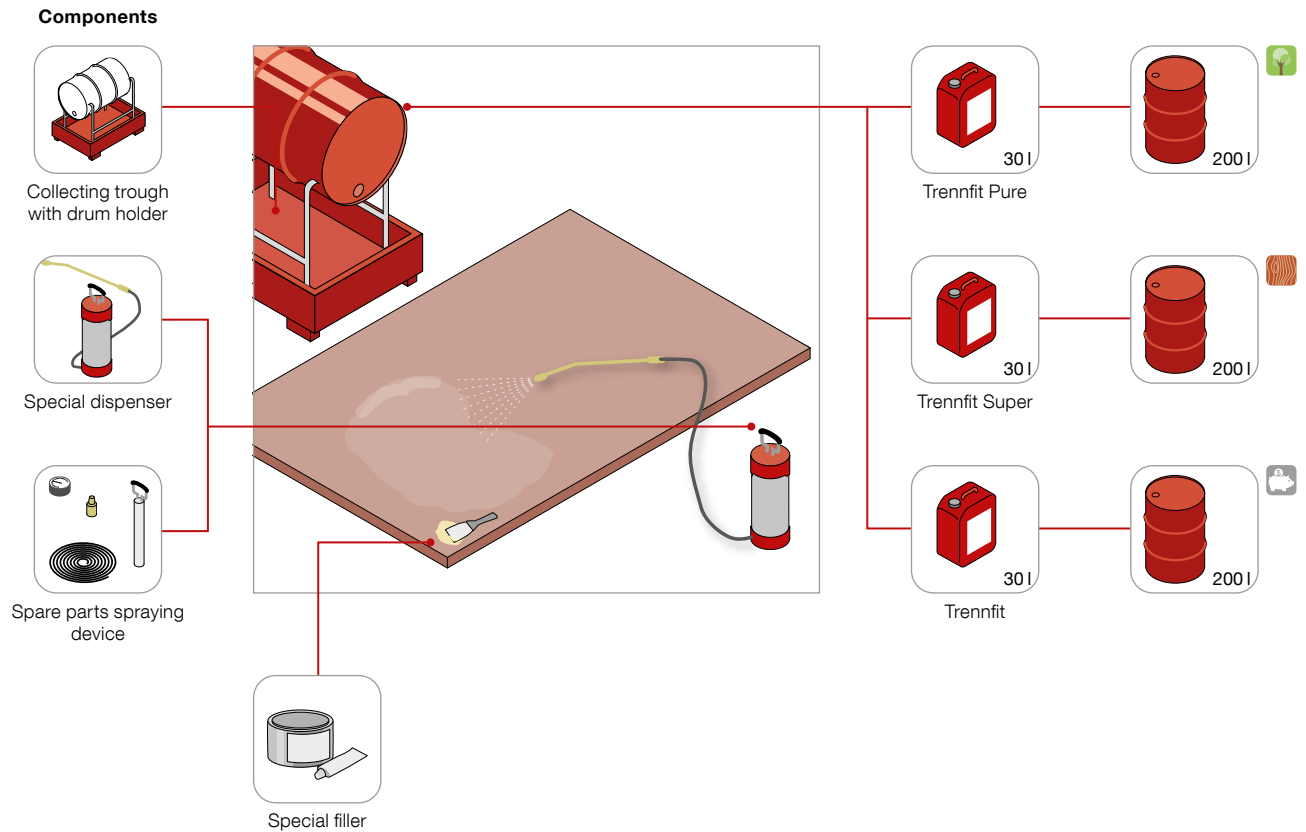


Trennfit release agent

Trennfit brand release agents offer the right product for all formwork types and areas of application. An excellent release effect is guaranteed. Trennfit affects neither the subsequent render, glue and paint adhesion, nor the concrete hardening. It leaves no residues on the concrete surface and does not lead to the abrasion of the concrete surface. All Trennfit release agents are available in 30 l canisters or 200 l drums.

Advantages

- Ready for use
- Increased lifespan of your formwork
- Reduced labour costs for formwork preparation and cleaning
- No abrasion of the concrete surface



Trennfit Pure

- The quickly bio-degradable concrete release agent
- Free from mineral oil
- From 100% regenerative raw materials
- Good release effect
- Not subject to labelling according to Hazardous Substances Ordinance and EU directives
- No impairment of the adhesion of render, glue and paint



WG: 88

| Item No. | Contents l/pce. | Pallet content Pcs |
|----------|--------------------|-----------------------|
| TPK030 | 30 | 27 |
| TPF200 | 200 | 4 |

Application area:

- For all concrete constructions
- Check application with exposed concrete
- Suitable for absorbent and non-absorbent formwork surfaces

Trennfit Super

- The physico-chemical release agent for highest demands
- No staining
- Very good render adhesion
- Processable up to temperatures of 15 °C
- Excellent rust protection properties, therefore well suited for machine maintenance



WG: 88

| Item No. | Contents l/pce. | Pallet content Pcs |
|----------|--------------------|-----------------------|
| TSK030 | 30 | 24 |
| TSF200 | 200 | 4 |

Application area:

- For all concrete constructions
- For exposed and white concrete
- For concrete surface coatings
- For rendering and stucco work
- For the manufacture of precast elements in heated and unheated formwork
- For the conservation of steel formwork and construction equipment

Trennfit

- The cost-effective release agent for all conventional types of concrete
- Good release effect
- Easy stripping
- Good render adhesion



WG: 88

| Item No. | Contents l/pce. | Pallet content |
|----------|--------------------|----------------|
| | | Pcs |
| TNK030 | 30 | 24 |
| TNF200 | 200 | 4 |

Application area:

- For all concrete constructions except for exposed and white concrete

Safety and environmental protection for Trennfit concrete release agents

- Frost resistant
- Not classified as dangerous goods according to ADR/RID, ADN/ADNR, IMDG, ICAO-TI/IATA-DGR
- Water hazard class 1 – i.e. slightly hazardous to water
- Flash point > 100 °C
- GHS CODE (Hazardous Materials Information System Code): Trennfit Pure BTM10, Trennfit Super BTM 20, Trennfit BTM 20
- Waste code: Trennfit Pure - 130207, Trennfit Super - 130205, Trennfit - 130205, empty steel and plastic containers - 150110

Yield per litre of Trennfit concrete release agent when using the special dispenser:

| Formwork type | Trennfit Pure | Trennfit Super | Trennfit |
|-------------------------|------------------------|-------------------------|------------------------|
| Steel moulds | 60 – 70 m ² | 80 – 100 m ² | 60 – 70 m ² |
| Concrete mould smoothed | 5 – 15 m ² | 10 – 20 m ² | 5 – 15 m ² |
| Planed wood | 25 – 35 m ² | 30 – 40 m ² | 25 – 35 m ² |
| coated formwork panels | 50 – 60 m ² | 70 – 90 m ² | 50 – 60 m ² |
| rough wood | 20 – 30 m ² | 20 – 30 m ² | 15 – 25 m ² |

Special dispenser

Specially designed and manufactured for the application of concrete release agents. Special nozzle for particularly fine spray mist. More than double the yield compared to normal spraying devices.



WG: 92

| Description | Item No. |
|---|----------|
| Special dispenser made of stainless steel, contents 5 l, spraying hose 1.4 m, spraying tube 0.5 m | TSPRUEH |

Spare parts for special dispenser


WG: 94

| Description | Item No. |
|---|----------|
| Nozzle with screw fitting for type 506 | TSP02 |
| Spraying tube including nozzle with screw fitting | TSP03 |
| Injection hose with quick-closing valve, complete | TSP09 |
| Pump, complete | TSP16 |
| Seals, complete set | TSP17 |

Accessories for Trennfit drums


WG: 186

- The special pump allows clean work on the building site
- The collecting trough prevents soil and groundwater contamination and facilitates the decanting of the release agent into the spraying device

| | Description | Item No. |
|---|---|----------|
|  | Special pump suitable for 200 l drum | TPUMPE |
| | Collecting trough with drum holder, TÜV-tested, collecting volume > 200 l | TAWANNE |
| | Tap for Trennfit drum | TFHAEN |

Special filler incl. hardener

WG: 90

| | Item No. | Colour | Packaging unit Pcs | Weight kg/pce |
|---|----------|--------|-----------------------|------------------|
|  | TSPACHG | grey | 12 | 1.00 |

Application area:

- For repairing and filling damaged formwork boards and panels
- For smoothing concrete surfaces
- For grouting with crack injection
- As adhesive for connecting concrete, stones, slabs, etc.





Formwork accessories

The extensive range of tie bars, threaded steel accessories and formwork profiles provides many practical aids for the building site.

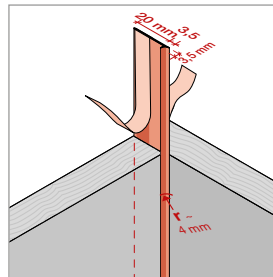
Plastic profiles

WG: 162

| | Description | Item No. | Dimensions a x b x c mm | Length m | Packaging unit Pcs | Pallet content m | Weight kg/pallet |
|--|---------------------------------|-----------|-------------------------|----------|--------------------|------------------|------------------|
|  | Dreika - triangular profile | KDR10 | 10 x 10 x 15 | 2.50 | 40 | 10000 | 620 |
| | | KDR15 | 15 x 15 x 21 | 2.50 | 40 | 10000 | 720 |
| | | KDR20 | 20 x 20 x 28 | 2.50 | 40 | 10000 | 1020 |
| | | KDR25 | 25 x 25 x 35 | 2.50 | 40 | 4900 | 706 |
|  | Trapezoidal profile strip 10/20 | KTP201010 | 20 x 10 x 10 | 2.50 | 40 | 2000 | 300 |

Round edge

- Achieves a slightly rounded edge
- Geometry complies with the Accident Prevention Regulations "Schools" GUV-VS1
- Additional sealing of the formwork joint due to the soft rubber
- Self-adhesive for precise and fast assembly



WG: 162

| Description | Item No. | Dimensions a x b x c mm | Length m | Packaging unit Pcs |
|--|-------------|-------------------------|----------|--------------------|
| Exposed concrete corner strip, self-adhesive for slightly rounded edges (r = 4 mm) | KSBLEISTESK | 20 x 3,5 x 3,5 | 20.00 | 6 |



Accessories for threaded steel

WG: 102

| | Description | Item No. | applicable load capacity kN | Packaging unit | Weight kg/pce |
|----------------------------|---|----------------------|--------------------------------|----------------|------------------|
| | | | | Pcs | |
| Spacers |  | GEWWSB15 | - | - | - |
| |  | GEWSKM30 GEWSKM50 | 50 90 | 50 50 | 0.130 0.220 |
| Formwork technologies |  | GEWVMUF | 90 | 50 | 0.460 |
| |  | MWSG22 | 90 | 50 | 0.590 |
| Reinforcement technologies |  | MKUW22 | - | 250 | 0.010 |
| |  | GEWSKO15 | 90 | 50 | 0.450 |
| Sealing technologies |  | FBVKSKK | - | 100 | 0.190 |
| |  | GEWWANK | 90 | - | 0.850 |
| Building acoustics |  | GEWSANK | 90 | - | 1.960 |
| |  | GEWFANK | - | 50 | 0.360 |
| |  | GEWFIXA | - | 50 | 0.450 |
| |  | GEWSCHL | - | - | 1.120 |
| |  | GEWASH | 16 with C20/25 | 100 | 0.060 |

Accessories for threaded steel

WG: 102

| | Description | Item No. | applicable load capacity kN | Packaging unit | Weight |
|---|---|-----------|--------------------------------|----------------|--------|
| | | | | Pcs | kg/pce |
|  | Formwork sleeve D-15, grey (glass-fibre reinforced), incl. nail plug for tie bar Ø 15 mm, concrete casting depth 105 mm | GEWASHVB | 23 with C20/25 | 100 | 0.040 |
|  | Sealing stopper for formwork sleeve to fit grey formwork sleeve GEWASHVB | GEWASHVST | - | 100 | 0.018 |



MAX FRANK

BUILDING
COMMON GROUND

Reinforcement technologies



Reinforcement technologies

Reliable connection of individual components is often a challenge in reinforced concrete construction. MAX FRANK offers a comprehensive assortment of reinforcement technology products, suitable for different areas of the building, with various applications.



Egcoflex® thermal break balcony connector

94



Egcoflex® FST steel thermal break connector

101



Egcodorn® shear force dowel

104



Stabox® continuity strip

111



MAX FRANK Coupler threaded connection

117

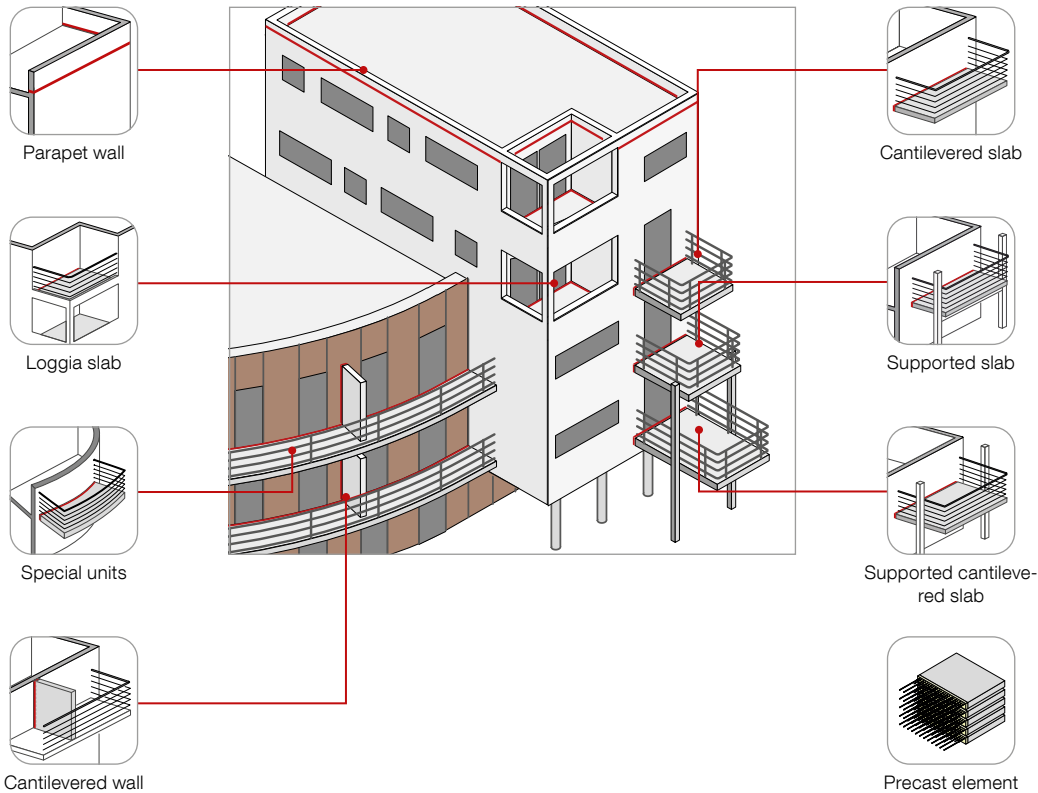


Egcobox® thermal break balcony connector

Building users are demanding ever more in terms of savings on heating costs, a healthy room climate and the associated prevention of condensation and mould formation. Therefore, when planning, attention must be paid to minimizing thermal bridges in the area of the building shell. Thermal bridges can be reduced with the heat-insulating Egcobox® cantilever connector. Egcobox® structural connection units thermally isolate an exterior component and an interior component from each other. The structural function of Egcobox® is provided by a bar framework, made from reinforcing steel, which passes through the thermal insulation and thus connects the component to the building.

★ Advantages

- ETA-approved system, same types can be used EU-wide
- Simple installation due to close-fitting compression units
- All units can be individually adapted to geometric specifications
- Support for your detailed planning with CAD details, BIM files and tender texts
- Fast and simple design with the free Egcobox® design software



Select the Egcobox® according to your requirements

- Insulation material (standard: Combi-Element, polystyrene, rock wool, phenolic foam)
- Insulating material thickness 80 mm and 120 mm, other dimensions on request
- Unit length
- Concrete cover
- Reinforcement layout
- Fire protection
- The unit shape can be adapted to the building or the component being connected, e.g. round units for concave or convex outer walls or diagonal elements for inclined balconies.

European Technical Assessment

The Egcobox® thermal break balcony connector has a CE mark according to European Technical Assessment, ETA-19/0046.



Type designation

Example: **MM70-VS-C45-h200-REI120-SW**

| Unit type | Insulating material thickness | Load stage | Unit shape | Variant (bending shape) | Shear force reinforcement | Concrete cover | Unit height | Fire resistance rating | Insulating material |
|-----------|-------------------------------|------------|---|----------------------------|---------------------------|---------------------|---------------------|------------------------|---------------------|
| M | M (80 mm) | 10 | – | – | VS | C30 | h160 | – | PS |
| M± | L (100 mm) | 20 | Standard length | straight connection | V1 | C35 | h170 | REI120 | Polystyrene |
| V | XL (120 mm) | 25 | | | K | V2 | C40 | | h175 |
| V± | | 30 | Short unit | HVS | C45 | h180 | SW | | Rock wool |
| A | | 40 | Z | BH | | h190 | 0,037 W/mK | | |
| F | | 50 | without constraint | BHS | VS± | h200 | PF | | |
| O | | 60 | CO | WOS | V1± | h210 | Phenolic foam | | |
| S | | 65 | Corner unit | WU | V2± | h220 | 0,021 W/mK | | |
| W | | 70 | FO / F | WUS | V3± | h225 | PS-C1 ¹⁾ | | |
| | | 75 | in two parts for installation in semi-prefabricated slabs | | V4± | h230 | Polystyrene | | |
| | | 80 | | V6± | h240 | 0,031 W/mK | | | |
| | | 110 | | V7± | h250 | PF-C1 ¹⁾ | | | |
| | | 120 | | V8± | h280 | Phenolic foam | | | |
| | | 130 | | | h300 | 0,021 W/mK | | | |
| | | 150 | | | | | | | |

Other dimensions and insulating materials on request.

¹⁾ each with rock wool fire protection strips

Egcobox® thermal break balcony connector

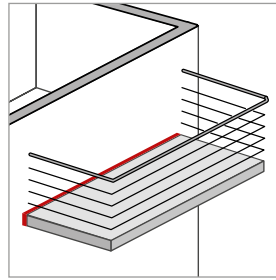
For further article and price information on the Egcobox® thermal break balcony connector, please refer to the MAX FRANK online catalogue.



Egcobox® type MM

Egcobox® type MXL

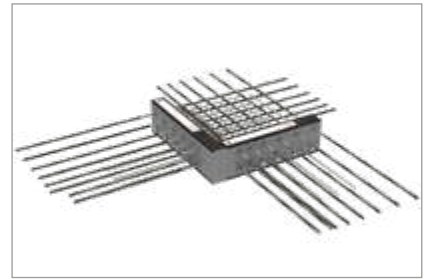
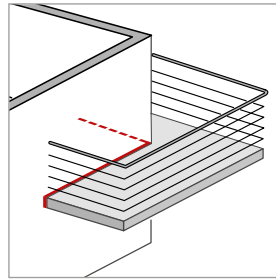
- For cantilever slabs for the transmission of moments and shear forces
- Joint width: 80 mm
- Joint width: 120 mm



Egcobox® type MM-CO

Egcobox® type MXL-CO

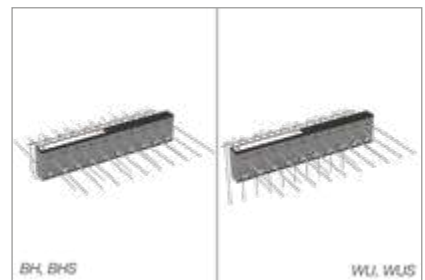
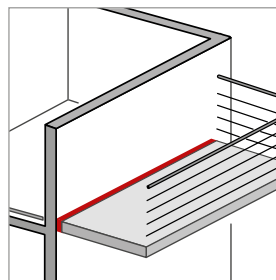
- For cantilever slabs for the transmission of moments and shear forces in the corner area
- Possible as a complete solution or separate sub-element
- For the complete connection of a corner, a 1st layer (e.g. 35 mm) + 2nd layer (e.g. 50 mm) is always required (equivalent to $\Delta 15$ mm)
- The sub-elements are also available separately
- Joint width: 80 mm
- Joint width: 120 mm



Egcobox® type MM-BH /-WU /-BHS /-WUS

Egcobox® type MXL-BH /-WU /-BHS /-WUS

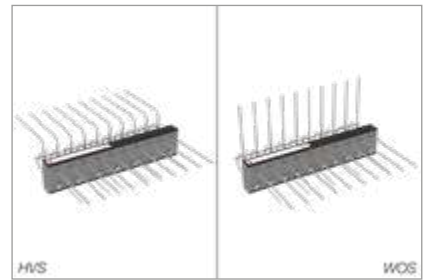
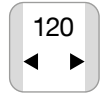
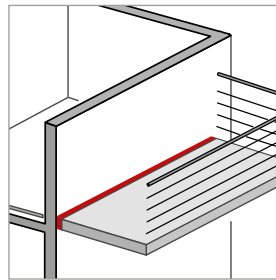
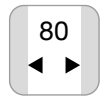
- For cantilever slabs with height offset or wall connection for the transmission of moments and shear forces
- Version (Var1) BH /-WU with wall width ≥ 220 mm
- Version (Var1) BHS /-WUS with wall width 175 to 215 mm
- Joint width: 80 mm
- Joint width: 120 mm



Egco[®] type MM-HVS /-WOS

Egco[®] type MXL-HVS /-WOS

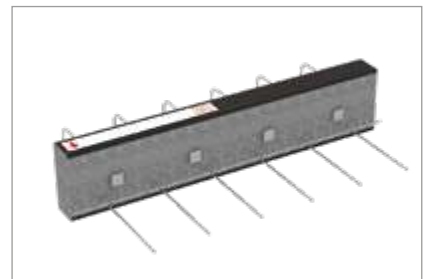
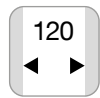
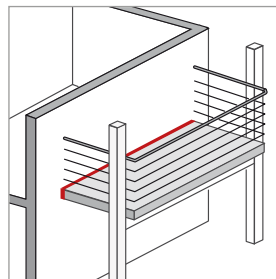
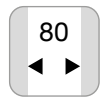
- For cantilever slabs with height offset or wall connection for the transmission of moments and shear forces
- Version (Var2) HVS /-WOS with wall width from 175 mm
- Joint width: 80 mm
- Joint width: 120 mm



Egco[®] type VM

Egco[®] type VXL

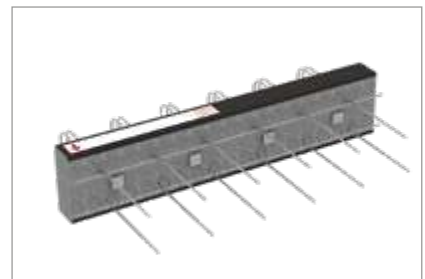
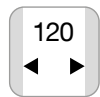
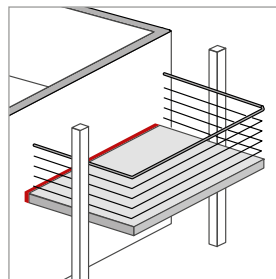
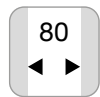
- For supported slabs for the transmission of shear forces
- Joint width: 80 mm
- Joint width: 120 mm



Egco[®] type VM±

Egco[®] type VXL±

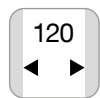
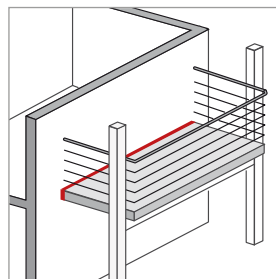
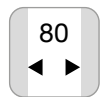
- For supported slabs for the transmission of positive and negative shear forces
- Joint width: 80 mm
- Joint width: 120 mm



Egco[®] type VM-K

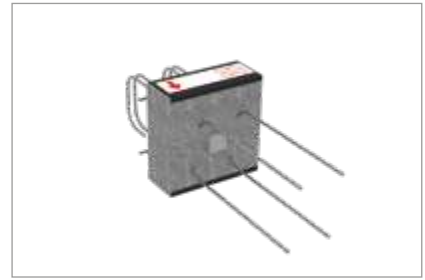
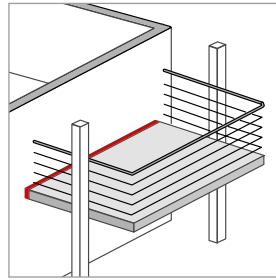
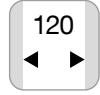
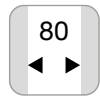
Egco[®] type VXL-K

- For supported slabs for the transmission of shear forces
- Joint width: 80 mm
- Joint width: 120 mm



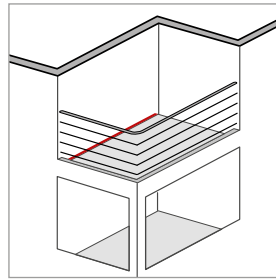
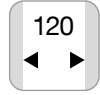
Egcobox® type VM-K±
Egcobox® type VXL-K±

- For supported slabs for the transmission of positive and negative shear forces
- Joint width: 80 mm
- Joint width: 120 mm



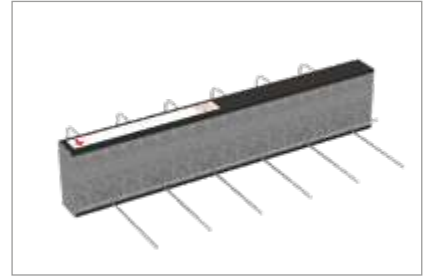
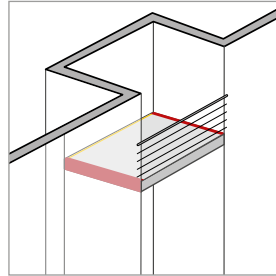
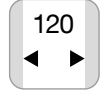
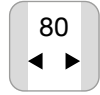
Egcobox® type MM±
Egcobox® type MXL±

- For cantilever slabs for the transmission of positive and negative moments and shear forces
- Joint width: 80 mm
- Joint width: 120 mm



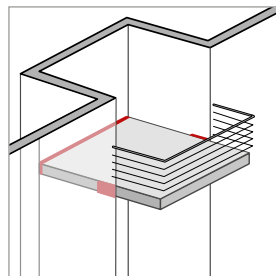
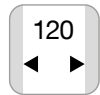
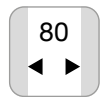
Egcobox® type VM Z
Egcobox® type VXL Z

- For force-free connection of laggias for the transmission of shear forces
- Joint width: 80 mm
- Joint width: 120 mm



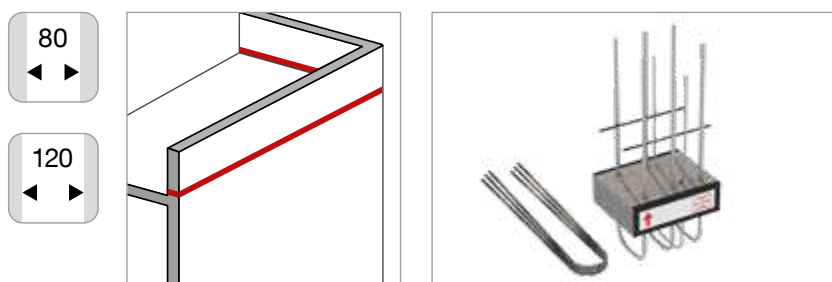
Egcobox® type VM Z-K
Egcobox® type VXL Z-K

- For force-free connection of laggias for the transmission of shear forces
- Joint width: 80 mm
- Joint width: 120 mm



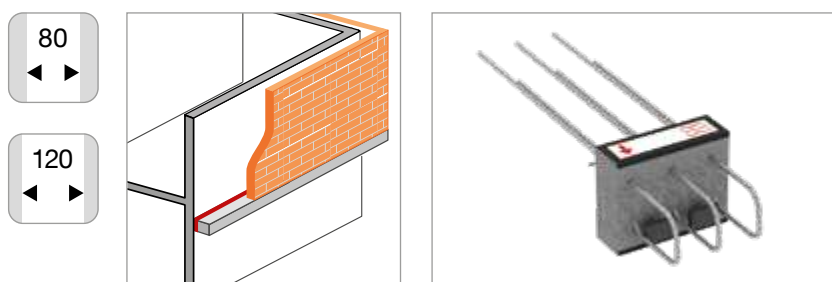
Egcobox® type AM
Egcobox® type AXL

- For parapets
- Joint width: 80 mm
- Joint width: 120 mm



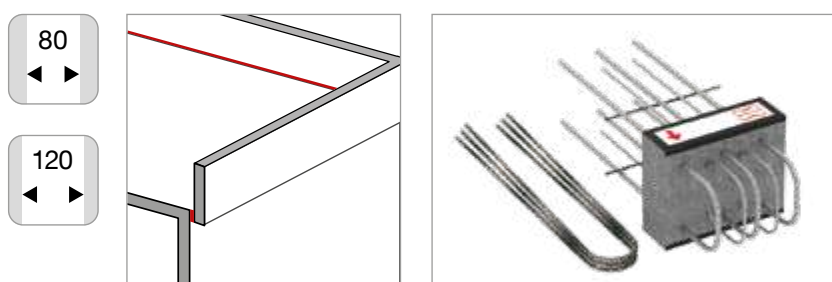
Egcobox® type OM
Egcobox® type OXL

- For slab corbels as support for facing masonry
- Joint width: 80 mm
- Joint width: 120 mm



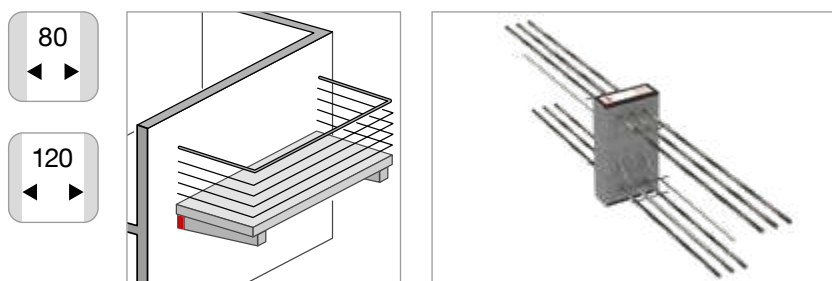
Egcobox® type FM
Egcobox® type FXL

- For balustrades
- Joint width: 80 mm
- Joint width: 120 mm



Egcobox® type SM
Egcobox® type SXL

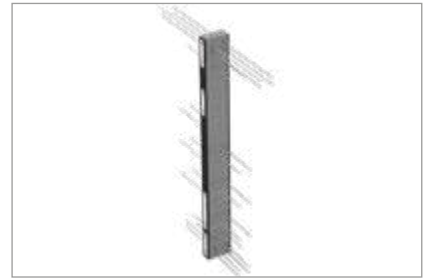
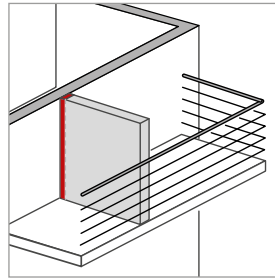
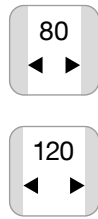
- For cantilevered beams
- Joint width: 80 mm
- Joint width: 120 mm



Egcobox® type WM

Egcobox® type WXL

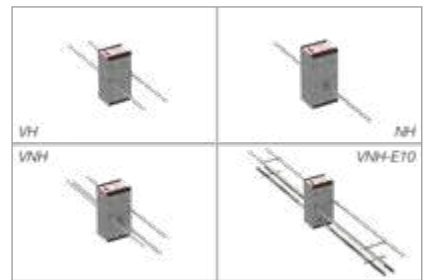
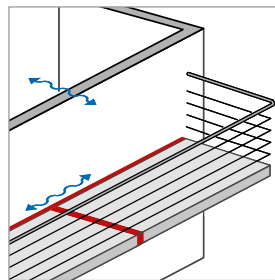
- For cantilevered (floor-to-ceiling) wall panels
- Joint width: 80 mm
- Joint width: 120 mm



Egcobox® type MM short units (modules)

Egcobox® type MXL short units (modules)

- For the transmission of normal forces and horizontal shear forces
- Joint width: 80 mm
- Joint width: 120 mm



Egcobox® insulation strips

As a supplementary insulating element for various areas of application.



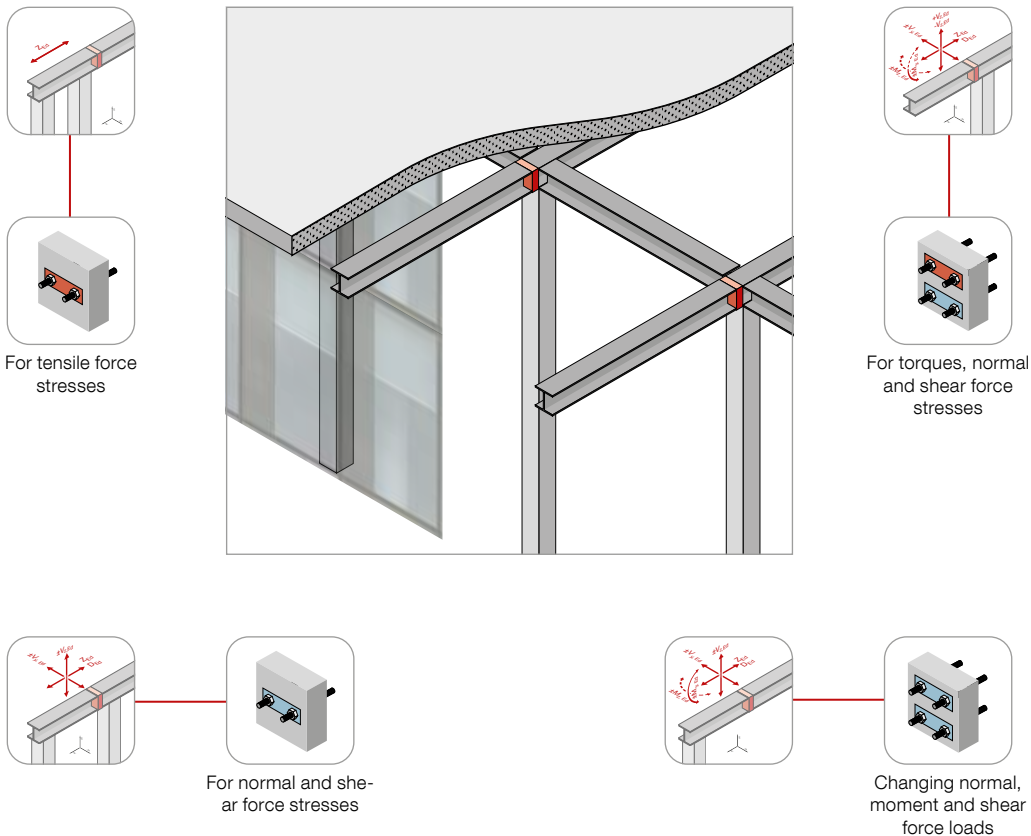


Egcobox® FST steel thermal break connector

In the case of steel structures, in both industrial and residential construction, special attention must be paid to detail planning when a component penetrates the outer shell of a building. With conventional construction methods, thermal bridges are created at the transition from the building to the projecting component. This leads to increased energy consumption and runs the risk of condensation and mould formation. Egcobox® FST steel connection is an optimal solution for the thermal separation of steel structures and thus reduces thermal bridges, without limiting the structural effectiveness of the support system. Insulation for the connection unit is available in polystyrene or rock wool, on request.

★ Advantages

- Reduces thermal bridges - thereby avoiding condensation and mould formation
- High structural functionality and corrosion resistance
- Project-specific and dimensionally accurate production of the Egcobox® FST according to the desired installation geometry
- Versatile application opportunities in new builds or in modernization projects



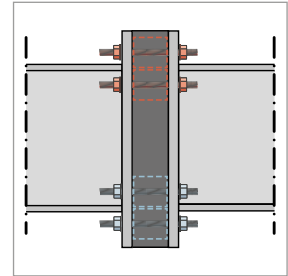
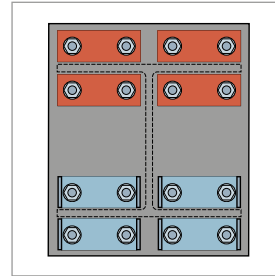
Egcobox® FST composition

Egcobox® FST is manufactured on a project-by-project basis and precisely on the basis of the existing installation geometry as well as the static requirements. With Egcobox® FST, distinction is made between components for tensile stresses and those for normal or shear force stresses. A component consists of threaded rods with a diameter of 16 mm or 22 mm, arranged in pairs. The on-site modification or assembly of Egcobox® FST is unnecessary due to the precisely dimensioned and tailored manufacturing.



Type designation

- FZST
- FVST



Example: FST 16 – 4 / 4

| Type | Load stage (thread diameter) mm | Number of FZST components for tensile force stress | Number of FVST components for normal and shear force stresses | Insulating material |
|------------|------------------------------------|--|---|---------------------|
| FST | 16 | 0 | 0 | – |
| | 22 | 1 | 1 | Polystyrene |
| | | 2 | 2 | SW |
| | | 4 | 4 | Rock wool |

The type designation does not indicate the dimensions of the Egcobox® FST. The Egcobox® FST is factory-adjusted to the existing installation geometry. The data required for the manufacture can easily be created with the help of the design forms in the technical brochure.

CE marking

The Egcobox® FST steel thermal break connector has a CE marking, declaration of performance according to Annex III of Regulation (EU) No. 305/2011.



Egcbobox® FST steel thermal break connector

WG: 263

| | Egcbobox® type | Joint width mm | Unit height mm | Unit length mm |
|--|----------------|-------------------|-------------------|-------------------|
| | FST16-1/0 | 80 | ≥ 60 | ≥ 180 |
| | FST22-1/0 | 80 | ≥ 60 | ≥ 180 |
| | FST16-0/1 | 80 | ≥ 80 | ≥ 180 |
| | FST22-0/1 | 80 | ≥ 80 | ≥ 180 |
| | FST16-1/1 | 80 | ≥ 125 | ≥ 180 |
| | FST22-1/1 | 80 | ≥ 125 | ≥ 180 |
| | FST16-2/2 | 80 | ≥ 230 | ≥ 180 |
| | FST22-2/2 | 80 | ≥ 230 | ≥ 180 |
| | FST16-4/4 | 80 | ≥ 230 | ≥ 340 |
| | FST22-4/4 | 80 | ≥ 230 | ≥ 340 |
| | FST16-0/2 | 80 | ≥ 145 | ≥ 180 |
| | FST22-0/2 | 80 | ≥ 145 | ≥ 180 |
| | FST16-0/4 | 80 | ≥ 275 | ≥ 180 |
| | FST22-0/4 | 80 | ≥ 275 | ≥ 180 |
| | FST16-0/8 | 80 | ≥ 275 | ≥ 340 |
| | FST22-0/8 | 80 | ≥ 275 | ≥ 340 |

The precise dimensions and distances between the individual components are to be specified when ordering.
 Design templates can be taken from the technical brochure.
 The Egcbobox® FST steel connection is made of materials of corrosion resistance class III.
 The Egcbobox® FST steel connection is made of polystyrene (standard).
 The option to manufacture from rock wool depends on the existing geometry and must be checked by our technical consultants in the individual case.

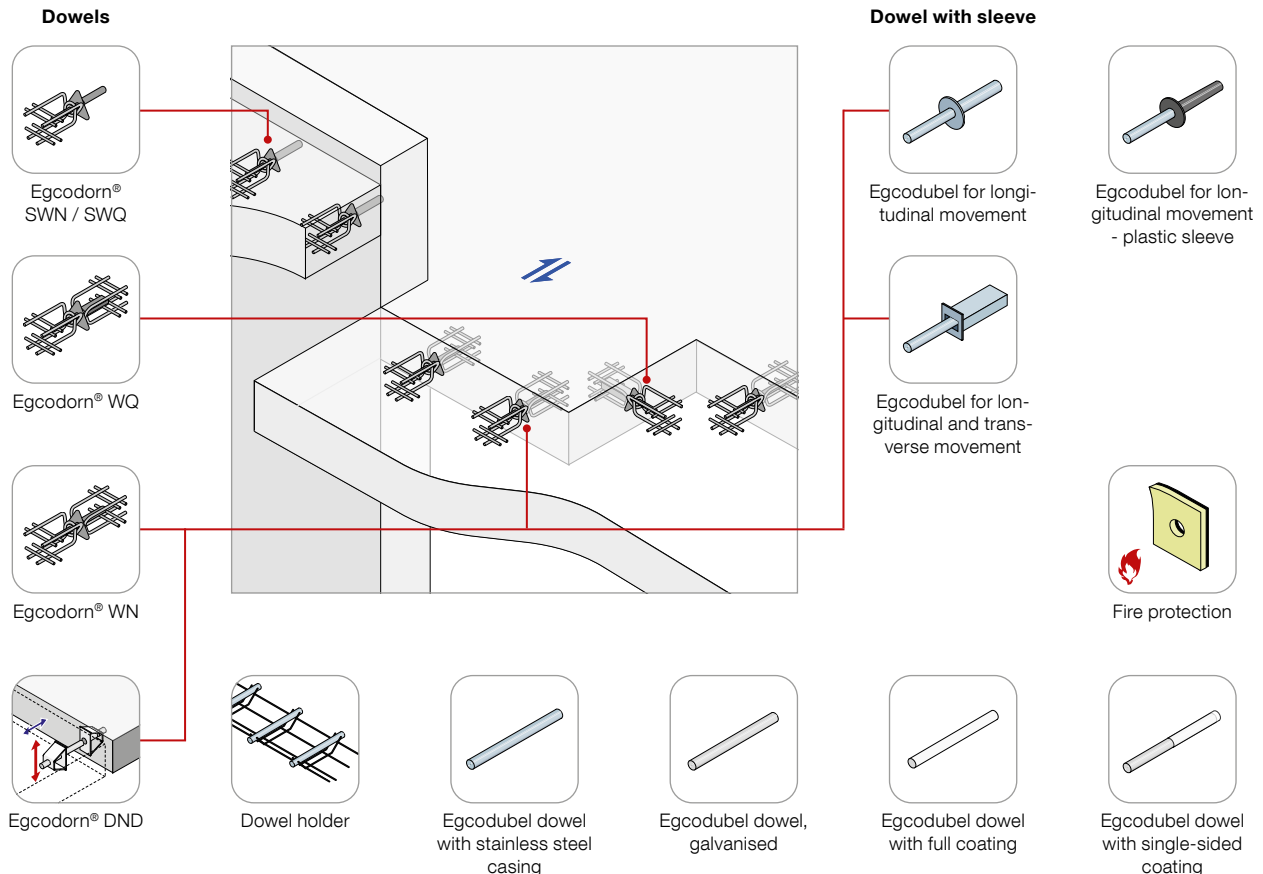


Egcodorn® shear force dowel

Expansion joints are provided in concrete structures to decouple components and avoid stress cracks. Shear force dowels or shear dowels are used for the transmission of shear forces which occur in such joints. There are three basic types, which are designed for different applications. For high static loads, the Egcodorn® shear force dowel system offers security in planning and execution. Egcodorn® DND is the optimal solution if the dynamic loads predominate, as with joints in road surfaces. Egcodubel is the most economical product for structural connections.

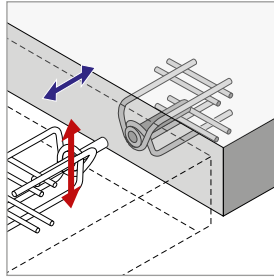
★ Advantages

- Simplification of formwork and reinforcement work on expansion joints
- Permanent corrosion protection through high quality materials
- Rational construction process through product combinations of preassembled Stremaform® formwork elements with the Egcodorn® shear force dowel system
- Free Egcodorn design software is available for download



Egcodorn® WN

- Shear force dowels for very high static loads with DIBt approval Z-15.7-301
- The normally movable Egcodorn® WN allows only displacements in the direction of the longitudinal axis of the dowel. The dowels must be carefully arranged in the direction of displacement and aligned in parallel with each other



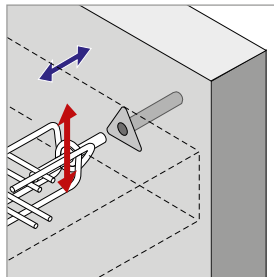
WG: 119

| Item No. | Type | Weight kg/pce |
|---------------|-------|------------------|
| EGCODORNWN040 | WN40 | 2.70 |
| EGCODORNWN050 | WN50 | 4.30 |
| EGCODORNWN070 | WN70 | 6.00 |
| EGCODORNWN095 | WN95 | 8.80 |
| EGCODORNWN100 | WN100 | 9.20 |
| EGCODORNWN120 | WN120 | 15.50 |
| EGCODORNWN150 | WN150 | 16.20 |
| EGCODORNWN210 | WN210 | 28.80 |
| EGCODORNWN300 | WN300 | 30.40 |
| EGCODORNWN350 | WN350 | 34.00 |
| EGCODORNWN400 | N400 | 60.00 |

Articles are suitable for joint width 0-60 mm; special types up to 80 mm joint width on request.

Egcodorn® SWN

- Shear force dowels for very high static loads with DIBt approval Z-15.7-301 and anchor body on one side, for optimal use in walls
- The normally movable Egcodorn® SWN allows only displacement in the direction of the longitudinal axis of the dowel.



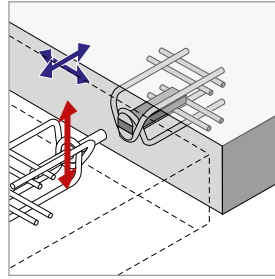
WG: 119

| Item No. | Type | Weight kg/pce |
|----------------|--------|------------------|
| EGCODORNSWN040 | SWN040 | 1.826 |
| EGCODORNSWN050 | SWN050 | 2.746 |
| EGCODORNSWN070 | SWN070 | 3.816 |
| EGCODORNSWN095 | SWN095 | 5.501 |
| EGCODORNSWN100 | SWN100 | 5.892 |
| EGCODORNSWN120 | SWN120 | 9.355 |
| EGCODORNSWN150 | SWN150 | 10.097 |
| EGCODORNSWN210 | SWN210 | 16.799 |
| EGCODORNSWN300 | SWN300 | 21.944 |
| EGCODORNSWN350 | SWN350 | 21.944 |

Articles are suitable for joint width 0-60 mm; special types up to 80 mm joint width on request.

Egcodorn® WQ

- Shear force dowels for very high static loads with DIBt approval Z-15.7-301
- If displacements occur both along and laterally to the dowel axis, the laterally displaceable Egcodorn® WQ must be used. For curved component edges or large joint lengths, the Egcodorn® WQ should be used



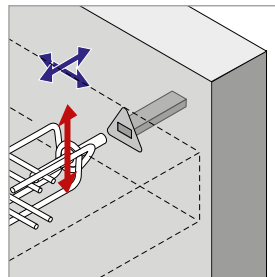
WG: 119

| Item No. | Type | Weight kg/pce |
|---------------|-------|------------------|
| EGCODORNWQ040 | WQ40 | 3.10 |
| EGCODORNWQ050 | WQ50 | 4.60 |
| EGCODORNWQ070 | WQ70 | 6.50 |
| EGCODORNWQ095 | WQ95 | 9.30 |
| EGCODORNWQ100 | WQ100 | 9.70 |
| EGCODORNWQ120 | WQ120 | 16.20 |
| EGCODORNWQ150 | WQ150 | 17.30 |
| EGCODORNWQ210 | WQ210 | 30.00 |
| EGCODORNWQ300 | WQ300 | 32.00 |
| EGCODORNWQ350 | WQ350 | 35.80 |
| EGCODORNQ400 | Q400 | 61.00 |

Articles are suitable for joint width 0-60 mm; special types up to 80 mm joint width on request.

Egcodorn® SWQ

- Shear force dowels for very high static loads with DIBt approval Z-15.7-301 and anchor body on one side, for optimal use in walls
- If displacements occur both along and laterally to the dowel axis, the laterally displaceable Egcodorn® WQ must be used. For curved component edges or large joint lengths, the Egcodorn® WQ should be used



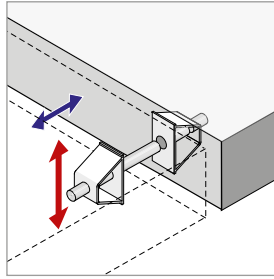
WG: 119

| Item No. | Type | Weight kg/pce |
|----------------|--------|------------------|
| EGCODORNSWQ040 | SWQ040 | 2.030 |
| EGCODORNSWQ050 | SWQ050 | 2.955 |
| EGCODORNSWQ070 | SWQ070 | 4.104 |
| EGCODORNSWQ095 | SWQ095 | 5.830 |
| EGCODORNSWQ100 | SWQ100 | 6.273 |
| EGCODORNSWQ120 | SWQ120 | 9.730 |
| EGCODORNSWQ150 | SWQ150 | 10.772 |
| EGCODORNSWQ210 | SWQ210 | 17.627 |
| EGCODORNSWQ300 | SWQ300 | 23.020 |
| EGCODORNSWQ350 | SWQ350 | 23.020 |

Articles are suitable for joint width 0-60 mm; special types up to 80 mm joint width on request.

Egcodorn® DND

- Transverse force dowels for dynamic loads with DIBt approval Z-15.7-266
- For dynamically stressed expansion joints, the Egcodorn® DND is currently the only approved shear force dowel connection. The main area of application is vehicle-accessible joints, for example in mass-spring systems or multi-storey car parks

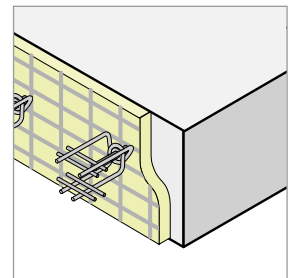


WG: 117

| Item No. | Type | Weight kg/pce |
|----------|--------|------------------|
| DND040 | DND40 | 2.55 |
| DND050 | DND50 | 3.13 |
| DND070 | DND70 | 4.61 |
| DND095 | DND95 | 6.67 |
| DND100 | DND100 | 7.89 |
| DND120 | DND120 | 9.36 |
| DND150 | DND150 | 12.23 |
| DND210 | DND210 | 19.59 |
| DND300 | DND300 | 34.36 |
| DND350 | DND350 | 38.19 |

Stremaform® jointing formwork

In order to ensure a fast and efficient construction process, Egcodorn dowels can be integrated into pre-fabricated Stremaform® expansion joint formwork units. The assembly is then carried out section by section using a crane, which reduces physical strain on-site. For more information about Stremaform®, see page 51.



Fire protection collar, fire resistance rating F120/R120

WG: 119

| | Item No. | Joint width mm | For Egcodorn type | |
|--|-----------------|-------------------|---|-----------------------------------|
| | | | For Egcodorn type | For Egcodubel with diameter mm |
| | EDBRAND20040 | 20 | WN040, WQ040 | 20, 22 |
| | EDBRAND20050 | 20 | WN050, WQ050 | 25 |
| | EDBRAND20070 | 20 | WN070, WQ070 | 27 |
| | EDBRAND20095 | 20 | WN095, WQ095 | 30 |
| | EDBRAND20120 | 20 | WN120, WQ120 | - |
| | EDBRAND20150 | 20 | WN150, WQ150 | 37 |
| | EDBRAND20210 | 20 | WN210, WQ210 | - |
| | EDBRAND20300350 | 20 | WN300, WQ300, WN350, WQ350, N400, Q400 | - |

Further dimensions available on request.

Egcodubel Standard - S355

WG: 120

 Yield strength core material $f_{yk} = 355 \text{ N/mm}^2$.

| | Item No. | Corrosion protection | Type of sleeve | Diameter | Sleeve length | Length |
|------------|--------------|----------------------|--------------------------------------|----------|---------------|--------|
| | | | | mm | mm | mm |
| | EDM20S355 | Stainless steel | - | 20 | - | 315 |
| | EDM22S355 | Stainless steel | - | 22 | - | 340 |
| | EDM27S355 | Stainless steel | - | 27 | - | 405 |
| | EDM30S355 | Stainless steel | - | 30 | - | 445 |
| | EDV20S355 | Galvanised | - | 20 | - | 320 |
| | EDV22S355 | Galvanised | - | 22 | - | 350 |
| | EDV25S355 | Galvanised | - | 25 | - | 385 |
| EDV30S355 | Galvanised | - | 30 | - | 450 | |
| | EDM20S355H | Stainless steel | Plastic | 20 | 200 | 315 |
| | EDM22S355H | Stainless steel | Plastic | 22 | 210 | 340 |
| | EDM27S355H | Stainless steel | Plastic | 27 | 240 | 405 |
| | EDM30S355H | Stainless steel | Plastic | 30 | 260 | 445 |
| | EDV20S355H | Galvanised | Plastic | 20 | 200 | 320 |
| | EDV22S355H | Galvanised | Plastic | 22 | 210 | 350 |
| | EDV25S355H | Galvanised | Plastic | 25 | 230 | 385 |
| EDV30S355H | Galvanised | Plastic | 30 | 260 | 450 | |
| | EDM20S355HI | Stainless steel | Stainless steel | 20 | 200 | 315 |
| | EDM22S355HI | Stainless steel | Stainless steel | 22 | 210 | 340 |
| | EDM27S355HI | Stainless steel | Stainless steel | 27 | 240 | 405 |
| | EDM30S355HI | Stainless steel | Stainless steel | 30 | 260 | 445 |
| | EDM20S355HQI | Stainless steel | Stainless steel, transverse movement | 20 | 200 | 315 |
| | EDM22S355HQI | Stainless steel | Stainless steel, transverse movement | 22 | 215 | 340 |
| | EDM27S355HQI | Stainless steel | Stainless steel, transverse movement | 27 | 245 | 445 |
| | EDM30S355HQI | Stainless steel | Stainless steel, transverse movement | 30 | 265 | 445 |

All anchor sleeves are longitudinally adjustable, the HQI types are longitudinally and transversely adjustable.

The diameter indication for Egcodubel with stainless steel casing refers to the external diameter. The diameter of the respective steel core is the external diameter minus 2 mm.

Spacers

Formwork technologies

Reinforcement technologies

Sealing technologies

Building acoustics

Egcodubel high-strength - HF

WG: 120

Yield strength core material $f_{yk} = 750 \text{ N/mm}^2$.

| | Item No. | Corrosion protection | Type of sleeve | Diameter | Sleeve length | Length |
|-----------|------------|----------------------|--------------------------------------|-----------------|---------------|--------|
| | | | | mm | mm | mm |
| | EDM20HF | Stainless steel | - | 20 | - | 315 |
| | EDM22HF | Stainless steel | - | 22 | - | 340 |
| | EDM27HF | Stainless steel | - | 27 | - | 405 |
| | EDM30HF | Stainless steel | - | 30 | - | 445 |
| | EDM37HF | Stainless steel | - | 37 | - | 535 |
| | EDV20HF | Galvanised | - | 20 | - | 320 |
| | EDV22HF | Galvanised | - | 22 | - | 350 |
| | EDV25HF | Galvanised | - | 25 | - | 385 |
| | EDV30HF | Galvanised | - | 30 | - | 450 |
| | EDM20HFH | Stainless steel | Plastic | 20 | 200 | 315 |
| | EDM22HFH | Stainless steel | Plastic | 22 | 210 | 340 |
| | EDM27HFH | Stainless steel | Plastic | 27 | 240 | 405 |
| | EDM30HFH | Stainless steel | Plastic | 30 | 260 | 445 |
| | EDV20HFH | Galvanised | Plastic | 20 | 200 | 320 |
| | EDV22HFH | Galvanised | Plastic | 22 | 210 | 350 |
| | EDV25HFH | Galvanised | Plastic | 25 | 230 | 385 |
| | EDV30HFH | Galvanised | Plastic | 30 | 260 | 450 |
| | | EDM20HFHI | Stainless steel | Stainless steel | 20 | 200 |
| EDM22HFHI | | Stainless steel | Stainless steel | 22 | 210 | 340 |
| EDM27HFHI | | Stainless steel | Stainless steel | 27 | 240 | 405 |
| EDM30HFHI | | Stainless steel | Stainless steel | 30 | 260 | 445 |
| EDM37HFHI | | Stainless steel | Stainless steel | 37 | 305 | 535 |
| | | | | | | |
| | EDM20HFHQI | Stainless steel | Stainless steel, transverse movement | 20 | 200 | 315 |
| | EDM22HFHQI | Stainless steel | Stainless steel, transverse movement | 22 | 215 | 340 |
| | EDM27HFHQI | Stainless steel | Stainless steel, transverse movement | 27 | 245 | 405 |
| | EDM30HFHQI | Stainless steel | Stainless steel, transverse movement | 30 | 265 | 445 |
| | EDM37HFHQI | Stainless steel | Stainless steel, transverse movement | 37 | 310 | 535 |

All anchor sleeves are longitudinally adjustable, the HQI types are longitudinally and transversely adjustable. The diameter indication for Egcodubel with stainless steel casing refers to the external diameter. The diameter of the respective steel core is the external diameter minus 2 mm.

Egcodubel for roadway slabs


WG: 120

| | Description | Item No. | Corrosion protection | Type of sleeve | Diameter | Length |
|--|---|------------|----------------------|------------------|----------|--------|
| | | | | | mm | mm |
| | for roadway slabs | EDV25S235 | Galvanised | - | 25 | 500 |
| | | EDV25S235B | Plastic coating | - | 25 | 500 |
| | for roadway slabs, with coating on one side | EDV25S235E | Galvanised | Expansion sleeve | 25 | 500 |

Article EDV25S235B with CE mark

Dowel holder for roadway slabs

WG: 120

| | Item No. | Dowel spacing mm | Length mm | Weight kg/m |
|---|------------|---------------------|--------------|----------------|
|  | TDFAHAL250 | 250 | 2250 | 0.82 |

Further dimensions available on request.
Please specify the desired altitude.
Delivery is carried out with separate freight.

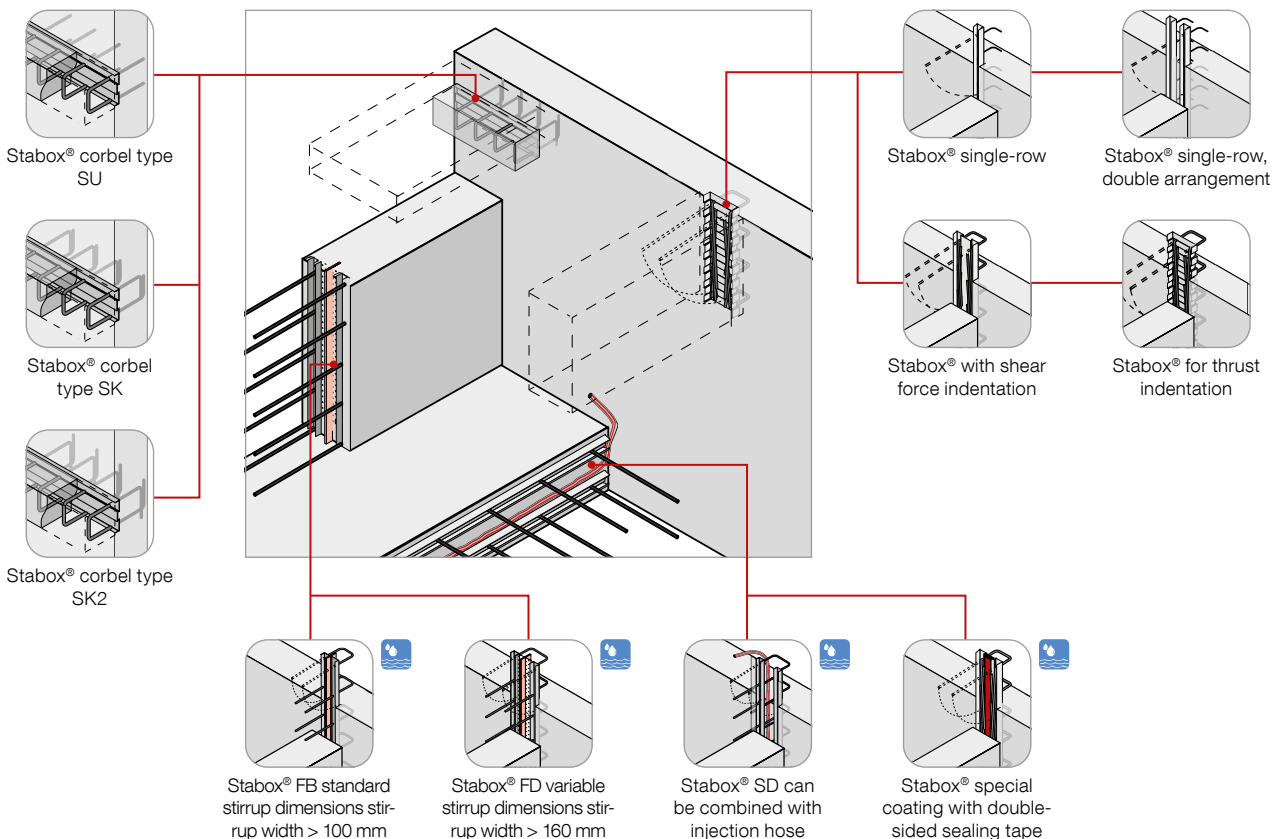


Stabox® continuity strip

Stabox® reinforcement connections enable the force-locked connection of reinforced concrete components, which are created and concreted in several construction sections as a result of rational formwork systems. Based on the coordinated geometry according to Eurocode and National Annex, Stabox® standard and special connections meet the maximum requirement of an indented joint design. Continuity Strips are available with rebar diameters of 8, 10 and 12 mm. The material input depends on the respective national requirements.

★ Advantages

- Simplification of formwork on concrete working joints
- No need to pierce the formwork
- Individual Stabox® special versions can be produced at short notice



Stabox® single-row continuity strip

The single-row design of the Stabox® continuity strip opens up many possible applications. Very narrow cross-sections can be connected in a force-locked manner. The low weight of the single-row connections allows easy installation of the access boxes on the formwork. Through the systematic arrangement of two Stabox® connections, double-section reinforcement layers can also be installed, which additionally results in a high flexibility of the laying distances (e.g. slab height or wall thickness) and high shear forces can be transmitted. Stabox® single-row continuity strips are available in standard and special versions.



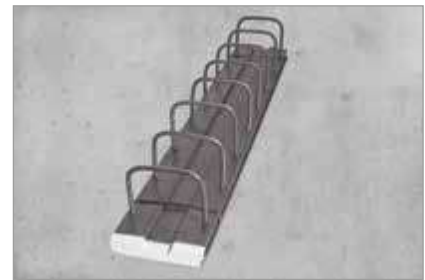
WG: 74

| | Item No. | Type | Steel diameter | Stirrup spacing | Length | Pallet content | Weight | Weight |
|--|------------|------|----------------|-----------------|--------|----------------|--------|-----------|
| | | | mm | mm | m | Pcs | kg/pce | kg/pallet |
| | STA05L0815 | 5 L | 8 | 150 | 1.25 | 150 | 2.78 | 437 |
| | STA05L0820 | 5 L | 8 | 200 | 1.25 | 150 | 2.36 | 375 |
| | STA05L1015 | 5 L | 10 | 150 | 1.25 | 150 | 3.77 | 585 |
| | STA05L1020 | 5 L | 10 | 200 | 1.25 | 150 | 3.10 | 485 |
| | STA07L1010 | 7 L | 10 | 100 | 1.25 | 120 | 5.26 | 652 |
| | STA07L1215 | 7 L | 12 | 150 | 1.25 | 150 | 5.62 | 862 |
| | STA07L1220 | 7 L | 12 | 200 | 1.25 | 150 | 4.52 | 698 |
| | STA09L1210 | 9 L | 12 | 100 | 1.25 | 120 | 8.07 | 988 |

Please refer to the table "Standard Dimensions" as well as the data for other geometrical conditions.

Stabox® S double-row continuity strip

Stabox® S continuity strip offers the highest joint category "indented joint" according to Eurocode 2 for the dimensioning of the shear force transmission. The shear force design resistance for all load cases (after type test, type static calculation and type test report) can be taken from the Stabox® brochure. Stabox® S connections are available in standard and special versions.



WG: 74

| | Item No. | Type | Steel diameter | Stirrup spacing | Length | Pallet content | Weight | Weight |
|--|------------|------|----------------|-----------------|--------|----------------|--------|-----------|
| | | | mm | mm | m | Pcs | kg/pce | kg/pallet |
| | STA09B0815 | 9 B | 8 | 150 | 1.25 | 120 | 4.44 | 552 |
| | STA09B1015 | 9 B | 10 | 150 | 1.25 | 120 | 5.88 | 725 |
| | STA12B0815 | 12 B | 8 | 150 | 1.25 | 120 | 5.12 | 634 |
| | STA12B1015 | 12 B | 10 | 150 | 1.25 | 120 | 7.18 | 882 |
| | STA12B1215 | 12 B | 12 | 150 | 1.25 | 80 | 10.89 | 891 |
| | STA15B0815 | 15 B | 8 | 150 | 1.25 | 120 | 5.16 | 639 |
| | STA15B1015 | 15 B | 10 | 150 | 1.25 | 120 | 7.70 | 944 |
| | STA15B1215 | 15 B | 12 | 150 | 1.25 | 80 | 11.55 | 944 |
| | STA15B1220 | 15 B | 12 | 200 | 1.25 | 80 | 9.05 | 744 |
| | STA19B0815 | 19 B | 8 | 150 | 1.25 | 80 | 5.34 | 447 |
| | STA19B1010 | 19 B | 10 | 100 | 1.25 | 60 | 10.82 | 669 |
| | STA19B1015 | 19 B | 10 | 150 | 1.25 | 80 | 7.89 | 651 |
| | STA19B1210 | 19 B | 12 | 100 | 1.25 | 60 | 17.48 | 1069 |
| | STA19B1215 | 19 B | 12 | 150 | 1.25 | 60 | 12.52 | 771 |
| | STA19B1220 | 19 B | 12 | 200 | 1.25 | 80 | 10.09 | 827 |
| | STA22B1015 | 22 B | 10 | 150 | 1.25 | 80 | 8.89 | 731 |
| | STA22B1210 | 22 B | 12 | 100 | 1.25 | 60 | 18.02 | 1101 |
| | STA22B1215 | 22 B | 12 | 150 | 1.25 | 60 | 12.95 | 797 |
| | STA25B1210 | 25 B | 12 | 100 | 1.25 | 60 | 18.72 | 1143 |
| | STA25B1215 | 25 B | 12 | 150 | 1.25 | 60 | 13.54 | 832 |

Please refer to the table "Standard Dimensions" as well as the data for other geometrical conditions. Standard short units and connections for precast plants on enquiry.

Standard dimensions

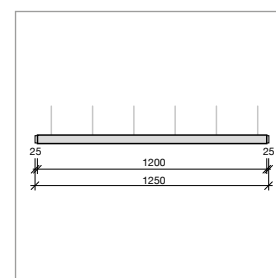
| Steel Ø mm | Possible hook/ stirrup shape | Possible hook/ stirrup spacing s mm | Number of stir- rups and hooks with standard unit length | Stirrup height h mm | Hook length v mm | Overlap length l ₀ mm | Unit length l m |
|---------------|---------------------------------|--|---|---------------------------|------------------------|--|-----------------------|
| 8 | L / B | 100 / 150 / 200 | 12 / 8 / 6 | 170 | 100 | 260 | 1,25 |
| 10 | L / B | 100 / 150 / 200 | 12 / 8 / 6 | 170 | 100 | 300 | 1,25 |
| 12 | L / B | 100 / 150 / 200 | 12 / 8 / 6 | 170 | 100 | 390 | 1,25 |

Technical notes on Stabox® continuity strips

- With the standard types of the Stabox® continuity strips, the stirrup dimensions such as stirrup height h and overlap length l₀ are manufactured in accordance with the Stabox® type static calculation and type test report.
- For production reasons, the overlap length of the steel diameter of 8 mm is produced with l₀ = 260 mm and thus deviates from the minimum value of the overlap length according to the Stabox® type test.
- The unit thickness “d” of the access boxes is between 30 and 50 mm depending on the steel diameter and spacing.
- Due to manufacturing and installation conditions, the stirrup height may vary by 10 to 20 mm.

Access box length

The length of the access box without foam polystyrene end caps is 1.20 m per unit. With foam polystyrene end caps at each end, they have an installation length of 1.25 m.

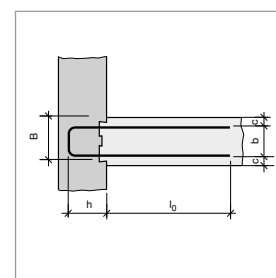


Access box width B

The selection of the access box widths B depends on the given component dimensions minus the required concrete cover c.

Example: wall thickness 2nd pour = 220 mm, concrete cover c = 25 mm, stirrup width w = 220 mm - 2 * 25 mm = 170 mm. Selected: Stabox® type 19 B (stirrup width w = 170 mm, see sketches in the table for Stabox® box and stirrup dimensions).

The concrete cover should not be less than required; a smaller box type should be chosen if necessary.



Rebending tool

WG: 74

Please make sure that only the appropriate rebending tool is used.

| Item No. | For steel diameters mm | Colour |
|----------|---------------------------|--------|
| STARBW08 | 8 | yellow |
| STARBW10 | 10 | green |
| STARBW12 | 12 | red |

Stabox® special versions, single row

WG: 80

| | | Item No. | Type |
|--|--|----------|------|
| | | STASW | SW |
| | | STASL | SL |
| | | STASG | SG |

 $v, v_1, v_2 \geq 100 \text{ mm}$.

Stabox® S special versions, double row

WG: 80

| | | Item No. | Type |
|--|--|----------|------|
| | | STAS2G | S2G |
| | | STASB | SB |
| | | STASD | SD |
| | | STASK | SK |
| | | STASK1 | SK1 |
| | | STASK2 | SK2 |
| | | STASU | SU |

 $v, v_1, v_2 \geq 100 \text{ mm}$.

 For corbel types, there may be differences in the dimension h_1 of 10 to 20 mm due to production and installation.

Spacers

Formwork technologies

Reinforcement technologies

Sealing technologies

Building acoustics

Stabox® T special versions

WG: 80

| | Item No. | Type |
|--|----------|------|
| | STATB | TB |
| | STATU | TU |
| | STATL | TL |

For corbel types, there may be differences in the dimension h_1 of 10 to 20 mm due to production and installation.

Stabox® T special connection for high shear forces

Stabox® T is the optimal supplement to the Stabox® S continuity strip for shear stress in the longitudinal direction of the joint. Due to the special, stable trapezoidal sheet metal of the access box, the highest requirement for an indented working joint according to EN 1992-1-1 and National Appendix is guaranteed.



Ordering code

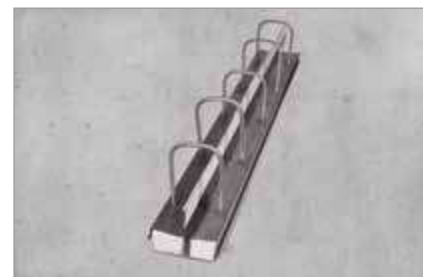
Example: **STAT12B0810**

| Product designation | Box width mm | Stirrup shape | Steel Ø mm | Stirrup spacing mm |
|---------------------|-----------------|---------------|---------------|-----------------------|
| STAT | 90 | B | 8 | 100 |
| | 120 | L | 10 | 150 |
| | 160 | U | 12 | 200 |
| | 190 | | | |
| | 220 | | | |

The box width 90 mm can only be combined with the stirrup shape L. Otherwise, all combinations are possible.

Stabox® FB continuity strip

The Stabox® FB double-row continuity strip offers an ideal solution for safe joint waterproofing according to the German guideline for watertight structures in addition to the production of a force-locked connection between two reinforced concrete components manufactured separately. The Stabox® FB continuity strip can be produced with a standard stirrup dimension starting from a stirrup width of 100 mm.



Ordering code

Example: STAF – B – 12B – 8 / 150 – 1200

| Product designation | Stirrup type | Type (stirrup width) mm | Steel Ø mm | Bar spacing mm | Access box length mm |
|---------------------|--------------|----------------------------|---------------|-------------------|-------------------------|
| STAF | B | 12B (100) | 8 | 100 | 1200 |
| | | 15B (120) | 10 | 150 | |
| | | 19B (170) | 12 | 200 | |
| | | 22B (200) | | | |

For the Stabox® FB types, the same standard dimensions are used (see Table "Standard Dimensions") as are used for the standard types. Please note that the Type 12B is not compatible with a steel diameter of 12 mm.

Stabox® FD continuity strip

The Stabox® FD double-row continuity strip with variable stirrup width consists of two single sheet steel access boxes, which are connected by an expanded metal profile with an integrated sealing plate coated on both sides. This offers the possibility to connect even larger component dimensions with integrated sealing in a force-locked manner. For variable stirrup dimensions from a stirrup width of 160 cm.



Ordering code

Example: STAF – D – 160 – 8 / 150 – 1200

| Product designation | Stirrup type | Stirrup width (type) mm | Steel Ø mm | Bar spacing mm | Access box length mm |
|---------------------|--------------|----------------------------|---------------|-------------------|-------------------------|
| STAF | D | 160 (5B) | 8 | 100 | 1200 |
| | | 200 (7B) | 10 | 150 | |
| | | 240 (9B) | 12 | 200 | |
| | | 300 (12B) | | | |

Please note that the Type 5B is not compatible with a steel diameter of 12 mm. Special lengths and dimensions on request.

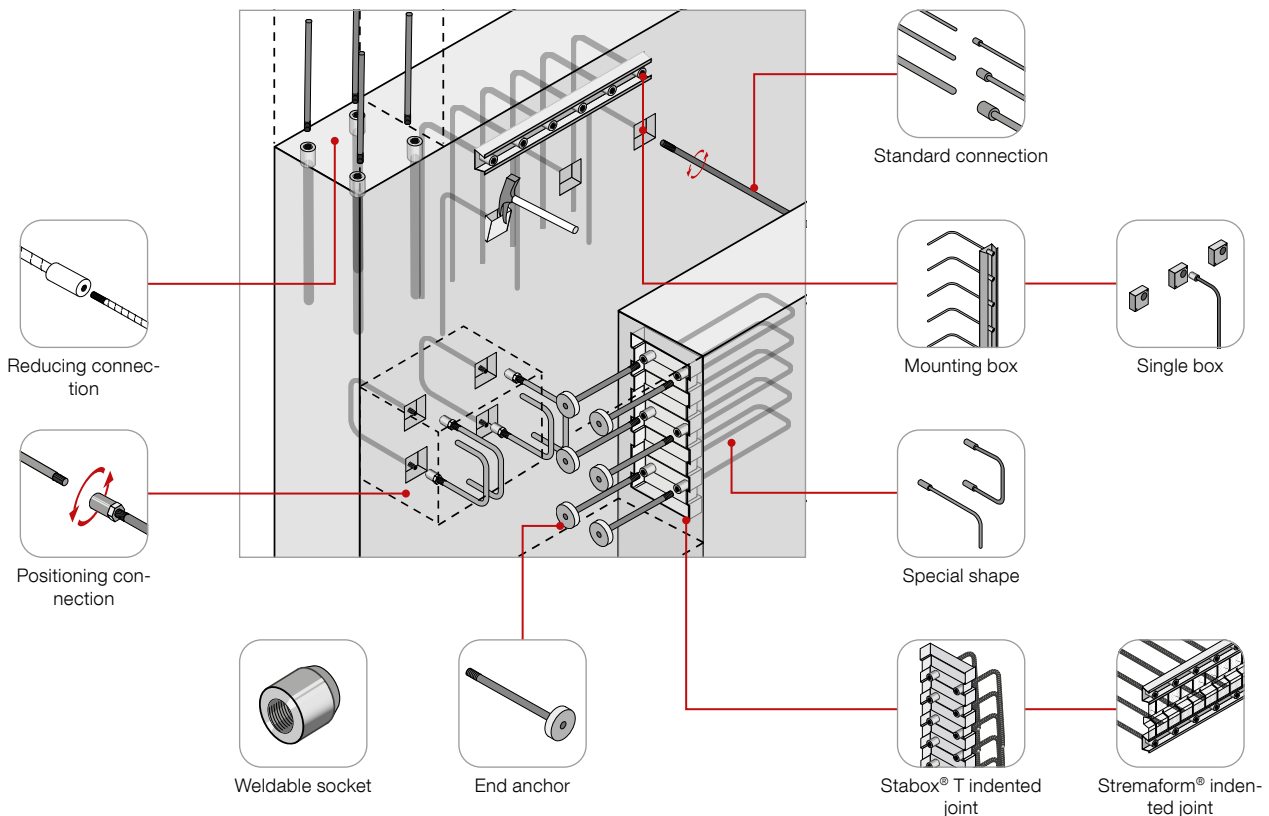


MAX FRANK Coupler threaded connection

The newly developed MAX FRANK threaded socket connections are used where the conventional splice joint is not practical or not permitted. They are also used where rebending is not possible due to the rebar diameter. The rebar connection usually consists of a threaded rod with a pre-mounted threaded coupler for the 1st construction phase as well as the continuation bar for screwing in during the 2nd construction phase. Threaded coupler connections offer an efficient and cost-effective way to connect or reinforcing bars under permanent and dynamic loads.

Advantages

- Approval from the German Institute of Building Technology Berlin for rebar diameters 12 - 40 mm for standard, positioning and reducing connections as well as end anchors (Z-1.5-282).
- Easy and quick installation
- Available for all common rebar diameters (12 to 40 mm)
- 100 % force transmission - "bar break"
- No reduction in the rebar cross-section
- No positioning couplers required
- Designed to conform to international standards: Eurocode 2 (NEN/DIN/BS EN 1992-1-1), ACI 318 type 1-2, test standard ISO 15835
- European Technical Assessment, ETA-20/0387



European Technical Assessment

The MAX FRANK Coupler threaded connection has CE marking according to European Technical Assessment ETA-20/0387.



“Bar break” - the failure of the rebar outside the socket connection

Prior to rolling the threads, a light upsetting of the rebar ends is carried out. As a result of this, failure of the sample outside the socket connection is achieved during tensile tests (“bar break”). The “soft cold forged” process guarantees gentle upsetting in the entire thread area and thus prevents a fatigue or brittle fracture in the thread.



MAX FRANK Coupler standard connection, threaded rod CA

WG: 82

For 1st concrete pour.

| | Item No. | Steel diameter | Installation length | Socket length | Thread-protection cap colour | Weight |
|--|------------|----------------|---------------------|---------------|------------------------------|--------|
| | | mm | mm | mm | | kg/pce |
| | CMCA120720 | 12 | 734 | 28 | Green | 0.68 |
| | CMCA140840 | 14 | 856 | 32 | White | 1.07 |
| | CMCA160960 | 16 | 978 | 36 | Grey | 1.60 |
| | CMCA201200 | 20 | 1222 | 44 | Yellow | 3.10 |
| | CMCA251500 | 25 | 1527 | 54 | White | 6.03 |
| | CMCA281680 | 28 | 1710 | 60 | Blue | 8.46 |
| | CMCA321920 | 32 | 1954 | 68 | Black | 12.63 |

MAX FRANK Coupler standard connection, continuation bar CE

WG: 82

As a supplementary bar for the 2nd concrete pour or for self-assembly of the socket in the 1st concrete pour.

| | Item No. | Steel diameter | Installation length | Tightening torque | Weight |
|--|------------|----------------|---------------------|-------------------|--------|
| | | mm | mm | Nm | kg/pce |
| | CMCE120720 | 12 | 706 | 40 | 0.64 |
| | CMCE140840 | 14 | 824 | 80 | 1.02 |
| | CMCE160960 | 16 | 942 | 120 | 1.52 |
| | CMCE201200 | 20 | 1178 | 180 | 2.96 |
| | CMCE251500 | 25 | 1473 | 270 | 5.78 |
| | CMCE281680 | 28 | 1650 | 270 | 8.11 |
| | CMCE321920 | 32 | 1886 | 300 | 12.12 |

MAX FRANK Coupler torque wrench

WG: 82

- Application of a defined tightening torque to the continuation bar according to the specifications in Z-1.5-282
- Special pliers head for the MAX FRANK Coupler rebar connections from 12 to 40 mm
- Infinite adjustment of the required torques possible

| | Item No. | Tightening torque Nm | Weight kg/pce |
|--|-----------------|-------------------------|------------------|
| | CMDMS730Q20MF14 | 0 - 270 | 2.56 |
| | CMDMS721Q30MF18 | 180 - 350 | 4.15 |

MAX FRANK Coupler custom-made products

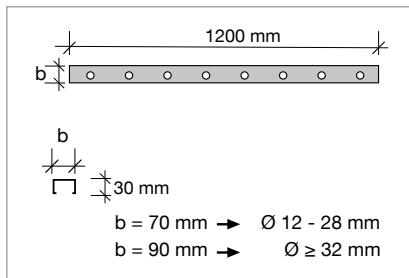
The MAX FRANK Couplers are available as standard versions and as custom-made products under the item no. CMC-SONDER. They can be manufactured at short notice according to your requirements. In addition to different bending radii and individual bar lengths, we also offer a wide range of socket or threaded connections. Alongside standard, position and reducing connections, weldable sockets and end anchors are also possible variants.

| | | | |
|--|-------------------------|--|--|
| | <p>Type CA</p> | | <p>Type CA* Positioning socket</p> |
| | <p>Type CE</p> | | <p>Type CE* Positioning connection CE-bar</p> |
| | <p>Type ECA</p> | | <p>Type ECA* with end anchor</p> |
| | <p>Type DCA</p> | | <p>Type DCA* with end anchor</p> |
| | <p>Type DCE</p> | | <p>Type WCASB</p> |
| | <p>Type WCA</p> | | <p>Type WCE</p> |
| | <p>Type DWCA</p> | | <p>Type DWCE</p> |
| | <p>Type WCAG</p> | | <p>Type WWCA</p> |

* Example of type variants: Under the article number CMCSONDER, the variants of the connections such as positioning and reducing connection as well as weldable couplers and end anchors can also be selected from the different types of bending shapes.

MAX FRANK Coupler mounting box

The MAX FRANK Coupler mounting box enables easy series installation of the threaded connections for all available diameters. The bar spacings can be selected as desired. The mounting box with the polystyrene end caps guarantees free access for the installation of the supplementary bars in the second concrete pour.



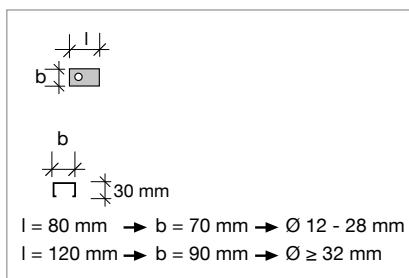
Ordering code

Example: **CMPSTBOX - 1200 - 20 - 150 - 8**

| Product designation | Unit length mm | Steel Ø mm | Centre distance mm | Possible connection per unit Pcs |
|---------------------|-------------------|---------------|-----------------------|-------------------------------------|
| CMPSTBOX | 1200 | 12 | 100 | 12 |
| | | 14 | 150 | 8 |
| | | 16 | 200 | 6 |
| | | 20 | | |
| | | 25 | | |
| | | 28 | | |
| | | 32 | | |

MAX FRANK Coupler single box

The MAX FRANK Coupler mounting box is also available to fit a single line of couplers for standard and positioning connections.



Single mounting box for bar with Coupler sleeve

WG: 82

| Item No. | For steel diameters mm | Carton content pce/carton | Weight kg/pce |
|-------------|---------------------------|------------------------------|------------------|
| CMPSTBOXS12 | 12 | 20 | 0.080 |
| CMPSTBOXS14 | 14 | 20 | 0.080 |
| CMPSTBOXS16 | 16 | 20 | 0.080 |
| CMPSTBOXS20 | 20 | 20 | 0.080 |
| CMPSTBOXS25 | 25 | 20 | 0.080 |
| CMPSTBOXS28 | 28 | 20 | 0.080 |
| CMPSTBOXS32 | 32 | 10 | 0.095 |

Single mounting box for threaded bar

WG: 82

| Item No. | For steel diameters mm | Carton content pce/carton | Weight kg/pce |
|---------------|---------------------------|------------------------------|------------------|
| CMPSTBOXSPE12 | 12 | 20 | 0.080 |
| CMPSTBOXSPE14 | 14 | 20 | 0.080 |
| CMPSTBOXSPE16 | 16 | 20 | 0.080 |
| CMPSTBOXSPE20 | 20 | 20 | 0.080 |
| CMPSTBOXSPE25 | 25 | 20 | 0.080 |
| CMPSTBOXSPE28 | 28 | 20 | 0.080 |
| CMPSTBOXSPE32 | 32 | 10 | 0.095 |



Spacers

Formwork technologies

Reinforcement technologies

Sealing technologies

Building acoustics



MAX FRANK

**BUILDING
COMMON GROUND**

Sealing technologies



Sealing technologies

All concrete structures in contact with the ground must be waterproofed against ground moisture, seepage water or pressurized water - so-called "water impermeable concrete structures". The choice of waterproofing depends on the type of stress, the type of foundation soil and the planned use.



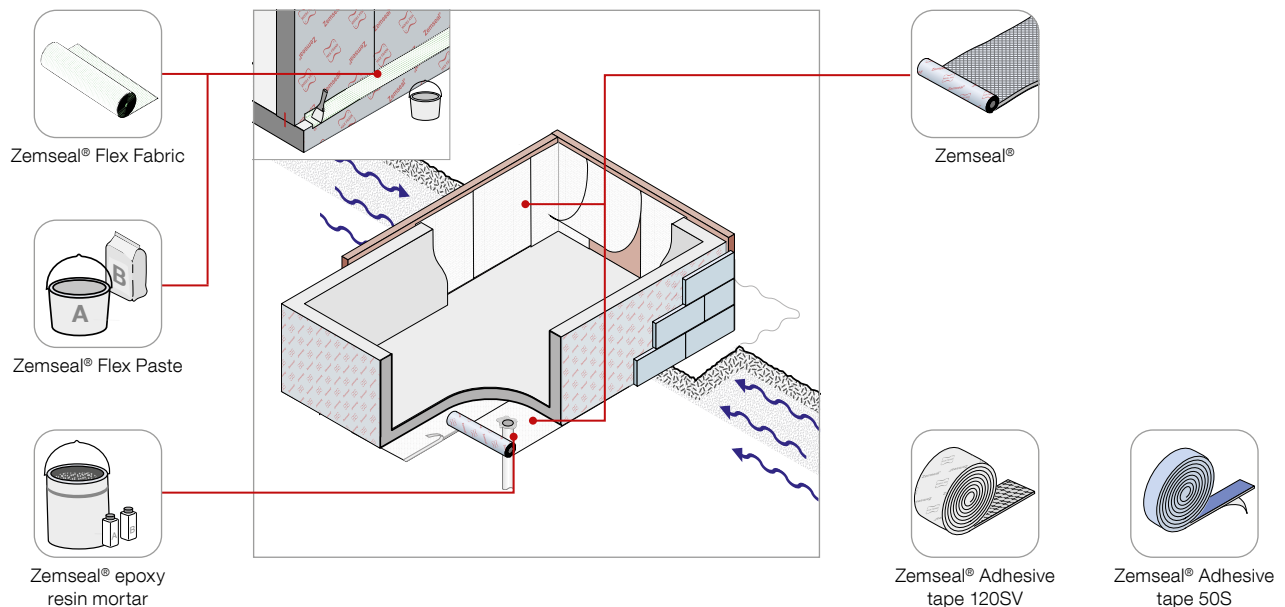


Zemseal® sub-structure waterproofing system

Additional waterproofing measures are usually required to meet all the structural and physical requirements that arise in waterproof structures. In the case of high usage requirements, the use of a safe, fresh concrete composite system has proven its worth. Our Zemseal® FBV system encloses the water-impacted building components and forms a secure and integral external waterproof protection. MAX FRANK Zemseal® FBV technology combines mechanical and adhesive bonding - "dual-bond" technology.


★ Advantages

- Dual-Bond Technology: mechanical and adhesive bond
- Tested leakage protection
- Excellent crack bridging
- High material efficiency (only 50 mm joint overlap)
- Suitable for high-pressure cleaning
- Simple handling due to low roll weight
- Effective diffusion barrier - protection against radon gas
- European Technical Assessment (ETA)
- German National Approval



Zemseal® sub-structure waterproofing system

WG: 181

| | Description | Item No. | Type | Width | Length | Weight | Area | Pallet content |
|---|--|-------------|------|-------|--------|---------|----------------------|----------------|
| | | | | m | m | kg/roll | m ² /roll | roll |
|  | Zemseal® FBV system with integrated adhesive joint | ZSMEM051000 | 05 | 1.00 | 20.00 | 11.20 | 20.00 | 28 |
| | | ZSMEM081000 | 08 | 1.00 | 20.00 | 15.20 | 20.00 | 24 |
| | | ZSMEM082000 | 08 | 2.00 | 20.00 | 30.40 | 40.00 | 61 |
| | | ZSMEM122000 | 12 | 2.00 | 20.00 | 36.40 | 40.00 | 50 |

Further versions on request.

Proof of usability

CE marking according to European Technical Assessment (ETA)

The ETA (European Technical Assessment) is a product performance assessment on European level that leads to CE marking. The product properties and the product performance are defined in the ETA and are confirmed by the manufacturer in the Declaration of Performance (DoP). To receive and to maintain an ETA, comprehensive tests and ongoing quality control are necessary - to ensure highest product quality.



Proof of usability



Ü-mark according to a German national test certificate for a construction product (allgemeines bauaufsichtliches Prüfzeugnis abP)

The German National test certificate for a construction product is a verification of fitness for use according to German Standards, which declares product properties and product performance. The construction product is then to be marked with the Ü-mark. Comprehensive tests and verifications guarantee a product which is ideally suited to the requirements.




Zemseal® adhesive tapes

WG: 181

| | Description | Item No. | Type | Width | Roll length | Packaging unit | Weight |
|---|---|--------------|-------|-------|-------------|----------------|-------------------|
| | | | | mm | m/roll | Pcs | kg/packaging unit |
|  | Acrylic adhesive tape with nonwoven backing for butt and splice joints | ZSACRYL120SV | 120SV | 120 | 30 | 8 | 12.72 |
|  | Acrylic pressure-sensitive adhesive tape for fixing to steel formwork and for butt joints | ZSACRYLKB50 | 50S | 50 | 50 | 12 | 10.80 |


Zemseal® epoxy resin mortar

WG: 181

| | Description | Item No. | Packaging unit | Weight |
|---|--|----------|----------------|--------|
| | | | Pcs | kg/pce |
|  | Zemseal® epoxy resin mortar, solvent-free multi-component mortar | ZSEPM | 1 | 4.50 |


Zemseal® Flex paste

WG: 181

| | Description | Item No. | Weight kg/pce | Pallet content Pcs | Weight kg/pallet |
|---|-----------------------------------|----------|------------------|-----------------------|---------------------|
|  | Zemseal® Flex Paste, 2 components | ZSFLEX | 28.00 | 18 | 524 |

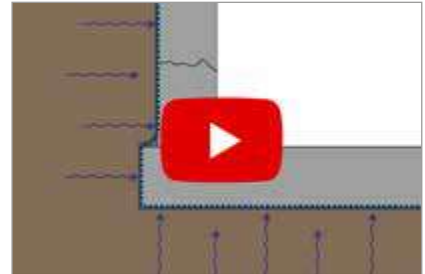
Zemseal® Flex fabric

WG: 181

| | Description | Item No. | Width m | Roll length m/roll | Weight kg/roll |
|---|--|-----------|------------|-----------------------|-------------------|
|  | Zemseal® Flex fabric, reinforcing insert made of glass fibre | ZSFLEXGWB | 1.00 | 50 | 4.00 |

Functional principle of the Zemseal® sub-structure waterproofing system

Sub-structure waterproofing systems are distinguished from other on-roll sealing materials due to their permanent and laminal adhesion to the concrete, resulting in protection against leakage of the sealing plane in the event of damage. The Zemseal® system forms a water-tight enclosure, protecting the components against cracking and water ingress.



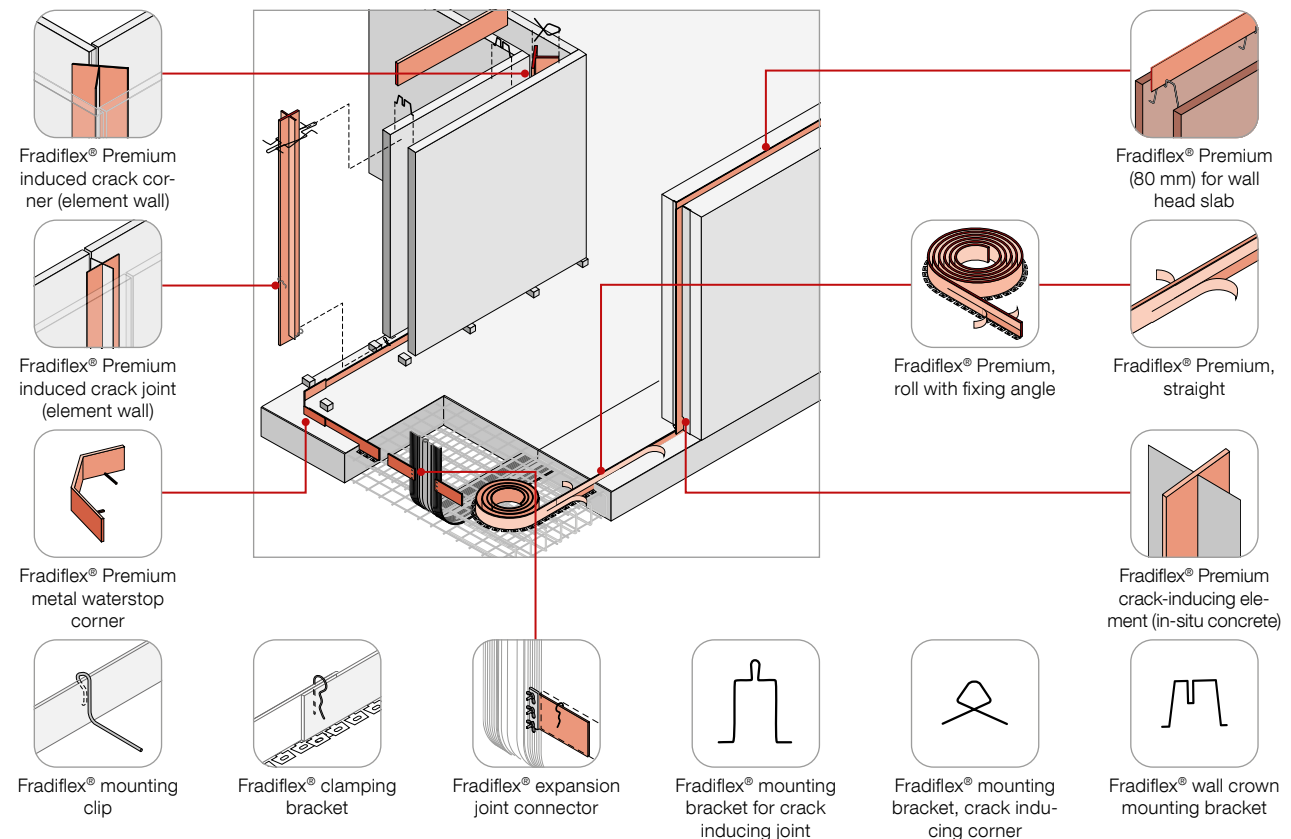


Fradiflex® metal waterstop

All concrete structures in contact with the ground must be sealed against ground moisture, seepage water or pressurized water. Our Fradiflex® metal waterstop system meets all requirements for the secure sealing of water-impermeable structures. The flexible special coating bonds with the concrete, creating an adhesive barrier seal that prevents water from circulating. The system can be used for the reliable sealing of construction and predetermined crack joints in in-situ concrete construction and with element walls.





★ Advantages

- More safety due to fewer splices (roll)
- Simple position protection due to fixing angle
- Tested up to 5.0 bar water pressure (usable according to ETA and abP up to 2.0 bar)
- No welding necessary at the joints
- Fast installation thanks to two fixing points (crack inducing elements)
- Stable crack inducing elements (secure standing and position)
- European Technical Assessment (ETA)
- German National Approval



Fradiflex® Premium metal waterstop

WG: 169

| | Description | Item No. | Length m | Height mm | Packaging unit Pcs | Weight kg/packag- ing unit | Pallet con- tent Packaging unit |
|---|---|----------------------------|----------------|--------------|--------------------------|----------------------------------|--|
|  | Fradiflex® Premium metal waterstop with fixing angle, incl. 2 clamping brackets | FF-BRZ152500BW | 25.00 | 150 | 1 | 21.00 | 36 |
|  | Fradiflex® Premium metal waterstop without fixing angle, incl. 2 clamping brackets | FFBRZ152500 FFBRZ082500 | 25.00 25.00 | 150 80 | 1 2 | 19.00 21.50 | 36 18 |
|  | Fradiflex® Premium metal waterstop, straight, with fixing angle, incl. 58 clamping brackets | FFBGZ-150210BW | 2.10 | 150 | 50 | 105.00 | 10 |
|  | Fradiflex® Premium metal waterstop, straight, without fixing angle, incl. 58 clamping brackets per pack | FFBGZ150210 FFBGZ080210 | 2.10 2.10 | 150 80 | 50 50 | 100.80 46.35 | 10 10 |

Fractional quantities are not possible.

Proof of usability
CE marking according to European Technical Assessment (ETA)


The ETA (European Technical Assessment) is a product performance assessment on European level that leads to CE marking. The product properties and the product performance are defined in the ETA and are confirmed by the manufacturer in the Declaration of Performance (DoP). To receive and to maintain an ETA, comprehensive tests and ongoing quality control are necessary - to ensure highest product quality.


Proof of usability
Ü-mark according to a German national test certificate for a construction product (allgemeines bauaufsichtliches Prüfzeugnis abP)

The German National test certificate for a construction product is a verification of fitness for use according to German Standards, which declares product properties and product performance. The construction product is then to be marked with the Ü-mark. Comprehensive tests and verifications guarantee a product which is ideally suited to the requirements.



Fradiflex® Premium in V4A

WG: 169

| | Description | Item No. | Length m | Height mm | Packaging unit Pcs | Weight kg/packag- ing unit | Pallet content Packaging unit |
|---|--|-----------------|-------------|--------------|--------------------------|----------------------------------|--|
|  | Fradiflex® Premium metal waterstop in V4A with fixing angle, incl. 2 clamping brackets | FFBRZ152500BWSS | 25.00 | 150 | 1 | 19.00 | 36 |

Fradiflex® Premium metal waterstop corner


WG: 171

| | Description | Item No. | Height mm | Packaging unit Pcs | Weight kg/pce |
|---|--|----------|--------------|-----------------------|------------------|
|  | Fradiflex® Premium metal waterstop corner incl. 2 clamping brackets, mandatory when using Fradiflex® Premium induced crack corner (element wall) | FFBECKE | 200 | 1 | 2.30 |

Due to the double-sided coating, it is suitable as both an inner and an outer corner

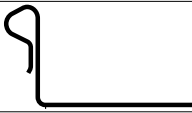

Fradiflex® expansion joint connector

WG: 169

| | Description | Item No. | Height mm | Packaging unit Pcs | Weight kg/packaging unit |
|---|---|----------|--------------|-----------------------|-----------------------------|
|  | Fradiflex® expansion joint connection for connecting Fradiflex® Premium with waterstops | FFBDA08 | 80 | 2 | 0.60 |
| | | FFBDA15 | 150 | 2 | 1.20 |


Fradiflex® mounting clip and clamping bracket

WG: 169

| | Description | Item No. | Packaging unit Pcs | Weight kg/packaging unit |
|---|---|-----------|-----------------------|-----------------------------|
|  | Fradiflex® mounting clip for sheet metal heights 150 mm | FFBBUEG01 | 50 | 7.40 |
|  | Fradiflex® clamping bracket to secure the splice joints | FFBBUEG03 | 125 | 1.75 |

Fradiflex® Premium crack-inducing element (in-situ concrete)


WG: 171

| | Description | Item No. | Length m | Width mm | Pallet content Pcs | Weight kg/pce |
|---|--|-----------|-------------|-------------|-----------------------|------------------|
|  | Fradiflex® Premium crack inducing element for use in in-situ concrete applications, incl. 2 clamping brackets, crack plate width 2 x 50 mm | FFBSRO250 | 2.50 | 150 | 32 | 7.80 |
| | | FFBSRO300 | 3.00 | 150 | 32 | 12.00 |

Suitable for component thicknesses up to 300 mm. Further versions on request.

Fradiflex® Premium induced crack corner (element wall)


WG: 171

| | Description | Item No. | Length m | Width mm | Pallet content Pcs | Weight kg/pce |
|---|--|-----------|-------------|-------------|-----------------------|------------------|
|  | Fradiflex® Premium crack inducing corner element for twin walls, incl. 2 clamping brackets, crack plate width 100 mm | FFBSRE | 2.50 | 150 | 32 | 8.40 |
| | | FFBSRE300 | 3.00 | 150 | 32 | 10.10 |

Suitable for component thicknesses up to 300 mm. Further versions on request.

Fradiflex® Premium induced crack joint (element wall)


WG: 171

| | Description | Item No. | Length m | Width mm | Pallet content Pcs | Weight kg/pce |
|---|---|-----------|-------------|-------------|-----------------------|------------------|
|  | Fradiflex® Premium crack inducer for twin walls, incl. 2 clamping brackets, crack plate width 2 x 30 mm | FFBSRF | 2.50 | 150 | 32 | 6.50 |
| | | FFBSRF300 | 3.00 | 150 | 32 | 8.20 |

Suitable for wall thicknesses of up to 300 mm. Further versions on request.




Fradiflex® connection set for crack inducing elements

WG: 171

| | Description | Item No. | Packaging unit Pcs | Weight kg/pce |
|---|--|-----------|-----------------------|------------------|
|  | For the extension of crack inducing elements, including 2 clamping brackets and two crack plate clamps | FFBSEVSET | 1 | 0.10 |


Fradiflex® mounting bracket

WG: 171

| | Description | Item No. | For total wall thickness mm | Packaging unit Pcs | Weight kg/packaging unit |
|---|---|------------|--------------------------------|-----------------------|-----------------------------|
|  | Fradiflex® mounting bracket for crack inducing joint | FFBBUEG24F | 240 | 20 | 3.00 |
| | | FFBBUEG30F | 300 | 20 | 3.00 |
|  | Fradiflex® mounting bracket for crack inducing corner | FFBBUEG24E | 240 | 10 | 2.20 |
| | | FFBBUEG30E | 300 | 10 | 2.20 |
|  | Fradiflex® mounting bracket for wall crown | FFBBUEGK | 240 - 300 | 20 | 2.60 |

Special sealing tape

WG: 169

| | Description | Item No. | Width mm | Length m | Packaging unit Pcs | Weight kg/packaging unit |
|---|--|--------------|-------------|-------------|-----------------------|-----------------------------|
|  | Special sealing tape for securing joints and for repairs | YBUTYLKBA050 | 50 | 15.00 | 12 | 15.00 |
| | | YBUTYLKBA100 | 100 | 15.00 | 6 | 15.00 |

Application video for Fradiflex® Roll

With the Fradiflex® coated metal waterstop, sealing of the working joint between the floor slab and the rising wall in the form of a “white tank” can be achieved in a time-saving manner. Fradiflex® is recognised on building sites due to its easy installation at the prefabricated fixing angles, as well as the temperature bandwidth of the bitumen-free special coating.



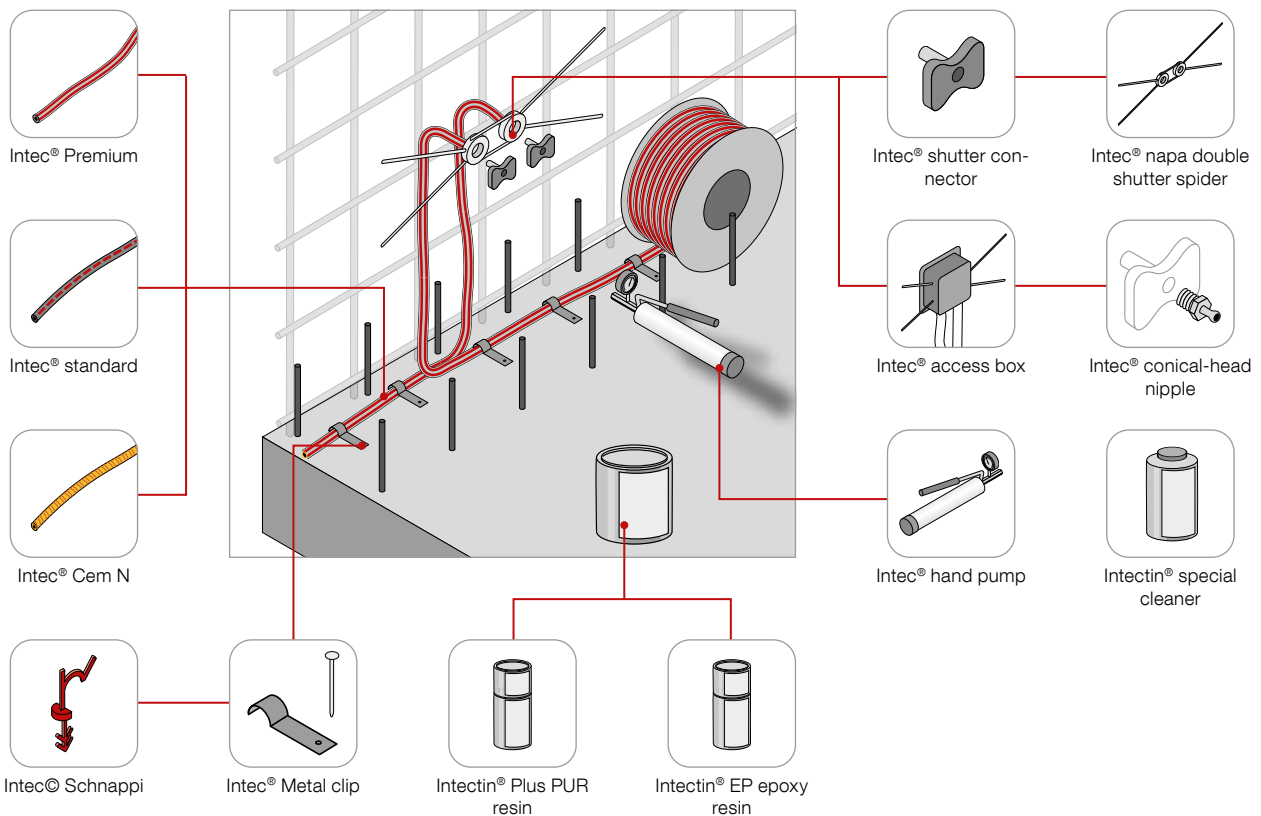


Intec® injection hose system

Intec® injection hose technology seals horizontal and vertical construction joints in impermeable structures safely and quickly. The suitable injection hose in combination with the suitable injection material result in an approved system. As additional construction joint protection, a combination of the injection hose with other joint sealing systems can also provide increased sealing safety. The extensive range of accessories and tested grouting materials are helpful for installers in practice.


★ Advantages

- As primary and secondary sealant
- Patented multiple injection
- Injection circuit lengths up to 30 m
- Injection hose does not sinter during concreting
- Tested up to 5.0 bar water pressure (usable according to abP up to 2.0 bar)
- German National Approval




Intec® Premium

WG: 166

| | Description | Item No. | Internal diameter mm | Roll length m/roll | Packaging unit | | Weight | |
|---|---|----------|-------------------------|-----------------------|----------------|------|--------|--|
| | | | | | Pcs | kg/m | | |
|  | Intec® Premium injection hose (re-injectable), initial injection and re-injection with PUR resins and other injection materials | IVINTECP | 5 | 100 | 1 | | 0.12 | |


Intec® Standard

WG: 166

| | Description | Item No. | Internal diameter mm | Roll length m/roll | Packaging unit | | Weight | |
|---|---|----------|-------------------------|-----------------------|----------------|------|--------|--|
| | | | | | Pcs | kg/m | | |
|  | Intec® standard injection hose (injectable once), injection with resins | IVINTECN | 5 | 100 | 1 | | 0.11 | |

Intec® Cem N

WG: 166

| | Description | Item No. | Internal diameter mm | Roll length m/roll | Packaging unit | | Weight | |
|--|---|----------|-------------------------|-----------------------|----------------|------|--------|--|
| | | | | | Pcs | kg/m | | |
|  | Intec® Cem N injection hose (re-injectable), initial and repeated injections with cement paste with underpinnings and void fillings | IVPSCEMN | 10 | 50 | 1 | | 0.23 | |

Proof of usability

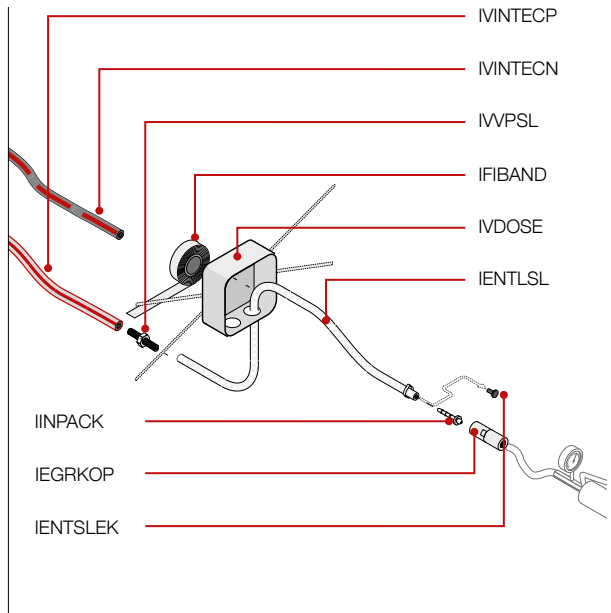
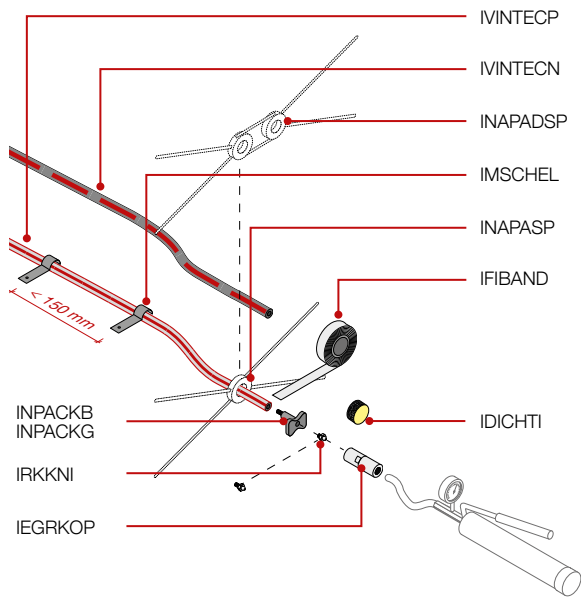
Ü-mark according to a German national test certificate for a construction product (allgemeines bauaufsichtliches Prüfzeugnis abP)

The German National test certificate for a construction product is a verification of fitness for use according to German Standards, which declares product properties and product performance. The construction product is then to be marked with the Ü-mark. Comprehensive tests and verifications guarantee a product which is ideally suited to the requirements.



Spacers

Formwork technologies




Reinforcement technologies

Sealing technologies

Building acoustics

Intec® Premium and Intec® Standard Components

WG: 168

| | Description | Item No. | Suitable for | Packaging unit Pcs |
|---|---|----------|--------------------|-----------------------|
|  | Shutter connector, blue | INPACKB | IVINTECN, IVINTECP | 20 |
|  | Shutter connector, yellow | INPACKG | IVINTECN, IVINTECP | 20 |
|  | Schnappi (fresh concrete or 8 mm drill hole, requirement 6 pcs./m) | ISCHNC | IVINTECN, IVINTECP | 100 |
|  | Metal clip with nail plug (6 mm drill hole, 6 required per m) | IMSCHEL | IVINTECN, IVINTECP | 100 |
|  | Intec® clip made of plastic, with pre-mounted nail, to fit power-actuated fastener (requirement 6 pcs./m) | IKSCHEL | IVINTECN, IVINTECP | 100 |
|  | Metal clip with pre-mounted nail to fit power-actuated fastener (requirement 6 pcs./m) | IMSHILT | IVINTECN, IVINTECP | 100 |
|  | Dichti (foam) | IDICHTI | INPACKB, INPACKG | 20 |
|  | Napa spider (adjustable), serves to fix the shutter connector to the reinforcement | INAPASP | INPACKB, INPACKG | 20 |
|  | Napa double shutter spider | INAPADSP | INPACKB, INPACKG | 20 |

Intec® Premium and Intec® Standard Components

WG: 168

| | Description | Item No. | Suitable for | Packaging unit Pcs |
|---|---|-----------|---------------------------|-----------------------|
|  | Steel connector | IVVPSL | IVINTECN, IVINTECP | 50 |
|  | Recessed access box with lid, for embedding and protected storage of the grouting hose ends in the concrete | IVDOSE | IVERPE | 1 |
|  | Intec® injection hose ends Ø 4 mm, breather tube with steel connector and end cap, length 0.4 m | IVERPE | IVINTECN, IVINTECP | 20 |
|  | Interior packer with conical-head nipple and double ear hose clamp to fit breather tube | IIPACK | IVERPE, IENTLSL | 100 |
|  | Metal waterstop clip for fixing the injection hose to the metal waterstop (requirement approx. 7 pcs./m) | IFBK | IVINTECN, IVINTECP | 100 |
|  | Water bar clip for fixing the injection hose (requirement approx. 8 pcs./m) | IFBK2 | IVINTECN, IVINTECP | 100 |
|  | Conical-head nipple with non-return valve (requirement approx. 1 pce/shutter connector) | IRKKNI | INPACKB, INPACKG | 50 |
|  | Socket wrench for conical-head nipple | ISTSKK | IRKKNI | 1 |
|  | Hand pump complete with high-pressure armoured hose and gripper head only for resin injection | IHPRESS | - | 1 |
|  | Hydraulic pressure gauge 0 to 160 bar | IHMANOM | IHPRESS | 1 |
|  | T-piece for mounting the pressure gauge on the hand pump | ITSTHM | IHPRESS, IHMANOM | 1 |
|  | Replacement sealing gasket for the hand pump | IHPDICH | IHPRESS | 20 |
|  | Conical-head nipple grip valve to fit conical -head nipple | IEGRKOP | IHPRESS, IHDP0500 | 1 |
|  | High-pressure armoured hose 0.5 m long; the high-pressure armoured hose can also be screwed directly into the shutter connector | IHDPS0500 | INPACKB, INPACKG, IHPRESS | 1 |

Spacers

Formwork technologies

Reinforcement technologies

Sealing technologies

Building acoustics

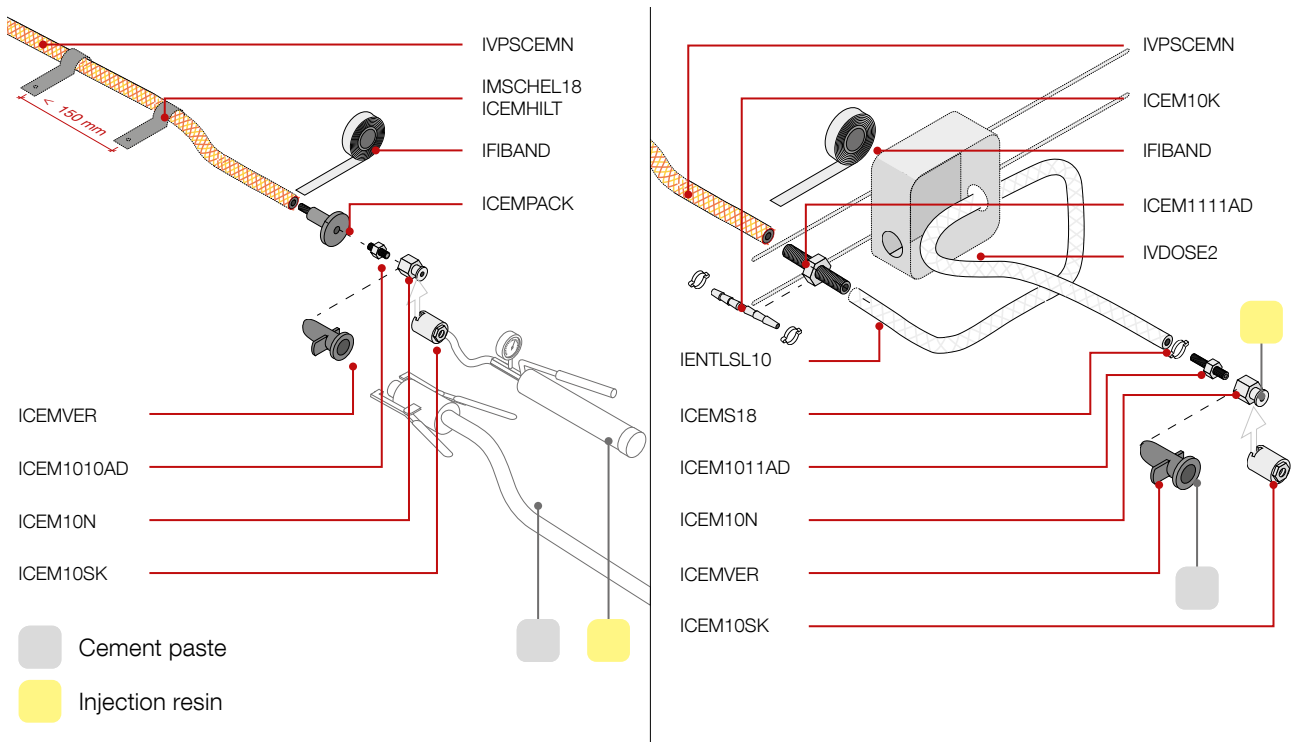
Intec® Premium and Intec® Standard Components

WG: 168

| | Description | Item No. | Suitable for | Packaging unit Pcs |
|--|---|-----------|--------------|-----------------------|
| | Adapter with 2 internal threads M10 x 1.0 is used for connecting (extending) high-pressure armoured hoses | IAHDPS | IHDPS0500 | 1 |
| | Stirring rod for drilling machine | IRWBOR | - | 5 |
| | End cap for breather tube Ø 4 mm | IENTLSLEK | IENTLSL | - |













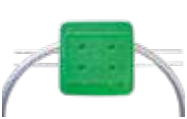
WG: 168

| | Description | Item No. | Roll length m/roll | Packaging unit Pcs |
|--|---|----------|-----------------------|-----------------------|
| | Breather tube, internal diameter 4 mm, 25 bar | IENTLSL | 50 | 1 |
| | Filament tape | IFIBAND | 50 | 72 |



Intec® Cem N injection hose - components

WG: 168

| | Description | Item No. | Suitable for | Packaging unit Pcs |
|---|--|------------|--|-----------------------|
|  | Shutter connector for Intec® Cem N | ICEPACK | IVPSCEMN | 1 |
|  | Metal clip with nail plug for Intec® Cem N | IMSCHEL18 | IVPSCEMN | 100 |
|  | Plastic coupling for Intec® Cem N and breather tube Ø 10 mm | ICEM10K | IVPSCEMN, IENTLSL10 | 10 |
|  | Metal clip with pre-mounted nail to fit power-actuated fastener for Intec® Cem N | ICEMHILT | IVPSCEMN | 100 |
|  | Steel connector for Intec® Cem N | ICEM1111AD | IVPSCEMN | 100 |
|  | Connector for Intec® Cem N or breather tube Ø 10 mm to M10 | ICEM1011AD | IVPSCEMN, IENTLSL10, ICEMPACK, ICEMVER | 10 |
|  | Double ear hose clamp Ø 17-18 mm for Intec® Cem N and breather tube Ø 10 mm | ICEMS18 | ICEM1011AD, ICEM1111AD, ICEM10K | 100 |
|  | End piece with connection (M10) for commercially available injection grips | ICEMVER | - | 1 |
|  | End cap for breather tube Ø 10 mm | IENTLK10 | IENTLSL10 | 20 |
|  | Adapter (M10 x 1.0 outer / M10 x 1.0 outer), intermediate piece between shutter connector and flat-headed nipple | ICEM1010AD | ICEPACK, ICEMVER, ICEM10N | 10 |
|  | Flat-headed nipple with non-return valve | ICEM10N | ICEM1011AD, ICEM1010AD | 1 |
|  | Press-on coupling for connecting to the flat-headed nipple | ICEM10SK | ICEM10N | 1 |
|  | Recessed access box with lid, for embedding and protected storage of the grouting hose ends in the concrete | IVDOSE2 | IENTLSL10 | 1 |



Spacers

Formwork technologies

Reinforcement technologies

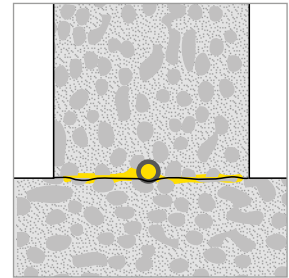
Sealing technologies

Building acoustics

| | Description | Item No. | Roll length m/roll | Packaging unit Pcs |
|---|---|----------|-----------------------|-----------------------|
|  | Filament tape | IFIBAND | 50 | 72 |
|  | Venting hose inner diameter 10 mm, 25 bar | IENLTL10 | 50 | 1 |

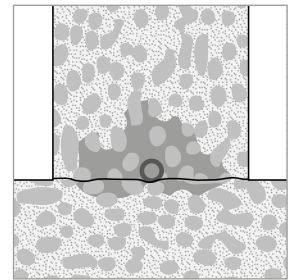
Injection with resins with Intec® Premium and Standard

The injection with polyurethane resins (PUR) is used for the pressure water-tight sealing of concrete working joints. Empirical value: Average resin consumption around 1 - 1.5 litres / 10 m joint. A robust hose system for multiple use is available through the Intec® Premium injection hose. By means of patented compressed air flushing, the hose is flushed free after injection, so the joint can be injected again at a later time.



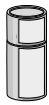
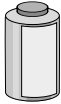
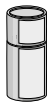
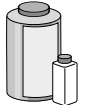

Injection with cement paste with Intec® Cem N

The injection of cement paste and suspensions serves the filling of large volumes. Increased formation of voids often occurs in the case of underpinning and difficult concreting tasks. These flaws can thus be closed and sealed in a planned and targeted manner. The Intec® Cem N injection hose system can also be injected multiple times with different media.



Intectin® injection materials

WG: 168

| | Description | Item No. | Content | Packaging unit Pcs | Weight kg/packaging unit |
|---|--|-----------|---------------------------|-----------------------|-----------------------------|
|  | Intectin® Plus polyurethane resin according to EN 1504-5 with CE marking, suitable for hose injection and crack injection, low viscosity and elastic curing with extended pot time (equivalent to 100 min) | IPUP01 | A: 0,75 l + B: 0,25 l | 6 | 6.84 |
|  | Intectin® Special cleaner, suitable for both PUR and EP resins | IPUSR01 | 1 l | 12 | 10.44 |
|  | Intectin® EP, two-component epoxy resin for force-locked hose and crack injection, suitable for dry and moist substrate | IPIH01 | A: 0,835 kg + B: 0,165 kg | 12 | 12.00 |
|  | Intectin® Blitz incl. accelerator, special PUR resin, foams when water enters, stops the water flow, accelerator content approx. 10% | IPUHB01 | A: 0,9 kg + B: 0,1 kg | 12 | 12.00 |
|  | Accelerator for Intectin® Plus and Intectin® Blitz | IPUHBB001 | 0,1 kg | 1 | 0.10 |

| Description | Possible injection materials | | | | Injectability | |
|-----------------|------------------------------|----|-------------------|--------------|---------------|----------|
| | PUR | EP | Cement suspension | Cement paste | Simple | Multiple |
| Intec® Standard | + | + | - | - | + | - |
| Intec® Premium | + | + | - | - | + | + |
| Intec® Cem N | + | + | + | + | + | + |

⊕ suitable ⊖ not suitable





Application film: multiple injection

In this application video we show you the Intec® Premium injection procedure in detail. You can look directly into the concrete working joint through a Plexiglass panel fixed to the test specimen. So that you can follow the sequence more easily we have dyed the polyurethane resin Intectin Plus. See how the Intec® technology works for yourself.



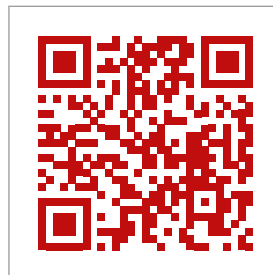
Screw packer

WG: 168

| | Description | Item No. | Packer diameter mm | Drill diameter mm | Packer length mm | Packaging unit |
|---|--|------------|-----------------------|----------------------|---------------------|----------------|
| | | | | | | Pcs |
|  | Screw packer, complete incl. conical-head nipple | ISP08075 | 8 | 8 | 75 | 100 |
| | | ISP10100 | 10 | 10 | 100 | 100 |
| | | ISP13075 | 13 | 14 | 75 | 100 |
|  | Screw packer with foot valve incl. conical-head nipple for the 1-day building site | ISP13100 | 13 | 14 | 100 | 100 |
| | | ISP13150 | 13 | 14 | 150 | 50 |
| | | ISP10100FV | 10 | 10 | 100 | 100 |
|  | Screw packer with foot valve incl. conical-head nipple for the 1-day building site | ISP13100FV | 13 | 14 | 100 | 100 |
|  | | | | | | |

Application film for crack injection

This video demonstrates how dry, wet or water-conducting cracks and joints are correctly injected using screw packers and injection grout. The setting of the packers, the preparation of the crack or joint, the injection, the cleaning of the tools employed and the cosmetic finishing work are illustrated graphically.



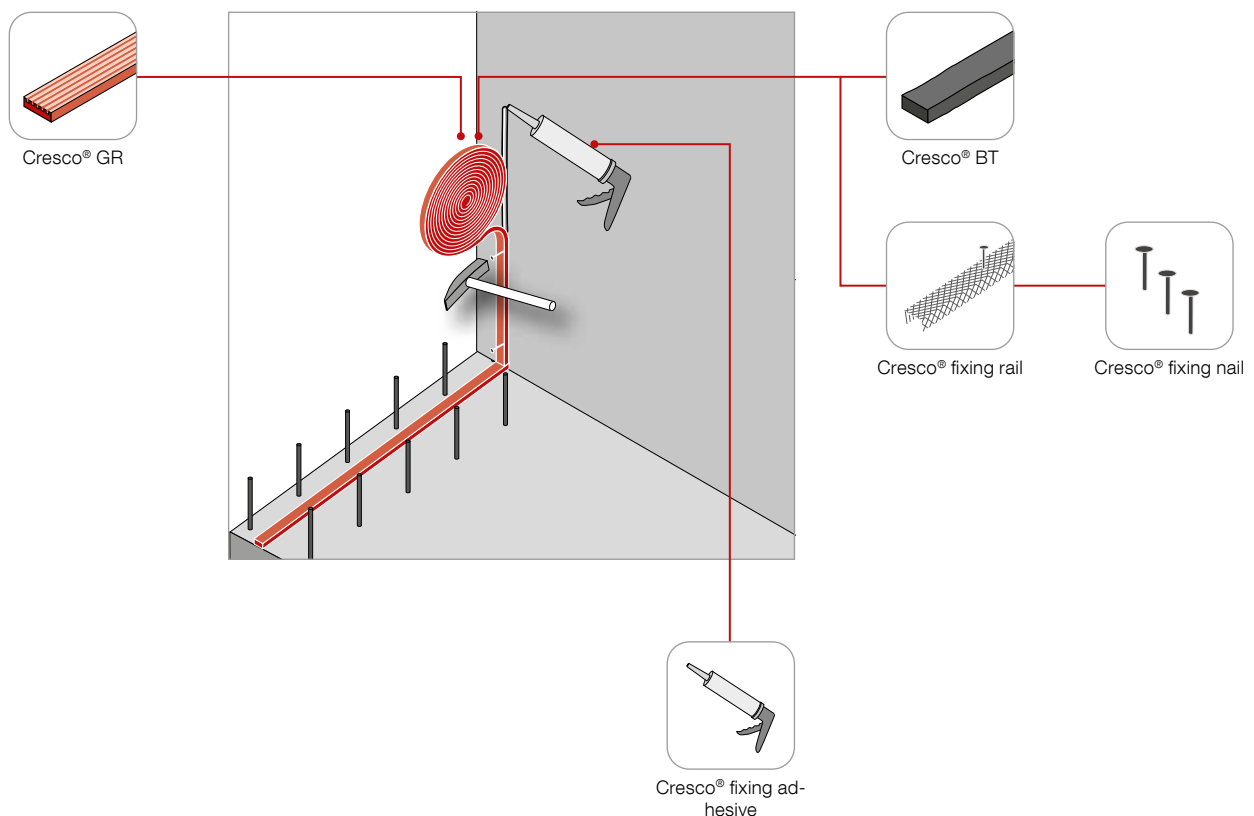


Cresco® expanding waterstop

Cresco® expanding waterstops are particularly used for difficult geometric joint courses. These prevent the penetration of water in the construction joints of impermeable concrete structures. When water enters, the swelling process begins and creates a sealing effect. Our Cresco® GR is a rubber-based swelling tape which remains stable in its form and the sealing is achieved by the increase in volume and the swelling pressure. The bentonite-based swelling tape Cresco® BT also expands into cavities and cracks due to its volume increase.


★ Advantages

- Long-lasting expansion capacity
- Excellent dimensional stability
- Controlled limited expansion
- Reliable solution for pipe sealing
- Suitable for water exchange zones
- Tested up to 5.0 bar water pressure (usable according to abP up to 2.0 bar)
- German National Approval




Cresco® GR

WG: 170

| | Item No. | Dimension mm | Roll length m/roll | Packaging unit Pcs | Weight kg/m | Pallet content Packaging unit | Weight kg/pallet |
|---|-----------|-----------------|-----------------------|-----------------------|----------------|----------------------------------|---------------------|
|  | QUBCRESGR | 22 x 6 | 15 | 9 | 0.14 | 36 | 676 |

Cresco® BT

WG: 170


| | Item No. | Dimension mm | Roll length m/roll | Packaging unit Pcs | Weight kg/m | Pallet content Packaging unit | Weight kg/pallet |
|---|-------------|-----------------|-----------------------|-----------------------|----------------|----------------------------------|---------------------|
|  | QUBCRESBT25 | 20 x 25 | 5 | 4 | 0.63 | 56 | 726 |

Proof of usability
Ü-mark according to a German national test certificate for a construction product (allgemeines bauaufsichtliches Prüfzeugnis abP)

The German National test certificate for a construction product is a verification of fitness for use according to German Standards, which declares product properties and product performance. The construction product is then to be marked with the Ü-mark. Comprehensive tests and verifications guarantee a product which is ideally suited to the requirements.



Cresco® fixing rail

WG: 172

| | Item No. | Suitable for | Length mm | Packaging unit Pcs | Weight kg/m |
|---|----------|--------------|--------------|-----------------------|----------------|
|  | QBSSBG | QUBCRESBT25 | 1000 | 20 | 0.05 |

Cresco® fixing nail


WG: 172

| | Item No. | Length mm | Packaging unit Pcs | Weight kg/package unit |
|---|----------|--------------|-----------------------|---------------------------|
|  | QUBNAGEL | 52 | 100 | 0.72 |

With pre-mounted plate suitable for power-actuated fasteners (only possible in combination with fixing rail)

Cresco® fixing adhesive

WG: 172

| | Item No. | Contents ml/pce | Packaging unit Pcs | Pallet content Packaging unit | Weight kg/package unit |
|---|----------|--------------------|-----------------------|----------------------------------|---------------------------|
|  | QUBMKL | 310.00 | 20 | 60 | 10.00 |

Depending on the substrate, one cartridge is sufficient for approx. 8 - 10 m.



Spacers

Formwork technologies

Reinforcement technologies

Sealing technologies

Building acoustics



BUILDING
COMMON GROUND

Building acoustics



Building acoustics

The MAX FRANK building acoustics line makes products available to planners that meet the heightened requirements of building acoustics, e.g. such as impact sound insulation in the staircase.



Sorp 10[®] room-acoustic sound absorber

146



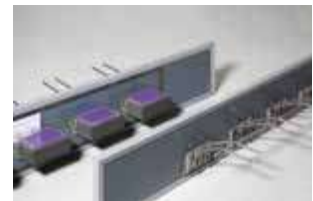
Egcopal impact sound insulated shear force dowel

148



Egcosono stair landing bearing

152



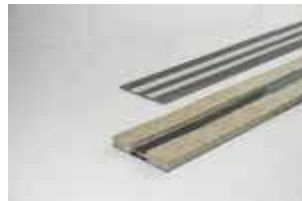
Egcostep[®] stair flight decoupling

155



Egcoscal stair beddings

157



Egcodist wall and floor bearings

161



Egcovoid[®] void former

163

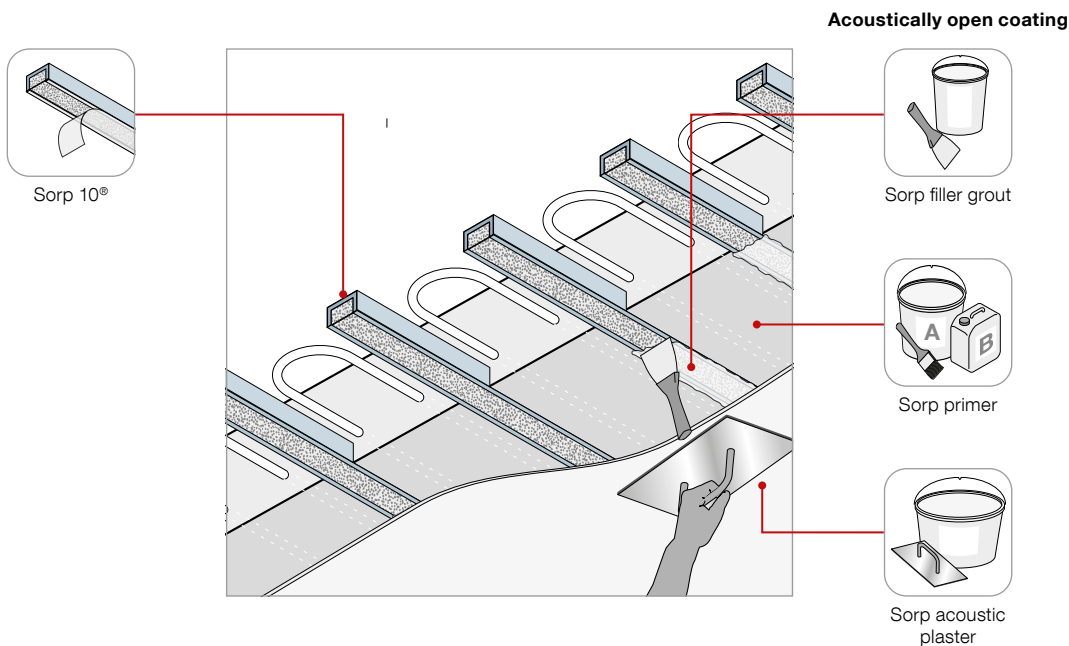


Sorp 10[®] room-acoustic sound absorber

The requirements regarding sustainable buildings and rising energy costs are increasingly leading to the use of partially core activated building components. These must not be covered with absorbent materials or concealed with suspended ceiling systems. The Sorp 10[®] sound absorber combines room acoustics and core part activation into one function. Reverberation time can be reduced with a stripe arrangement of Sorp 10[®] in the bare ceiling. At the same time the influence on the thermal efficiency of the activated ceiling is minimized. With Sorp 10[®] room acoustics can be specifically included in the project planning and realised already in the shell construction phase.

★ Advantages


- Room acoustics for thermally activated structural components
- Diversity of optical design option: open or filled
- Installation already in the shell
- Acoustics immediately effective after stripping
- Very high sound absorption coefficient with low surface coverage
- Recyclable, non-flammable
- No loss of usable room height



Sorp 10[®] room-acoustic sound absorber

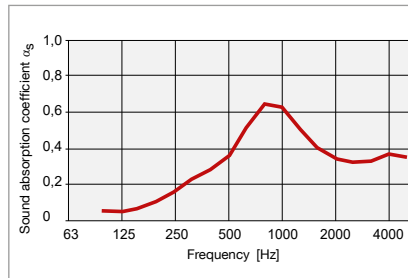
WG: 300

Acoustic strip absorber as spacer for thermally activated structural elements.

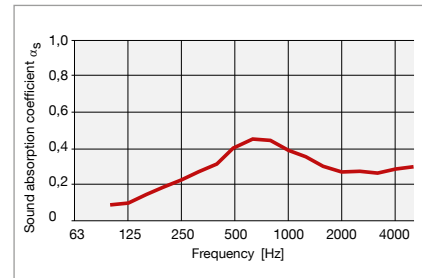
| | Item No. | Length mm | Width mm | Height mm | Weight kg/pce |
|---|----------------|--------------|-------------|--------------|------------------|
|  | AKUSORP3512002 | 1200 | 70 | 35 | 3.18 |

Frequency-dependent sound absorption coefficients α_s :

Extract from the test report P-BA 46/2011 (Sorp 10[®] without coating) and test report P-BA 98/2014 (Sorp 10[®] with coating system) by the Fraunhofer Institute of Building Physics IBP, Stuttgart.






Sorp 10[®] sound absorption curve without Sorp acoustic plaster



Sorp 10[®] sound absorption curve with Sorp acoustic plaster

Sorp coating system

WG: 300

| | Description | Item No. | Weight kg/pce |
|---|---|----------|------------------|
|  | Sorp filler grout, sonically transparent grouting material | SORPFS01 | 8.00 |
|  | Sorp primer, components A and B in ratio 2:1 | SORPGR | 15.00 |
|  | Sorp acoustic plaster, open-pored material for manufacturing a full-surface filling | SORPSP02 | 15.00 |

The Sorp 10[®] sound absorber was tested in the system in combination with Sorp filler grout, Sorp primer and Sorp acoustic plaster. Test reports provide information on the sound absorption performance of the overall system.

Projects



Roto Development Centre
© David Franck, Ostfildern



Südwestmetall Administration Building
© Martin Duckek



SisCampus
© f.x. brun fotograf, altdorf



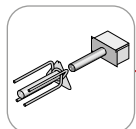
Egcopal impact sound insulated shear force dowel

The requirements for sound insulation in buildings have been increasing for years. To meet the requirements, impact sound insulation of stairs and stair landings must be certified. The impact noise insulated Egcopal shear force connector reduces impact sound by decoupling components. It is used for the bedding of stair landings, arcades and cantilever balconies and transmits the shear forces acting in the connection joint. At the same time, the acoustically decoupled bedding ensures that the transmission of irritating noises into adjacent rooms is insulated – this increases the comfort and well-being of the residents.

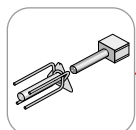
★ Advantages

- German National Approval for Egcopal SP, Egcopal SPH, Egcopal SPX
- Impact sound properties tested in an accredited test laboratory according to DIN 7396
- Impact sound level difference of stair landing ΔL^*w , stair landing up to 35 dB
- Fire protection rating F120
- Stainless steel version
- No restrictions of the exposure class acc. to EC2

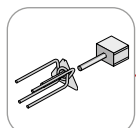
Precast element



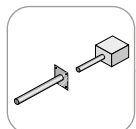
Egcopal SPX F



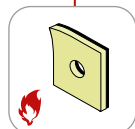
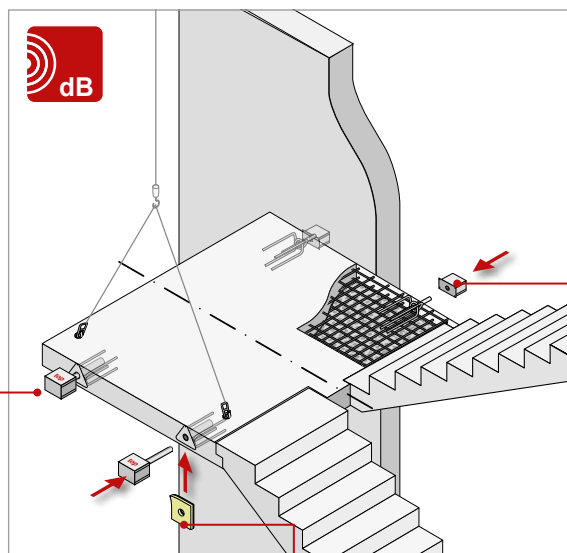
Egcopal SPH F



Egcopal SP F

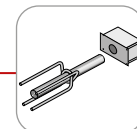


Egcopal SP light F

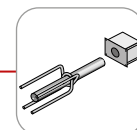


Fire protection collar

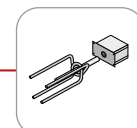
In-situ concrete



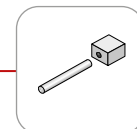
Egcopal SPX O



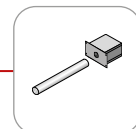
Egcopal SPH O



Egcopal SP O



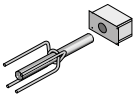
Egcopal SP light O



Egcopal SP light OB

Egcopal SPX impact sound insulated shear force dowel for in-situ concrete

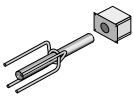
WG: 279

| | Description | Item No. | Type | Joint width | max. load capacity V_{Rd} up to kN/element | Weight kg/pce |
|---|----------------------|------------|--------|-------------|--|---------------|
| | | | | mm | | |
|  | for extra high loads | ESPOKFXL | SPX O | 0 - 100 | 60.3 | - |
| | | ESPOKFXLPM | SPX O± | 0 - 100 | 60.3 | - |

Please specify the exact joint width when ordering (0 - 30 mm, 31 - 60 mm, 61 - 100 mm).

Egcopal SPH impact sound insulated shear force dowel for in-situ concrete

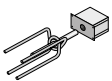
WG: 279

| | Description | Item No. | Type | Joint width | max. load capacity V_{Rd} up to kN/element | Weight kg/pce |
|---|----------------|------------|--------|-------------|--|---------------|
| | | | | mm | | |
|  | for high loads | ESPOGFHL | SPH O | 41 - 100 | 37.3 | 10.550 |
| | | ESPOGFHLPM | SPH O± | 41 - 100 | 37.3 | 11.310 |

Please specify the exact joint width when ordering (41 - 60 mm, 61 - 80 mm, 81 - 100 mm).

Egcopal SP impact sound insulated shear force dowel for in-situ concrete


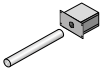
WG: 279

| | Description | Item No. | Type | Joint width | max. load capacity V_{Rd} up to kN/element | Weight kg/pce |
|---|------------------|----------|-------|-------------|--|---------------|
| | | | | mm | | |
|  | for normal loads | ESPOKF | SP O | 0 - 40 | 37.3 | 4.930 |
| | | ESPOGF | SP O | 41 - 100 | 34.9 | 5.400 |
| | | ESPOKFPM | SP O± | 0 - 60 | 37.3 | 5.690 |
| | | ESPOGFPM | SP O± | 61 - 100 | 27.7 | 6.160 |

Please specify the exact joint width when ordering. (Type SP O with KF Small joint 0 - 20 mm, 21 - 40 mm. Type SP O with GF Large joint 41 - 60 mm, 61 - 80 mm, 81 - 100 mm. Type SP O± with KF Small joint 0 - 20 mm, 21 - 40 mm, 41 - 60 mm. Type SP O± with GF Large joint 61 - 80 mm, 81 - 100 mm).

Egcopal SP light impact sound insulated shear force dowel for in-situ concrete

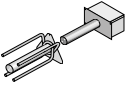
WG: 279

| | Description | Item No. | Type | Joint width | max. load capacity V_{Rd} up to kN/element | Weight kg/pce |
|---|---|----------|-------------|-------------|--|---------------|
| | | | | mm | | |
|  | for low to medium loads (masonry wall) | ESPLO | SP light O | 0 - 60 | 37.3 | 3.790 |
|  | for low to medium loads (in-situ concrete wall) | ESPLOB | SP light OB | 0 - 60 | 37.3 | 4.710 |

Please specify the exact joint width when ordering (0 - 20 mm, 21 - 40 mm, 41 - 60 mm). A type static analysis is available for Egcopal SP light.

Egcopal SPX impact sound insulated shear force dowel for precast element

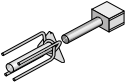
WG: 279

| | Description | Item No. | Type | Joint width | max. load capacity V_{Rd} up to kN/element | Weight kg/pce |
|---|----------------------|------------|--------|-------------|--|---------------|
| | | | | mm | | |
|  | for extra high loads | ESPFKFXL | SPX F | 0 - 100 | 60.3 | - |
| | | ESPFKFXLPM | SPX F± | 0 - 100 | 60.3 | - |

Please specify the exact joint width when ordering (0 - 30 mm, 31 - 60 mm, 61 - 100 mm).

Egcopal SPH impact sound insulated shear force dowel for precast element

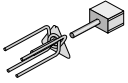
WG: 279

| | Description | Item No. | Type | Joint width | max. load capacity V_{Rd} up to kN/element | Weight kg/pce |
|---|----------------|------------|--------|-------------|--|---------------|
| | | | | mm | | |
|  | for high loads | ESPFGFHL | SPH F | 41 - 100 | 37.3 | 11.010 |
| | | ESPFGFHLPM | SPH F± | 41 - 100 | 37.3 | 11.770 |

Please specify the exact joint width when ordering (41 - 60 mm, 61 - 80 mm, 81 - 100 mm).

Egcopal SP impact sound insulated shear force dowel for precast element

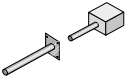
WG: 279

| | Description | Item No. | Type | Joint width | max. load capacity V_{Rd} up to kN/element | Weight kg/pce |
|---|------------------|----------|-------|-------------|--|---------------|
| | | | | mm | | |
|  | for normal loads | ESPFKF | SP F | 0 - 40 | 37.3 | 5.240 |
| | | ESPFGF | SP F | 41 - 100 | 34.9 | 5.710 |
| | | ESPFKFPM | SP F± | 0 - 60 | 37.3 | 6.000 |
| | | ESPFGFPM | SP F± | 61 - 100 | 27.7 | 7.070 |

Please specify the exact joint width when ordering. (Type SP O with KF Small joint 0 - 20 mm, 21 - 40 mm. Type SP O with GF Large joint 41 - 60 mm, 61 - 80 mm, 81 - 100 mm. Type SP O+- with KF Small joint 0 - 20 mm, 21 - 40 mm, 41 - 60 mm. Type SP O+- with GF Large joint 61 - 80 mm, 81 - 100 mm).

Egcopal SP light impact sound insulated shear force dowel for precast element


WG: 279

| | Description | Item No. | Type | Joint width | max. load capacity V_{Rd} up to kN/element | Weight kg/pce |
|---|-------------------------|----------|------------|-------------|--|---------------|
| | | | | mm | | |
|  | for low to medium loads | ESPLF | SP light F | 0 - 60 | 37.3 | 4.150 |

Please specify the exact joint width when ordering (0 - 20 mm, 21 - 40 mm, 41 - 60 mm). A type static analysis is available for Egcopal SP light.

Fire protection collar

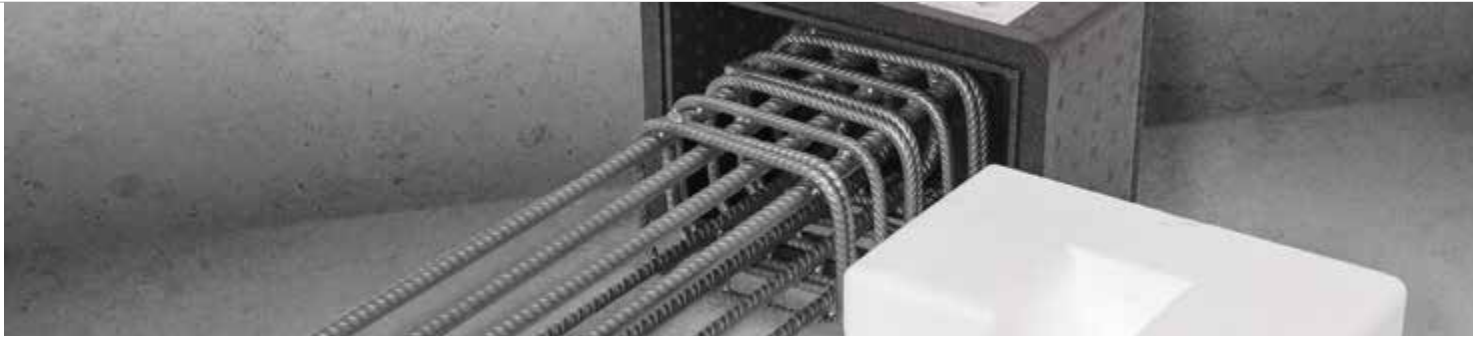
WG: 119

| | Description | Item No. | Joint width |
|---|--|-------------------|-------------|
| | | | mm |
|  | Fire protection collar F120/R120 for Egcopal Ø 52 mm | EDBRAND20E-PALSPH | 20 |
| | Fire protection collar F120/R120 for Egcopal Ø 32 mm | EDBRAND20E-PAL | 20 |

Ordering code

Example: **ESPFGFPM**

| Article | Product generation | Application area | Max. joint width | Load level | Load action |
|---------------------|--------------------|------------------------------------|---------------------------------------|------------------------|--|
| E Egcopal | SP | O In-situ concrete construction | KF Small joint 60 mm | - Standard | - Standard |
| | | F Precast construction | GF Large joint \geq 61 mm | HL High loads | PM PlusMinus for lifting loads |
| | | | | XL Extra-high loads | |



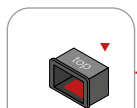
Egcosono stair landing bearing

The requirements for sound insulation in buildings are regulated in country-specific sound insulation standards. The Egcosono landing support effectively reduces unwanted impact sound transmission in the stairwell by acoustically decoupling the landing, supporting it and consistently separating it from other building components.

★ Advantages

- Impact sound properties tested in an accredited test laboratory according to DIN 7396
- Type testing on the basis of EC2
- For in-situ concrete/precast landings
- Load-bearing capacity $V_{Rd} = 87.4 \text{ kN}$
- Fire resistance rating R90

Precast element



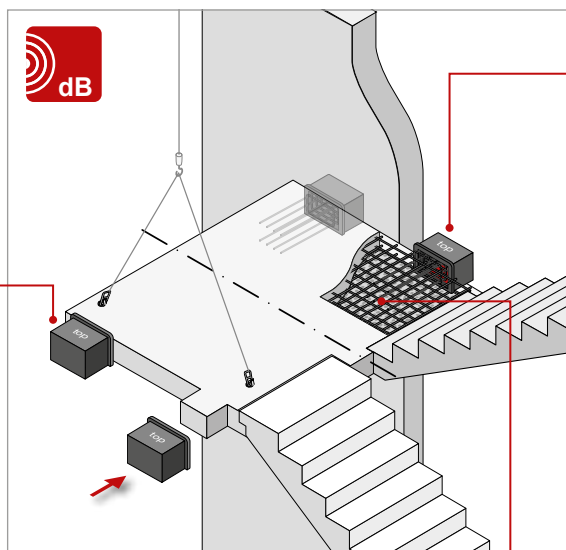
Egcosono SP F



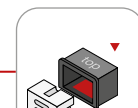
Egcosono SPV F



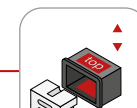
Egcosono SPH F



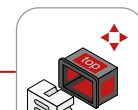
In-situ concrete



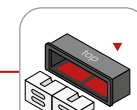
Egcosono SP O



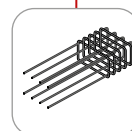
Egcosono SPV O



Egcosono SPH O






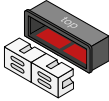
Egcosono SPL O



Egcosono reinforcement cage

Egcosono stair landing bearing for in-situ concrete stair landings




WG: 280

| | Description | Item No. | Type | Height mm | Width mm | Depth mm | Packaging unit Pcs | Weight kg/pce |
|---|---|----------|---------|--------------|-------------|-------------|--------------------------|------------------|
|  | In-situ concrete construction with fixing body | ESONOSP | SP O | 158 | 252 | 150.00 | 2 | 0.75 |
|  | | ESONOSPV | SP V± O | 158 | 252 | 150.00 | 2 | 0.86 |
|  | | ESONOSPH | SP H± O | 158 | 252 | 150.00 | 2 | 1.09 |
|  | In-situ concrete construction method with mounting body, long version | ESONOSPL | SP L O | 158 | 504 | 150.00 | 1 | 1.49 |

All dimensions are inside dimensions.

Egcosono stair landing bearing for precast landings

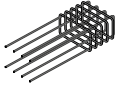
WG: 280

| | Description | Item No. | Type | Height mm | Width mm | Depth mm | Packaging unit Pcs | Weight kg/pce |
|---|--|----------|---------|--------------|-------------|-------------|--------------------------|------------------|
|  | Precast construction without fixing body | ESONFSP | SP F | 158 | 252 | 150.00 | 2 | 0.64 |
|  | | ESONFSPV | SP V± F | 158 | 252 | 150.00 | 2 | 0.75 |
|  | | ESONFSPH | SP H± F | 158 | 252 | 150.00 | 2 | 0.98 |

All dimensions are inside dimensions.

Egcosono reinforcement cage

WG: 280

| | Description | Item No. |
|---|--|----------|
|  | Standard cage consisting of 4 push-in stirrups and 5 shear force stirrups to achieve maximum load-bearing capacity | ESONBEP |

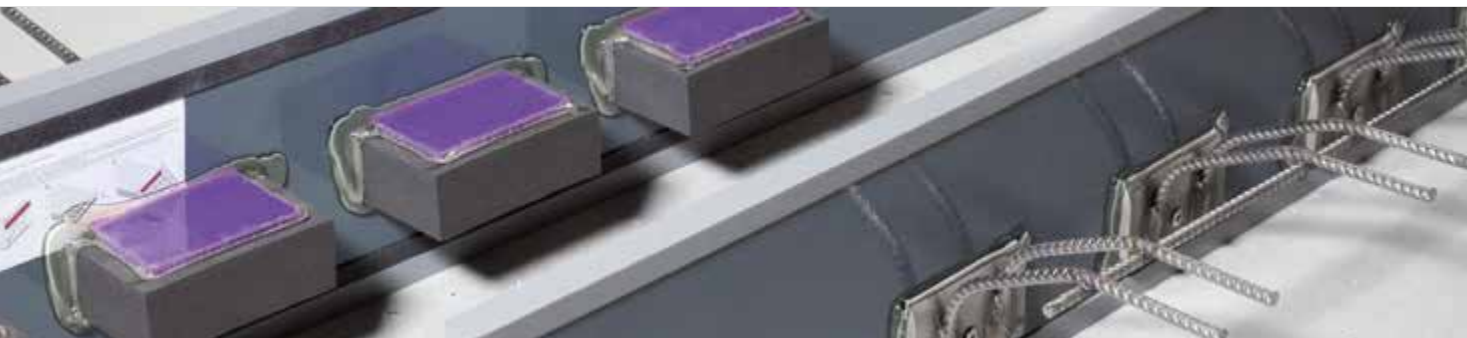
Type overview

| | | In-situ concrete landings | | | | Precast element landings | | |
|---|---------------------|---------------------------|--------------|--------------|--------|--------------------------|--------------|--------------|
| | | | | | | | | |
| Type | | SP O | SP V± O | SP H± O | SP L O | SP F | SP V± F | SP H± F |
| Direction of load | | ▼ | ▲ ▼ | ◆ | ▼ | ▲ ▼ | ◆ | |
| max. load capacity V _{Rd} up to | [kN/Element] ▲ ▼ | 87.4 | 87.4 / -23.8 | 87.4 / -23.8 | 174.8 | 87.4 | 87.4 / -23.8 | 87.4 / -23.8 |
| max. load capacity H _{Rd} up to | [kN/Element] ◀▶ | - | - | ± 23,8 | - | - | - | ± 23,8 |
| Stair landing thick- ness | [mm] | ≥ 160 | | | | | | |

Ordering code

Example: **ESONOSPV**

| Article | Application area | Product generation | Load direction | Version |
|-------------------------|---|--------------------|--|--|
| ESON Egcosono | O In-situ concrete construc- tion | SP | - ↓ vertically (downwards) | Standard Height x width x depth 158 x 252 x 150 mm |
| | | | V ↕ vertically (down and up) | Standard Height x width x depth 158 x 252 x 150 mm |
| | H ↕↔ | | Standard Height x width x depth 158 x 252 x 150 mm | |
| | F Precast construction | | L (long version) Height x width x depth 158 x 504 x 150 mm | |

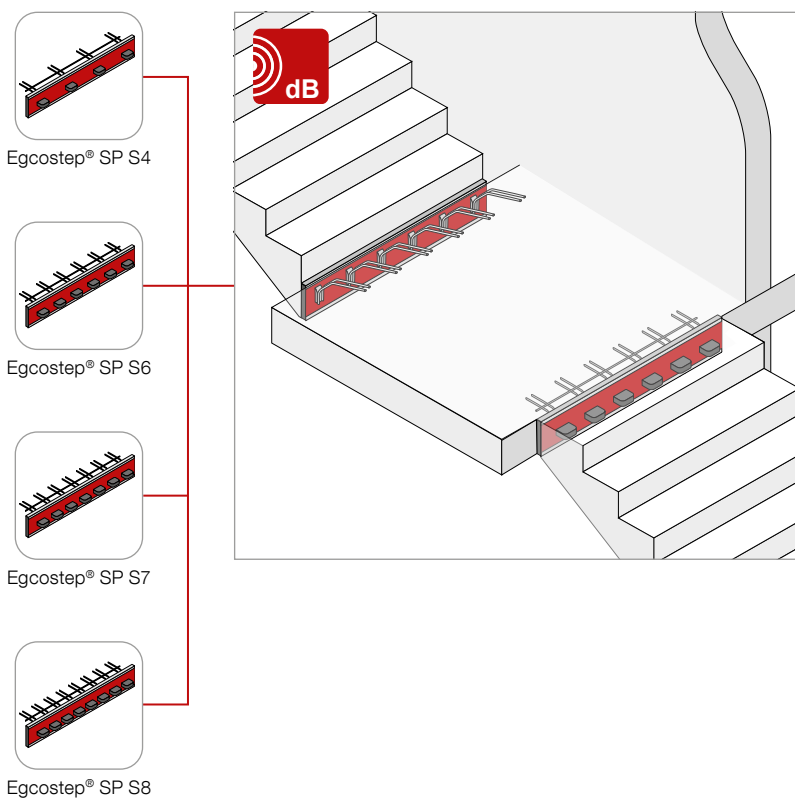


Egcostep® stair flight decoupling

Safe load transfer and high requirements for sound insulation are the challenges when installing concrete stairs. Egcostep® acoustically separates the flight of stairs from the landing and reduces impact sound transmission in the stairwell.

✦ Advantages

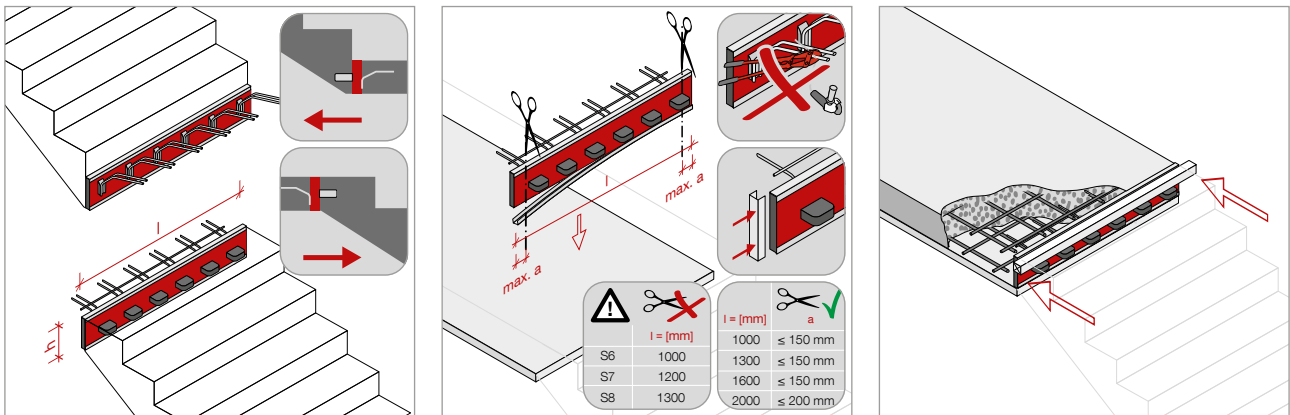
- Impact sound properties tested in an accredited test laboratory according to DIN 7396
- In-situ concrete/precast element execution
- Fire resistance rating R90
- Type testing on the basis of EC2



Egcostep® stair flight decoupling

| | Item No. | Type | Length mm | Height mm | max. load capacity V_{Rd} up to kN/element | Weight kg/pce |
|--|--------------|-------|--------------|--------------|--|------------------|
| | ESTSP4100160 | SP S4 | 1000 | 160 | 34.8 | 4.59 |
| | ESTSP4100180 | SP S4 | 1000 | 180 | 34.8 | 4.77 |
| | ESTSP4100200 | SP S4 | 1000 | 200 | 34.8 | 5.05 |
| | ESTSP4100220 | SP S4 | 1000 | 220 | 34.8 | 5.38 |
| | ESTSP4130200 | SP S4 | 1300 | 200 | 34.8 | 5.48 |
| | ESTSP4130220 | SP S4 | 1300 | 220 | 34.8 | 5.69 |
| | ESTSP6100180 | SP S6 | 1000 | 180 | 52.2 | 6.45 |
| | ESTSP6100200 | SP S6 | 1000 | 200 | 52.2 | 6.69 |
| | ESTSP6100220 | SP S6 | 1000 | 220 | 52.2 | 7.01 |
| | ESTSP6130180 | SP S6 | 1300 | 180 | 52.2 | 6.85 |
| | ESTSP6130200 | SP S6 | 1300 | 200 | 52.2 | 7.03 |
| | ESTSP6130220 | SP S6 | 1300 | 220 | 52.2 | 7.24 |
| | ESTSP6130250 | SP S6 | 1300 | 250 | 52.2 | 7.52 |
| | ESTSP7120200 | SP S7 | 1200 | 200 | 60.9 | 7.28 |
| | ESTSP7120220 | SP S7 | 1200 | 220 | 60.9 | 8.05 |
| | ESTSP8130200 | SP S8 | 1300 | 200 | 69.9 | 8.67 |
| | ESTSP8130220 | SP S8 | 1300 | 220 | 69.9 | 8.88 |

Units can be shortened on each side by 150 mm. Exceptions: S6 $l = 1000$ mm, S7 $l = 1200$ mm, S8 $l = 1300$ mm. Other types and dimensions on request. Please state type, length and height in mm. Heavy loads possible on request.


Ordering code
Example: ESTSP4130200

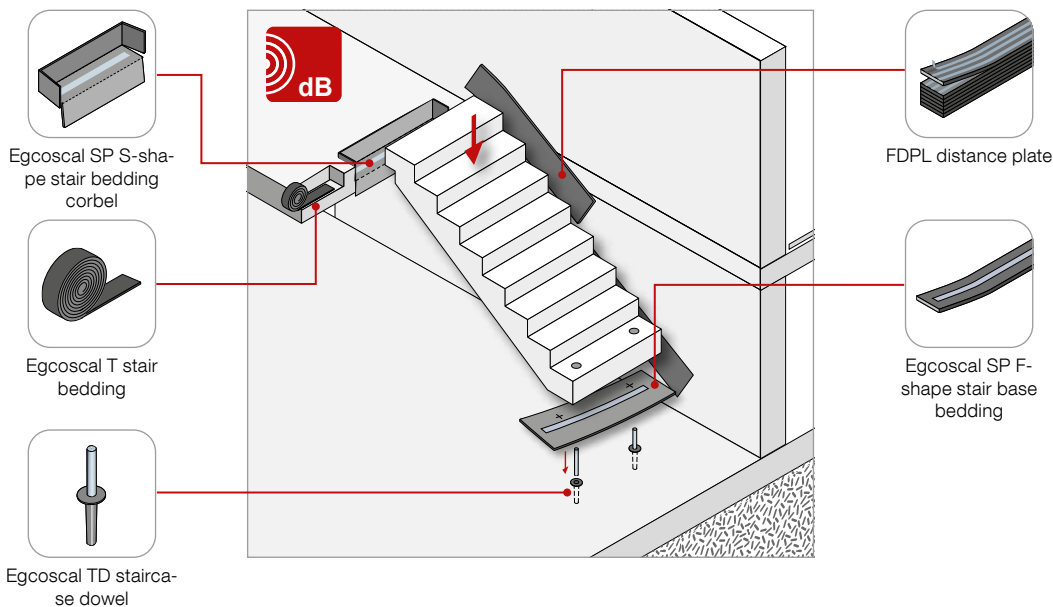
| Article | Product generation | Number of bearings | Length | Height | |
|------------------------|--------------------|--------------------|----------------------|--------------------------------------|------------------|
| EST Egcostep | SP | 4 | 100 = 1000 mm | 160 mm 180 mm 200 mm 220 mm | |
| | | | 130 = 1300 mm | 200 mm 220 mm | |
| | | | 100 = 1000 mm | 180 mm 200 mm 220 mm | |
| | | | 130 = 1300 mm | 180 mm 200 mm 220 mm 250 mm | |
| | | 6 | 120 = 1200 mm | 200 mm 220 mm | |
| | | | 7 | 130 = 1300 mm | 200 mm 220 mm |
| | | | | 8 | 130 = 1300 mm |

Egcoscal stair beddings

The Egcoscal building acoustics system decouples the prefabricated stair flight from the landing over the entire surface and demonstrably reduces impact sound transmission. In addition to sound insulation in the area of the concrete stairs, the Egcoscal system also supports positional stability in the stair flight connection. The matching spacer plates protect the joints from dirt and reduce sound transmission to the staircase wall.

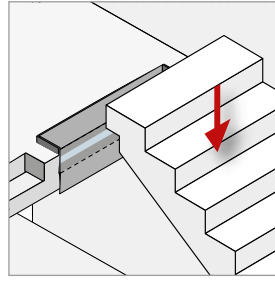
Advantages

- Impact sound properties tested in an accredited test laboratory according to DIN 7396 (S-shape, F-shape and FDPL)
- Bearings can be selected in two load levels
- Fire resistance rating F90



Egcoscal stair bedding - S-shape

- Impact sound properties tested in an accredited test laboratory according to DIN 7396
- For acoustic decoupling between prefabricated staircase and landing
- Can be adapted to the installation conditions on site



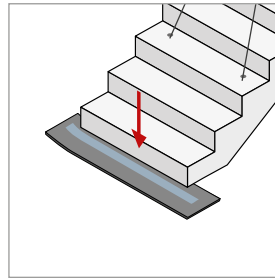
WG: 280

| Item No. | Type | Length | Thickness | Max. load-bearing capacity V_{Rd} kN/m | Weight kg/pce |
|--------------|-------------|--------|-----------|---|------------------|
| | | mm | mm | | |
| ESCALSPS1001 | SP S1000-43 | 1000 | 15 | 43 | 0.85 |
| ESCALSPS1002 | SP S1000-61 | 1000 | 15 | 61 | 0.91 |
| ESCALSPS1101 | SP S1100-43 | 1100 | 15 | 43 | 0.95 |
| ESCALSPS1102 | SP S1100-61 | 1100 | 15 | 61 | 1.01 |
| ESCALSPS1201 | SP S1200-43 | 1200 | 15 | 43 | 1.03 |
| ESCALSPS1202 | SP S1200-61 | 1200 | 15 | 61 | 1.11 |
| ESCALSPS1301 | SP S1300-43 | 1300 | 15 | 43 | 1.12 |
| ESCALSPS1302 | SP S1300-61 | 1300 | 15 | 61 | 1.20 |
| ESCALSPS1501 | SP S1500-43 | 1500 | 15 | 43 | 1.29 |
| ESCALSPS1502 | SP S1500-61 | 1500 | 15 | 61 | 1.39 |

Other lengths and loads on request.

Egcoscal stair bedding - F-shape

- Impact sound properties tested in an accredited test laboratory according to DIN 7396
- For acoustic decoupling between prefabricated staircase and floor slab
- Can be adapted to the installation conditions on site



WG: 280

| Item No. | Type | Length | Width | Thickness | Max. load-bearing capacity V_{Rd} kN/m | Weight kg/pce |
|--------------|-------------|--------|-------|-----------|---|------------------|
| | | mm | mm | mm | | |
| ESCALSPF1001 | SP F1000-43 | 1000 | 500 | 15 | 43 | 1.40 |
| ESCALSPF1002 | SP F1000-61 | 1000 | 500 | 15 | 61 | 1.46 |
| ESCALSPF1101 | SP F1100-43 | 1100 | 500 | 15 | 43 | 1.55 |
| ESCALSPF1102 | SP F1100-61 | 1100 | 500 | 15 | 61 | 1.61 |
| ESCALSPF1201 | SP F1200-43 | 1200 | 500 | 15 | 43 | 1.69 |
| ESCALSPF1202 | SP F1200-61 | 1200 | 500 | 15 | 61 | 1.76 |
| ESCALSPF1301 | SP F1300-43 | 1300 | 500 | 15 | 43 | 1.83 |
| ESCALSPF1302 | SP F1300-61 | 1300 | 500 | 15 | 61 | 1.91 |
| ESCALSPF1501 | SP F1500-43 | 1500 | 500 | 15 | 43 | 2.12 |
| ESCALSPF1502 | SP F1500-61 | 1500 | 500 | 15 | 61 | 2.21 |

Other lengths and loads on request.

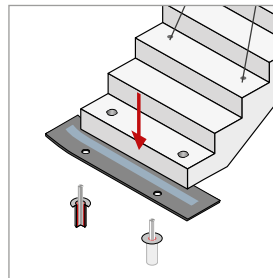
Ordering code

Example: **ESCALSPS1002**

| Article | Product generation | Staircase support variant | Length | Load level |
|--------------------------|--------------------|---|--|----------------------------|
| ESCAL Egcoscal | SP | S-Form for impact sound decoupling between prefabricated staircase and landing | 100 = 1000 mm 110 = 1100 mm 120 = 1200 mm 130 = 1300 mm 150 = 1500 mm | 1 = 43 kN 2 = 61 kN |
| | | F-Form for impact sound decoupling between prefabricated staircase and floor slab | 100 = 1000 mm 110 = 1100 mm 120 = 1200 mm 130 = 1300 mm 150 = 1500 mm | 1 = 43 kN 2 = 61 kN |

Egcoscal TD staircase dowel

- Impact sound decoupling element for structural positional stability
- Stainless steel version
- Secure into position with Egcoscal F-Form

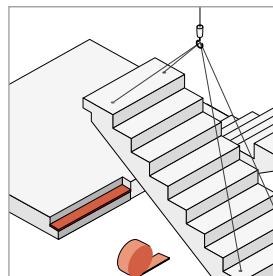


WG: 280

| Item No. | Execution | Diameter | Length | max. load capacity V_{Rd} up to kN/element | Weight kg/pce |
|----------|-----------------|----------|--------|--|------------------|
| | | mm | mm | | |
| LATLTD22 | Stainless steel | 22 | 300 | 11.5 | 2.19 |

Egcoscal T stair bedding

- Stair bedding for precast concrete staircases
- Strip bearing made of an elastomer that is specially adapted to the application
- Rolled goods

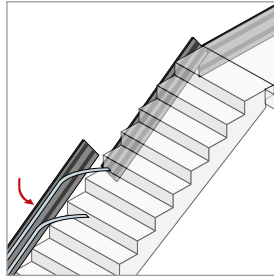


WG: 280

| Item No. | Length | Width | Thickness | Design value of compressive stress N/mm^2 |
|----------|--------|-------|-----------|--|
| | mm | mm | mm | |
| LATLTR | 10000 | 100 | 10 | $\leq 0,6$ |

FDPL distance plate

- Use in the installation of stair flights and stair landings
- Avoid sound bridges and contribute to structure-borne sound decoupling
- Distance plates secure the joints and prevent soiling
- Volume weight: $30 \pm 4 \text{ kg/m}^3$
- Fire protection: Class E according to DIN EN 13501-1/building material class B2 according to DIN 4102-01



WG: 280

| Description | Item No. | Length mm | Width mm | Thickness mm |
|---|-----------|--------------|-------------|-----------------|
| FDPL distance plate, incl. pre-applied double-sided adhesive tape | FDPL15250 | 1000 | 250 | 15 |
| | FDPL15355 | 1000 | 355 | 15 |
| | FDPL15420 | 1000 | 420 | 15 |

FDPL distance plate in a set

WG: 280

| Description | Item No. | Length mm | Width mm | Thickness mm |
|--|----------|--------------|-------------|-----------------|
| 15 FDPL distance plates, incl. pre-applied double-sided adhesive tape and cutter knife | FDPLSETS | 1000 | 250 | 15 |
| | FDPLSET | 1000 | 355 | 15 |
| | FDPLSETL | 1000 | 420 | 15 |

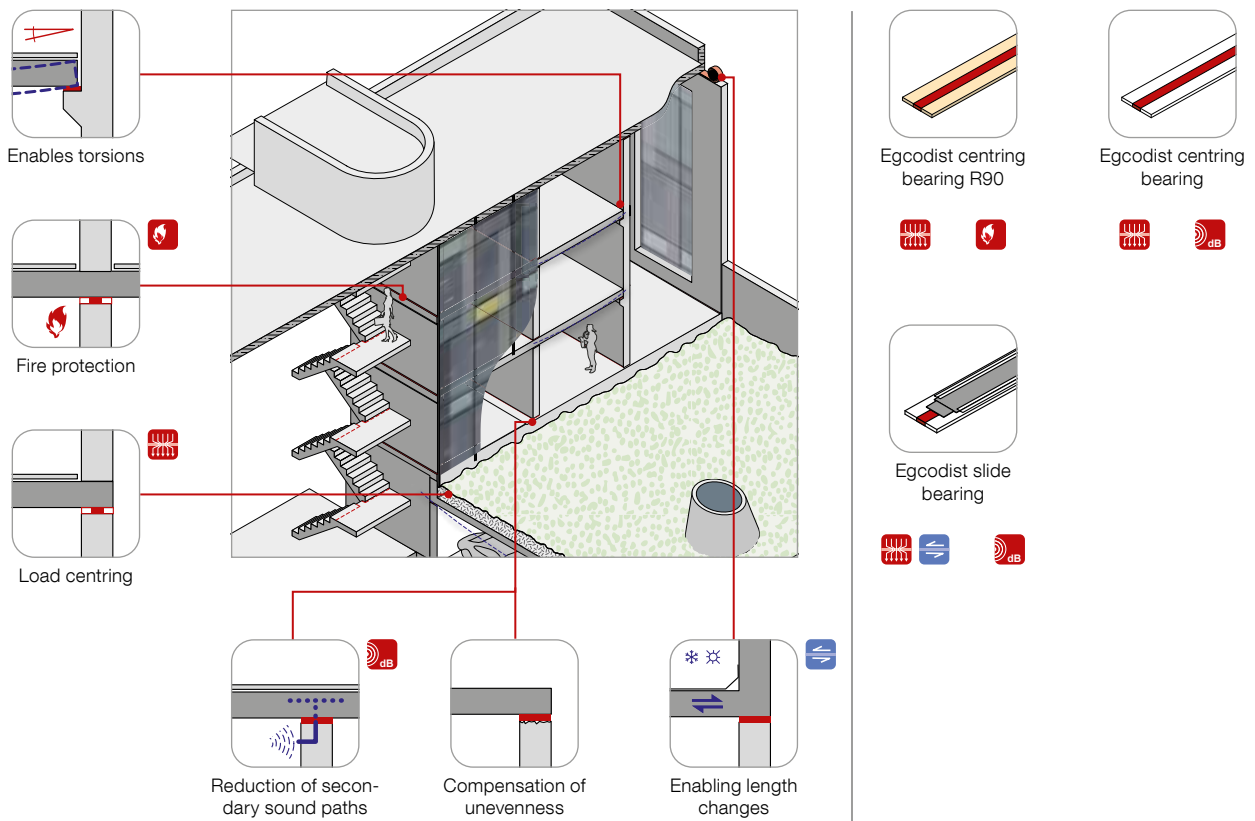


Egcodist wall and floor bearings

Use the advantages of wall and floor bearings to avoid building damages. The targeted load centring prevents spalling due to rotation of the floor bearing. According to DIN 18530, an intermediate layer must be added to accommodate these deformations. The Egcodist construction bearing range from MAX FRANK fulfils these requirements. This means planning security for the user and a permanently intact wall / ceiling butt-joint for the client.

Advantages


- Load centring
- Allows length changes and angular rotations
- Compensation of unevenness
- Reduction of secondary sound paths
- Fire resistance



Egcodist C R90

WG: 285

- Centring core strip bearing laid on smoothed mortar, defines load eccentricities
- Absorption of angular displacements
- Absorption of small horizontal movements due to shear deformation of the core strip element
- Centring bearings with fire resistance rating F90


| | Item No. | Length | Width | Height | Core strip width | Design value linear load | Permissible horizontal movement | Packaging unit |
|---|------------------|--------|-------|--------|------------------|--------------------------|---------------------------------|----------------|
| | | m | mm | mm | mm | kN/m | mm | Pcs |
|  | EDISTC1050175R90 | 1.20 | 175 | 10 | 50 | 140 | ± 4,8 | 5 |
| | EDISTC1050240R90 | 1.20 | 240 | 10 | 50 | 140 | ± 4,8 | 5 |
| | EDISTC1060175R90 | 1.20 | 175 | 10 | 60 | 210 | ± 4,8 | 5 |
| | EDISTC1060240R90 | 1.20 | 240 | 10 | 60 | 210 | ± 4,8 | 5 |

Special widths available on request.

Egcodist C

WG: 285

- Centring bearing
- Centring core strip bearing laid on smoothed mortar, defines load eccentricities
- Absorption of angular displacements
- Absorption of small horizontal movements due to shear deformation of the core strip element


| | Item No. | Length | Width | Height | Core strip width | Design value linear load | Permissible horizontal movement | Packaging unit |
|---|----------------|--------|-------|--------|------------------|--------------------------|---------------------------------|----------------|
| | | m | mm | mm | mm | kN/m | mm | Pcs |
|  | EDISTC05175075 | 1.00 | 175 | 5 | 25 | 105 | ± 2,0 | 10 |
| | EDISTC05175150 | 1.00 | 175 | 5 | 50 | 210 | ± 2,0 | 10 |
| | EDISTC05240075 | 1.00 | 240 | 5 | 25 | 105 | ± 2,0 | 10 |
| | EDISTC05240150 | 1.00 | 240 | 5 | 50 | 210 | ± 2,0 | 10 |
| | EDISTC10175100 | 1.00 | 175 | 10 | 40 | 140 | ± 4,8 | 10 |
| | EDISTC10175150 | 1.00 | 175 | 10 | 50 | 210 | ± 4,8 | 10 |
| | EDISTC10240100 | 1.00 | 240 | 10 | 40 | 140 | ± 4,8 | 10 |
| | EDISTC10240150 | 1.00 | 240 | 10 | 50 | 210 | ± 4,8 | 10 |

Special widths available on request.

Egcodist CG

WG: 285

- Centring bearing with permanent sliding function
- Core strip/centring slide bearings laid on smoothed mortar surface/ring anchor
- Absorption of horizontal movements without time limits, e.g. due to temperature differences, size of horizontal movement limited to 1/3 of the core strip width
- Absorption of angular displacements

| | Item No. | Length | Width | Height | Core strip width | Design value linear load | Permissible horizontal movement | Packaging unit |
|---|-----------------|--------|-------|--------|------------------|--------------------------|---------------------------------|----------------|
| | | m | mm | mm | mm | kN/m | mm | Pcs |
|  | EDISTCG05175075 | 1.00 | 175 | 5 | 25 | 105 | ± 8,0 | 10 |
| | EDISTCG05175150 | 1.00 | 175 | 5 | 50 | 210 | ± 16,0 | 10 |
| | EDISTCG05240075 | 1.00 | 240 | 5 | 25 | 105 | ± 8,0 | 10 |
| | EDISTCG05240150 | 1.00 | 240 | 5 | 50 | 210 | ± 16,0 | 10 |
| | EDISTCG10175100 | 1.00 | 175 | 10 | 40 | 140 | ± 13,0 | 10 |
| | EDISTCG10175150 | 1.00 | 175 | 10 | 50 | 210 | ± 16,0 | 10 |
| | EDISTCG10240100 | 1.00 | 240 | 10 | 40 | 140 | ± 13,0 | 10 |
| | EDISTCG10240150 | 1.00 | 240 | 10 | 50 | 210 | ± 16,0 | 10 |

Special widths available on request.

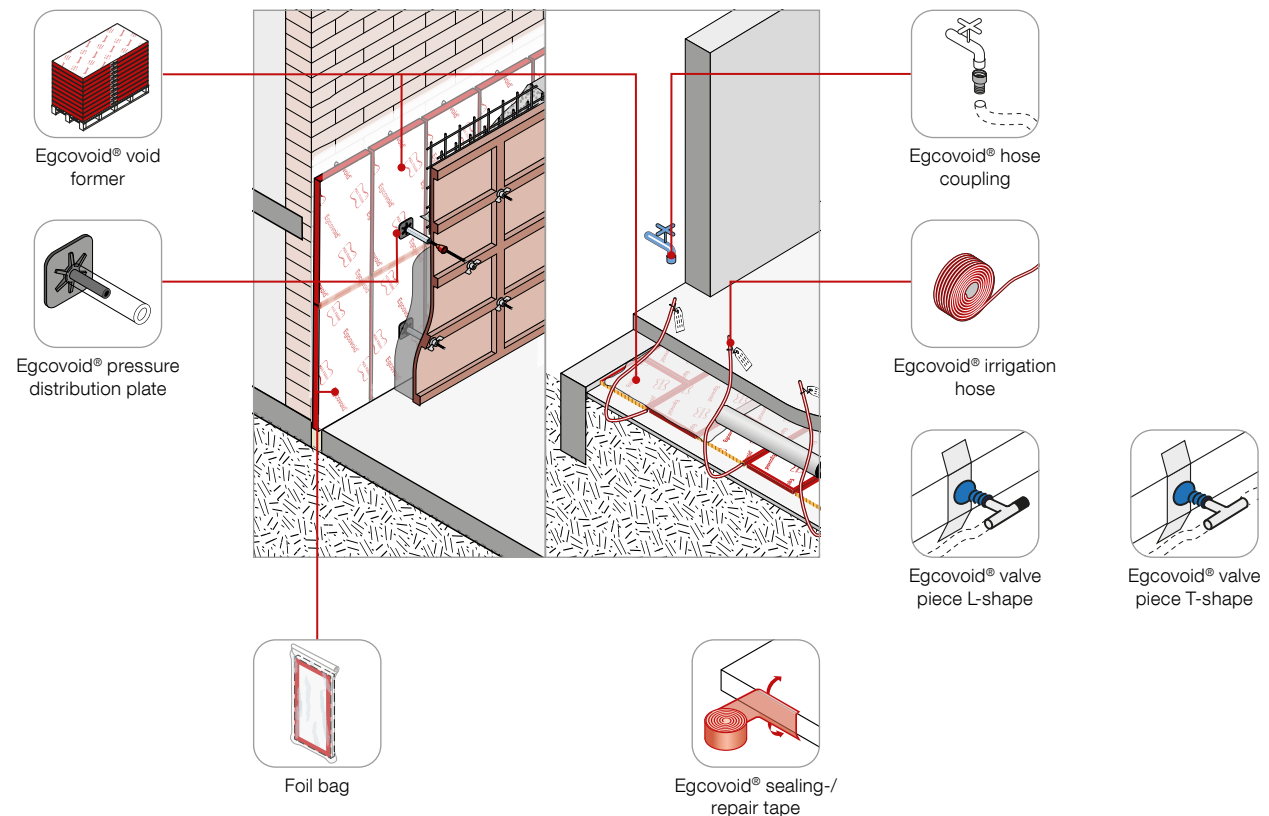


Egcovoid® void former

The Egcovoid® void former creates a load-free separation layer. Load activations are required, especially in the event of incalculable forces, to produce a targeted load transmission. Vibration decoupling or statically unique load situations are possible with the Egcovoid® void former at a desired time.

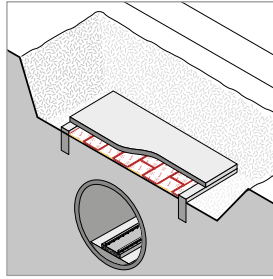
★ Advantages

- Targeted load application for pile foundations
- Targeted load of the sub-base through the floor slab in underground structures
- Vertical separating layer to existing foundations
- Vertical void between an existing building wall and a new building wall
- Expansion space for swelling soils



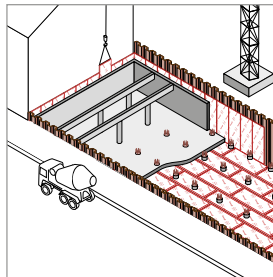
Load release on underground structural elements

In order to protect existing structures (tunnel, sewers, etc.) against the load of a new building situated above them, a load-free layer can be created at a clearly defined time between the existing construction and the new building using the Egcovoid® void former. The structures are statically isolated from each other.



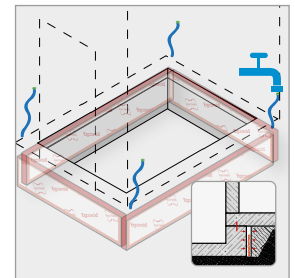
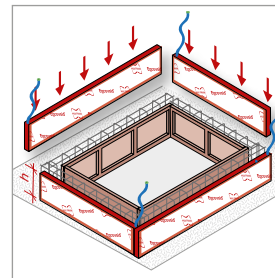
Acoustic decoupling of common walls

To statically and acoustically separate an existing wall from a newly built wall, an air gap can be created using the Egcovoid® void former through the subsequent removal of the plate. As opposed to permanent formwork with perimeter insulation, a sound bridge and static influence can be ruled out when a void former is used.



Vertical foundation decoupling

In order to protect an existing structure against horizontal shear forces in the foundation area or to achieve the separation of components in order, for example, to create an expansion joint, a vertical soft layer can be created in the joint with the aid of the Egcovoid® void former, especially if a foundation and the base slab above it are subsequently to be concreted in one casting. No shear forces are transmitted from the base slab via the foundation into the existing structure, as the Egcovoid® void former forms a static hollow space after watering.



Egcovoid® void former

WG: 112

| Description | Item No. | Length mm | Width mm | Height mm | Weight kg/pce |
|--|-------------|-----------|----------|-----------|---------------|
| Egcovoid® void former with moisture protection | EV SPL035FS | 2400 | 1200 | 35 | 5.76 |
| | EV SPL050FS | 2400 | 1200 | 50 | 7.63 |
| | EV SPL100FS | 2400 | 1200 | 100 | 12.50 |



Custom-made products on request.

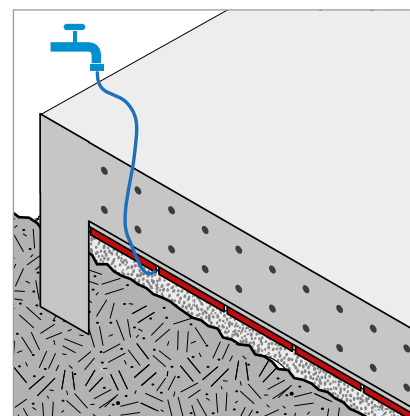
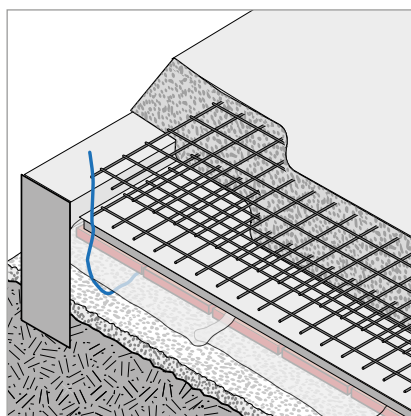
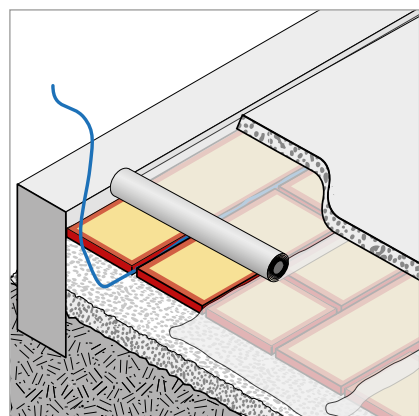
Egcovoid® void former - components

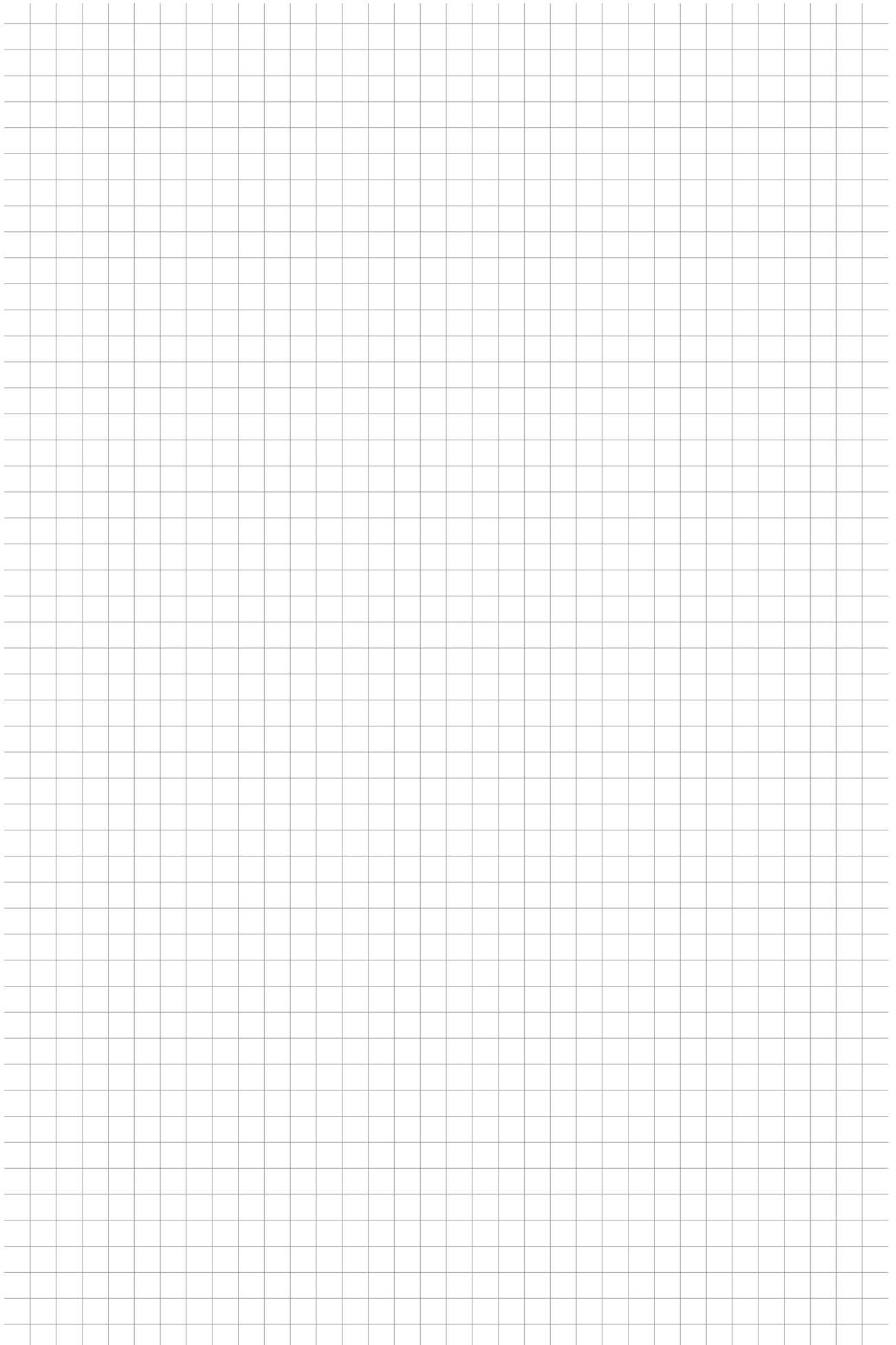
WG: 112

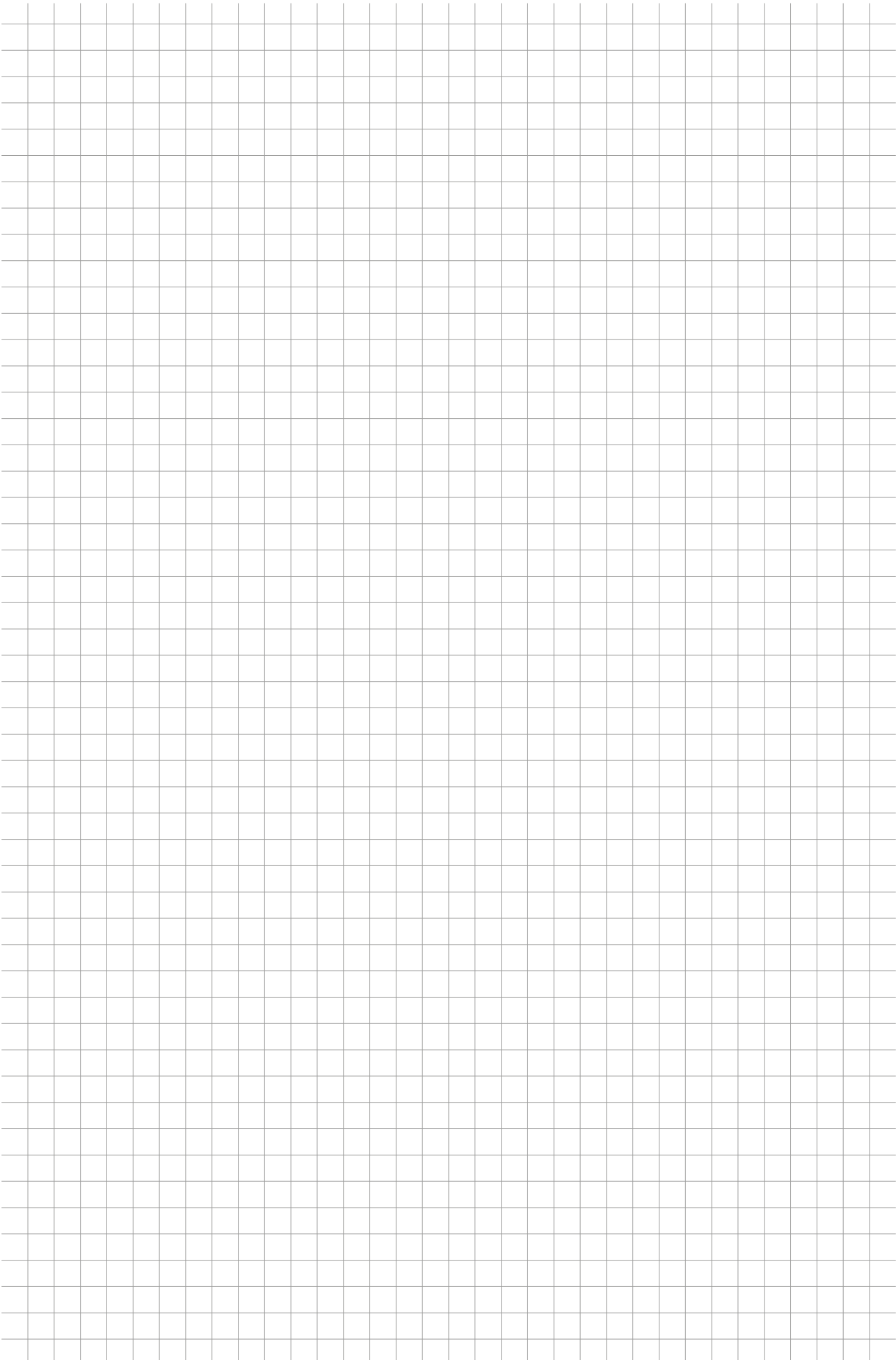
| Description | Item No. | Weight kg/pce |
|---|-----------|---------------|
| Valve piece, T-form for hose/plate connection | FXVENTILT | 0.01 |
| Valve piece, L-form for hose/plate connection | FXVENTILL | 0.01 |
| Hose coupling/claw coupling incl. marking label | FXKUPPLU | 0.09 |
| Pressure distribution plate on distance tubes | EV SPLDV | 0.06 |
| Film hose for wall mounting or additional moisture protection, width 1.28 or 1.35 m | FXPFOLIE | - |

WG: 112

| | Description | Item No. | Length m | Width mm |
|---|---|-----------|----------|----------|
|  | Irrigation hose | YFXPSETZS | 25.00 | - |
|  | Sealing and repair tape for plate heights 35 mm and 50 mm | EVKB100 | 33.00 | 100 |
| | Sealing and repair tape for plate height 100 mm | EVKB150 | 33.00 | 150 |









**BUILDING
COMMON GROUND**



MAX FRANK Group

Headquarters:

Max Frank GmbH & Co. KG

Mitterweg 1

94339 Leiblfing

Germany

www.maxfrank.com

