

# Product Verification

## Sustainability

Self declared according to LEED Building Design and Construction V4 (2015)

### ■ Product Systems

#### Sub-structure waterproofing system Zemseal®

Max Frank GmbH & Co. KG

Construction seal with high quality usage of basements

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.

<https://www.maxfrank.com/intl-de/produkte/dichtungstechnik/o6-frischbetonverbund-system-zemseal/>



## Product Assessment

### Materials and Resources

| Criteria  | Product Verification |
|---|----------------------|
| MR Credit Life-Cycle Impact Reduction - Option 4: Whole-Building Life-Cycle Assessment              | EPD available: No    |
| MR Credit BPDO - Environmental Product Declaration - Option 1: Environmental Product Declaration    | 0 % weighted value   |
| MR Credit BPDO - Environmental Product Declaration - Option 2: Multi-Attribute Optimization         | 0 % weighted value   |
| MR Credit BPDO - Sourcing of Raw Materials - Option 1: Raw Material Source and Extraction Reporting | 0 % weighted value   |
| MR Credit BPDO - Sourcing of Raw Materials - Option 2: Leadership Extraction Practices              | 0 % weighted value   |
| MR Credit BPDO - Material Ingredients - Option 1: Material Ingredient Reporting                     | 0 % weighted value   |
| MR Credit BPDO - Material Ingredients - Option 2: Material Ingredient Optimization                  | 100 % weighted value |
| MR Credit BPDO - Material Ingredients - Option 3: Product Manufacturer Supply Chain Optimization    | 0 % weighted value   |
| Location Valuation Factor   | No                   |

### Indoor Environmental Quality

| Criteria   | Product Verification |
|--|----------------------|
| EQ Credit Low-Emitting Materials (except Healthcare and Schools) | N/A                  |

Legend: yes = Product contributes toward satisfying the credit, N/A = Product not relevant in the credit, no = Credit requirements are not proven

## Summary

### The product contributes to the certification:

- The product has an Environmental Product Declaration (EPD), which can be used to calculate the building life cycle assessment under LEED MR Building Life-Cycle Impact Reductions - Option 4: Whole-Building Life-Cycle Assessment: EPD available: No
- Weighted Product Value on Credit BPDO - Environmental Product Declaration - Option 1: Environmental Product Declaration: 0 % weighted value

- Weighted Product Value on Credit BPDO - Environmental Product Declaration - Option 2: Multi-Attribute Optimization: 0 % weighted value
- Weighted Product Value on Credit BPDO - Sourcing of Raw Materials - Option 1: Raw Material Source and Extraction Reporting: 0 % weighted value
- Weighted Product Value on Credit BPDO - Sourcing of Raw Materials - Option 2: Leadership Extraction Practices: 0 % weighted value
- Weighted Product Value on Credit BPDO - Material Ingredients - Option 1: Material Ingredient Reporting: 0 % weighted value
- Weighted Product Value on Credit BPDO - Material Ingredients - Option 2: Material Ingredient Optimization: 100 % weighted value
- Weighted Product Value on Credit BPDO - Material Ingredients - Option 3: Supply Chain Optimization: 0 % weighted value
- Information for Location Valuation Factor is available: No

## ■ Product Properties

### Ingredients:

|   |         |
|---|---------|
| SVHC according REACH < 0,1 %:   | Yes     |
| Free (< 0,1 %) of biocidal:   | Yes     |
| Free (< 0,1 %) of chlorinated paraffins (= CP inkl. SCCP, MCCP, LCCP):                  | Yes     |
| Free (< 0,1 %) of polybrominated diphenyl ethers (= PBDE):                              | Yes     |
| Free (< 0,1 %) of polybrominated biphenyls (= PBB):                                     | Yes     |
| Free (< 0,1 %) of hexabromocyclododecane (= HBCD):                                      | Yes     |
| Free (< 0,1 %) of tris (2-carboxyethyl) phosphine (= TCEP):                             | Yes     |
| Free (< 0,1 %) of lead:   | Yes     |
| Free (< 0,1 %) of cadmium:  | Yes     |
| Free (< 0,1 %) of chromium-VI compounds:  | Yes     |
| Free of solvent according to VdL-RL01:  | Yes     |
| Free (< 0,1 %) of aromatic compounds:   | Yes     |
| Free (< 0,1 %) from halogenated propellants:  | Yes     |
| Free (< 0,1 %) of tin:  | Yes     |
| Free (< 0,1 %) of halogenated flame retardants:   | Yes     |
| Free (< 0,1 %) of halogens:   | Yes     |
| Content of solvents:  | 0 %     |
| Percentage of the product's composition, that is known to the chemical ingredient level | 100 wt% |
| Recycled content post-consumer:   | 0 wt%   |

|  |          |
|--|----------|
| Recycled content pre-consumer:                   | 0 wt%    |
| Free of plasticizer according to VdL-RL01:       | No       |
| Free (< 0,1 %) of hydrocarbon (KWS) plasticizer: | Yes      |
| Content of VOC:                                  | < 0,01 % |

### Manufacturer:

|  |     |
|--|-----|
| Environmental Management System according ISO 14001: | Yes |
| Are reverse logistics in place for the product?      | No  |

### Emissions:

|   |                           |
|---|---------------------------|
| Carcinogens 1A and 1B after 3 days according ISO-16000 / AgBB:  | 0 mg/m <sup>3</sup>       |
| Carcinogens 1A and 1B after 28 days according ISO-16000 / AgBB: | 0 mg/m <sup>3</sup>       |
| Formaldehyde emissions after 28 days according DIN EN 717-1:    | < 0,006 mg/m <sup>3</sup> |

### Life Cycle Assessment:

|                       |           |
|-----------------------|-----------|
| Functional use period | min. 50 a |
|-----------------------|-----------|

### Circularity:

|  |    |
|--|----|
| Has the product been designed for reuse, refurbishment or remanufacturing? | No |
| Is the product designed for a recycling of equal quality?                  | No |
| Product was designed with cycling in mind.                                 | No |
| Was the Product designed for emission or direct dispersal?                 | No |
| Was the product specifically designed for clean and rapid disassembly?     | No |
| Was the product designed for clean incineration?                           | No |

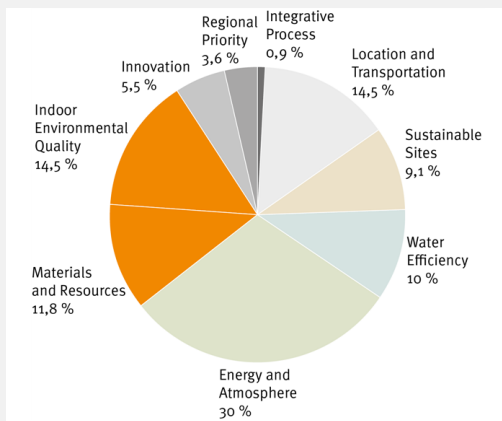
## System description

This verification is the evaluation and ranking of products in terms of the certification system LEED version 4 (Building Design and Construction). The USGBC (U.S. Green Building Council) generally does not certify products. Therefore the project team or the manufacturer is responsible to declare compliance with respect to the LEED criteria. Notice: This verification is generated by the Assessment Service of BMS. The distribution or publication by third parties is not permitted. The data sheet is not a LEED certification document. The information is based on the manufacturer's specifications. Despite a diligent treatment of all information BMS can not make any warranties about the completeness, reliability and accuracy of this information. The requirements of LEED can be interpreted differently and depend on the project and scope of application. Therefore, BMS cannot accept any liability for the evaluation in terms of the LEED criteria. The user of the data sheet, the user / purchaser of the product and the consultant / planner, who is advising on this product has the duty to check the product for the intended application at their own responsibility. When a new version of this product verification is produced, the previous version loses its validity.

Source: [www.usgbc.org](http://www.usgbc.org)

## System categories

### Category Weighting



### Category

### Category considered in product verification

|                                   |     |
|-----------------------------------|-----|
| Integrative Process (IP)          | No  |
| Location and Transportation (LT)  | No  |
| Sustainable Sites (SS)            | No  |
| Water Efficiency (WE)             | No  |
| Energy and Atmosphere (EA)        | No  |
| Materials and Ressources (MR)     | Yes |
| Indoor Environmental Quality (EQ) | Yes |
| Innovation (IN)                   | No  |
| Regional Priority (RP)            | No  |

Source: LEED v4 - New Construction

# Detailed Verification

Self declared according to LEED Building Design and Construction V4 (2015)

## Materials and Resources

### MR Credit Life-Cycle Impact Reduction - Option 4: Whole-Building Life-Cycle Assessment

The product has an Environmental Product Declaration (EPD), which can be used to calculate the building life cycle assessment under LEED MR Building Life-Cycle Impact Reductions - Option 4: Whole-Building Life-Cycle Assessment:

|   |                   |
|---|-------------------|
| Sub-structure waterproofing system Zemseal® | EPD available: No |
|---|-------------------|

An environmental product declaration exists for the product:

|   |    |
|---|----|
| Sub-structure waterproofing system Zemseal® | No |
|---|----|

### MR Credit BPDO - Environmental Product Declaration - Option 1: Environmental Product Declaration

Weighted Product Value on Credit BPDO - Environmental Product Declaration - Option 1: Environmental Product Declaration:

|   |                    |
|---|--------------------|
| Sub-structure waterproofing system Zemseal® | 0 % weighted value |
|---|--------------------|

An environmental product declaration exists for the product:

|   |    |
|---|----|
| Sub-structure waterproofing system Zemseal® | No |
|---|----|

### MR Credit BPDO - Environmental Product Declaration - Option 2: Multi-Attribute Optimization

Weighted Product Value on Credit BPDO - Environmental Product Declaration - Option 2: Multi-Attribute Optimization:

|   |                    |
|---|--------------------|
| Sub-structure waterproofing system Zemseal® | 0 % weighted value |
|---|--------------------|

An environmental product declaration exists for the product:

|   |    |
|---|----|
| Sub-structure waterproofing system Zemseal® | No |
|---|----|

### MR Credit BPDO - Sourcing of Raw Materials - Option 1: Raw Material Source and Extraction Reporting

Weighted Product Value on Credit BPDO - Sourcing of Raw Materials - Option 1: Raw Material Source and Extraction Reporting:

|   |                    |
|---|--------------------|
| Sub-structure waterproofing system Zemseal® | 0 % weighted value |
|---|--------------------|

There is a corporate sustainability reports (CSR) report from the manufacturer:

|   |    |
|---|----|
| Sub-structure waterproofing system Zemseal® | No |
|---|----|

■ MR Credit BPDO - Sourcing of Raw Materials - Option 2: Leadership Extraction Practices

Weighted Product Value on Credit BPDO - Sourcing of Raw Materials - Option 2: Leadership Extraction Practices:

|   |                    |
|---|--------------------|
| Sub-structure waterproofing system Zemseal® | 0 % weighted value |
|---|--------------------|

Extended producer responsibility

Content of materials for a closed-loop recycling or take-back program in the entire product:

|   |     |
|---|-----|
| Sub-structure waterproofing system Zemseal® | 0 % |
|---|-----|

Bio-based materials

Content of SAN-certified bio-based materials in the entire product:

|   |     |
|---|-----|
| Sub-structure waterproofing system Zemseal® | 0 % |
|---|-----|

Wood products

Content of FSC-certified wood-based materials in the entire product:

|   |     |
|---|-----|
| Sub-structure waterproofing system Zemseal® | 0 % |
|---|-----|

Materials reuse

Content of salvaged, refurbished, or reused products or materials in the entire product:

|   |     |
|---|-----|
| Sub-structure waterproofing system Zemseal® | 0 % |
|---|-----|

Recycled content

Creditable recycled content according to LEED for the entire product:

|   |     |
|---|-----|
| Sub-structure waterproofing system Zemseal® | 0 % |
|---|-----|

Postconsumer recycled content for the entire product:

|   |     |
|---|-----|
| Sub-structure waterproofing system Zemseal® | 0 % |
|---|-----|

Do you want to enter the recycled content for the entire product? Otherwise it will be automatically calculated from the components. If you do not have components for your product, we recommend that you enter the recycling percentage for the entire product here:

|   |     |
|---|-----|
| Sub-structure waterproofing system Zemseal® | Yes |
|---|-----|

Postconsumer recycled content of product (creditable):

|   |     |
|---|-----|
| Sub-structure waterproofing system Zemseal® | 0 % |
|---|-----|

Recycled content post-consumer:

|   |       |
|---|-------|
| Sub-structure waterproofing system Zemseal® | 0 wt% |
|---|-------|

Postconsumer recycled content for steel according to LEED:

|   |     |
|---|-----|
| Sub-structure waterproofing system Zemseal® | 0 % |
|---|-----|

The product is made of steel:

|   |    |
|---|----|
| Sub-structure waterproofing system Zemseal® | No |
|---|----|

Recycled content pre-consumer:

|   |       |
|---|-------|
| Sub-structure waterproofing system Zemseal® | 0 wt% |
|---|-------|

Preconsumer recycled content for the entire product:

|   |     |
|---|-----|
| Sub-structure waterproofing system Zemseal® | 0 % |
|---|-----|

#### ■ MR Credit BPDO - Material Ingredients - Option 1: Material Ingredient Reporting

Weighted Product Value on Credit BPDO - Material Ingredients - Option 1: Material Ingredient Reporting:

|   |                    |
|---|--------------------|
| Sub-structure waterproofing system Zemseal® | 0 % weighted value |
|---|--------------------|

A manufacturer inventory with all ingredients (to at least 0.1 %) identified by CASRN exists for the product:

|   |    |
|---|----|
| Sub-structure waterproofing system Zemseal® | No |
|---|----|

A Health Product Declaration (HPD) exists for the product:

|   |    |
|---|----|
| Sub-structure waterproofing system Zemseal® | No |
|---|----|

Certified according Declare - all ingredients have been evaluated and disclosed down to 0,1 % = 1000 ppm:

|   |    |
|---|----|
| Sub-structure waterproofing system Zemseal® | No |
|---|----|

Certified according Product Lens:

|   |    |
|---|----|
| Sub-structure waterproofing system Zemseal® | No |
|---|----|

Certified according Cradle to Facts - NSF/ANSI 336: Sustainability Assessment for Commercial Furnishings Fabric:

|   |    |
|---|----|
| Sub-structure waterproofing system Zemseal® | No |
|---|----|

Assessed according ANSI/BIFMA e3 Furniture Sustainability standard - Product earned at least 3 points under 7.5.1.3 Advanced Level in e3-2014 or 3 points under 7.4.1.3 Advanced Level in e3-2012:

|   |    |
|---|----|
| Sub-structure waterproofing system Zemseal® | No |
|---|----|

Certified with Cradle to Cradle:

|   |    |
|---|----|
| Sub-structure waterproofing system Zemseal® | No |
|---|----|

Cradle to Cradle Standard Version:

|   |          |
|---|----------|
| Sub-structure waterproofing system Zemseal® | no entry |
|---|----------|

Cradle to Cradle Level:

|   |          |
|---|----------|
| Sub-structure waterproofing system Zemseal® | no entry |
|---|----------|



Certified with Cradle to Cradle Material Health:

|   |    |
|---|----|
| Sub-structure waterproofing system Zemseal® | No |
|---|----|

Cradle to Cradle Material Health Level:

|   |          |
|---|----------|
| Sub-structure waterproofing system Zemseal® | no entry |
|---|----------|

For Cradle to Cradle Material Health are at least 90% of materials assessed by weight:

|   |    |
|---|----|
| Sub-structure waterproofing system Zemseal® | No |
|---|----|

#### ■ MR Credit BPDO - Material Ingredients - Option 2: Material Ingredient Optimization

Weighted Product Value on Credit BPDO - Material Ingredients - Option 2: Material Ingredient Optimization:

|   |                      |
|---|----------------------|
| Sub-structure waterproofing system Zemseal® | 100 % weighted value |
|---|----------------------|

The product contains no ingredients listed on the REACH Authorization list – Annex XIV, the Restriction list – Annex XVII and the SVHC candidate list. This is proved down to fully inventoried chemical ingredients to 100 ppm (0,01 %):

|   |     |
|---|-----|
| Sub-structure waterproofing system Zemseal® | Yes |
|---|-----|

The Product have fully inventoried chemical ingredients to 100 ppm and no Benchmark 1 hazard according to GreenScreen v1.2 Benchmark. The product is assessed with "GreenScreen List Translator":

|   |    |
|---|----|
| Sub-structure waterproofing system Zemseal® | No |
|---|----|

The Product have fully inventoried chemical ingredients to 100 ppm and no Benchmark 1 hazard according to GreenScreen v1.2 Benchmark. The product is assessed with "GreenScreen Assessment":

|   |    |
|---|----|
| Sub-structure waterproofing system Zemseal® | No |
|---|----|

Certified with Cradle to Cradle:

|   |    |
|---|----|
| Sub-structure waterproofing system Zemseal® | No |
|---|----|

Cradle to Cradle Standard Version:

|   |          |
|---|----------|
| Sub-structure waterproofing system Zemseal® | no entry |
|---|----------|

Cradle to Cradle Level:

|   |          |
|---|----------|
| Sub-structure waterproofing system Zemseal® | no entry |
|---|----------|

#### ■ MR Credit BPDO - Material Ingredients - Option 3: Product Manufacturer Supply Chain Optimization

Weighted Product Value on Credit BPDO - Material Ingredients - Option 3: Supply Chain Optimization:

|   |                    |
|---|--------------------|
| Sub-structure waterproofing system Zemseal® | 0 % weighted value |
|---|--------------------|

Environmental Management System according ISO 14001:

|   |     |
|---|-----|
| Sub-structure waterproofing system Zemseal® | Yes |
|---|-----|

Manufacturer is certified according OHSAS 18000 - Health and Safety Management System:

|   |    |
|---|----|
| Sub-structure waterproofing system Zemseal® | No |
|---|----|

#### ■ Location Valuation Factor

Information for Location Valuation Factor is available:

|   |    |
|---|----|
| Sub-structure waterproofing system Zemseal® | No |
|---|----|

Place of raw material extraction (e.g D-70563 Stuttgart):

|   |                |
|---|----------------|
| Sub-structure waterproofing system Zemseal® | No Information |
|---|----------------|

Place of manufacture (e.g. D-70563 Stuttgart):

|   |                |
|---|----------------|
| Sub-structure waterproofing system Zemseal® | No Information |
|---|----------------|

Place of purchase incl. distribution (e.g. D-70563 Stuttgart):

|   |                |
|---|----------------|
| Sub-structure waterproofing system Zemseal® | No Information |
|---|----------------|

The distance between place of raw material extraction and manufacture is less than 100 miles/160 km:

|   |    |
|---|----|
| Sub-structure waterproofing system Zemseal® | No |
|---|----|

#### ■ Indoor Environmental Quality

##### ■ EQ Credit Low-Emitting Materials (except Healthcare and Schools)

The entire product contributes toward satisfying EQ Credit: Low-Emitting Materials:

|   |     |
|---|-----|
| Sub-structure waterproofing system Zemseal® | N/A |
|---|-----|

#### ■ Contact Details Manufacturer

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#### ■ Disclaimer

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