




# KÖSTER Deuxan 2C

Technical Data Sheet W 252 032

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- BBA Certification 18/55091
- Industry classification "Deuxan" registered at the German patent office, K 50 863
- Official test certificate for approval by the building authorities P-2001-4-3472/02-K by the MPA for construction engineering in Dresden, Waterproofing against pressurized and non-pressurized water
- Official test Certificate by the MPA Dresden - according to the guideline of the Association of the German Chemical Industry "Guideline for the design and the application of waterproofing of construction members with ground contact using polymer modified bitumen thick film sealants" from June 1996 in accordance with DIN 18195- Official test certificate by the AMPA Hannover - slotted disk water pressure test
- Tested for tightness against radon gas - University of Saarland
- Test report Dr. Joachim Kemski, Nr. 2019121601d, Radon tight at 3 mm dry layer thickness
- Test report for waterproofing against water pressure, Institut IGH d.d., Zagreb, Nr. 72530-V/030-031/19

## Crack-bridging, robust, 2 component polymer modified bitumen thick film sealant (PMBC) for waterproofing construction members according to DIN 18533

|   |  |
|---|--|
| <br>1020   | KÖSTER BAUCHEMIE AG<br>Dieselstraße 1-10, 26607 Aurich<br>14<br><b>W 252</b><br><b>EN 15814:2012</b><br><b>KÖSTER Deuxan 2C</b><br><b>Polymer modified bitumen thick film sealant (PMBC) for the waterproofing of underground structures</b> |
| Watertightness<br>Crack bridging ability<br>Resistance against water<br><br>Bending properties at low temperatures<br>Stability at high temperatures<br>Reaction to fire<br>Compressive strength<br>Durability of watertightness and reaction to fire | Class W2A<br>Class CB2<br>No discoloration of the water / No debonding of the inlay<br>No cracks<br><br>No sliding and yielding<br>Class E<br>Class C2A<br>passed  |

|                             |                    |
|-----------------------------|--------------------|
| Application temperature     | + 5 °C to + 35 °C  |
| Substrate temperature       | + 5 °C to + 30 °C  |
| Effectiveness against radon | gasradon gas-proof |

### Fields of Application

KÖSTER Deuxan 2C is designed for the secure and permanent exterior waterproofing of basement walls, foundations, floor plates, etc. and for intermediate waterproofing of balconies, terraces without inhabited sub-structures, underneath screeds as well as for wet and damp rooms. KÖSTER Deuxan 2C is also suitable for bonding insulation and drainage boards. KÖSTER Deuxan 2C can also be used in a variety of other applications, such as waterproofing foundations, pillars or columns in contact with the soil, bridge abutments, embankment and retaining walls, etc.

Authoritative according to DIN 18533:2017-07:

- W1-E: Soil moisture and water without hydrostatic pressure
- W2-E: Water with hydrostatic pressure
- W3-E: Water without hydrostatic pressure on earth-covered ceilings
- W4-E: Splash water and soil moisture on the wall base as well as capillary water within and under walls

### Features

KÖSTER Deuxan 2C is a two component, polystyrene-free, fibrated, polymer modified bitumen thick film sealant (PMBC) for the secure waterproofing of building structures according to DIN 18533, water exposure classes W1-E, W2.1-E, W3-E and W4-E.

KÖSTER Deuxan2C bridges cracks in the substrate against pressurized water and through the addition of a powder component, it cures faster and builds in a cured state a harder surface than a one-component product. KÖSTER Deuxan 2C is also radon-proof.

### Technical Data

|   |   |
|---|---|
| Material base   | bitumen / rubber with a reactive powder |
| Density of the mixture  | 1.07 g / cm <sup>3</sup>                |
| Heat resistance   | + 70 °C                                 |
| Elongation at break   | approx. 100 %                           |
| Waterproof after full cure (in accordance to DIN 1048 part 5) | waterproof up to 5 bar                  |
| Curing time at + 20 °C  | approx. 24 hours                        |
| Min. temperature during curing                                | + 2 °C                                  |
| Mixing time   | min. 3 minutes                          |
| Pot life  | approx. 90 minutes                      |

Mineral substrates always have to be primed with KÖSTER Polysil TG 500 (approx. 100 – 130 g / m<sup>2</sup>) by spray application. Strongly absorbent surfaces may require up to 250 g / m<sup>2</sup>. Priming is also necessary when applying a subsequently scratch coat. Priming is not necessary on polystyrene substrates. By existing bituminous residues, priming the substrate with KÖSTER Bitumen Primer is recommended.

Surface roughness and irregularities up to 5 mm are filled with a scraped layer of KÖSTER Deuxan 2C in order to reduce the risk of blister formation on the coating. If defects are deeper than 5 mm, level them beforehand with KÖSTER WP Mortar. Allow the scraped layer and repair mortar to dry far enough so that it will not be damaged by the

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application of the KÖSTER Deuxan 2C waterproofing layer. Scraped layers do not count as waterproofing layers.

Mineral Fillets (leg length 4 – 6 cm) using KÖSTER WP Mortar (Consumption per m: approx. 2.5 kg) must be applied at least 24 hours prior to beginning the waterproofing application in the wall / floor junction. When waterproofing polystyrene materials, the fillet (leg length: 2 cm) is made with KÖSTER Deuxan 2C. The area waterproofing can always only be applied after the fillet has fully cured.

During the construction phase, water acting on the back can have a damaging effect on the waterproofing layer. If the water can not be kept away from the structure, it may be necessary to apply an intermediate waterproofing made of a crack-bridging MDS (eg KÖSTER NB Elastic grey) or a non-crack-bridging MDS (eg KÖSTER NB 1 grey). However, the intermediate waterproofing must not be pressed from the rear side acting water from the building.

The surface temperature during coating must be at least 3 Kelvin above the dew point of the surrounding air.

### Application

With regard to the application of KÖSTER Deuxan 2C, the DIN 18533 must always be observed. Applications that deviate from the requirements of DIN 18533 are to be agreed separately. Furthermore, the guideline of the Association of the German Chemical Industry "Guideline for the design and the application of waterproofing of construction members with ground contact using polymer modified bitumen thick film sealants" applies.

### Mixing and application

Add the powder to the liquid component in portions and continually mix both components intensively with each other using a slow rotating stirring device until the material becomes a paste-like, lump-free, homogeneous mass (mixing time is min. 3 minutes). When mixing, deposits on the edge of the container should be stripped off and stirred. The application of the liquid component alone is not permitted. Working time is approx. 90 minutes.

KÖSTER Deuxan 2C is always applied in two layers. The KÖSTER Glass Fiber Mesh is embedded into the first layer while it is still fresh. Scraped layers for levelling the substrate (surface preparation) are not considered a waterproofing layer. The layers have to be applied shortly after each other using a plastering trowel or steel float. In the event of work interruptions, the material should be leveled to zero and overlapped by at least 10 cm with a previously applied material when resuming work. Work interruptions must not occur at corners or edges. The waterproofing layer has to be free of flaws, even and in the required thickness.

Rain, frost, water pressure as well as strong sunshine are to be absolutely avoided until the coating dries out. The complete drying is weather-dependent and takes at least 24 hours to several days.

### Minimum layer thickness

The actual dry layer thickness  $d_{\min}$  must nowhere be less than the required minimum thickness before exposure to soil pressure. The dry layer thickness at any point on the surface must not be more than twice the sum of the minimum dry layer thickness  $d_{\min}$  and the thickness addition  $d_z$ .

To ensure the minimum dry layer thickness, a layer thickness addition  $d_z$  resulting from application related fluctuations  $d_v$  and substrate's

surface fluctuations  $d_u$  must be taken into account ( $d_z = d_v + d_u$ ). When applying a scratch coat,  $d_u$  will be omitted.

The layer thickness addition must be determined and calculated separately. The following estimated values can be used:

$$d_v = 0,4 - 0,5 \text{ kg} / \text{m}^2$$

$$d_u = 0,8 - 1,0 \text{ kg} / \text{m}^2 \text{ (depending on substrate)}$$

### Application

W1-E: The layers can be applied fresh in fresh. A reinforcement layer is not required.

W2.1-E: After the first layer a reinforcing layer has to be installed. This layer must be sufficiently dry before applying the second layer so that it is not damaged when the second layer is applied.

W3-E: After the first layer a reinforcing layer has to be installed. This layer must be sufficiently dry before applying the second layer so that it is not damaged when the second layer is applied.

In combination with a vertical waterproofing made of PMBC, the horizontal waterproofing (eg on protrusions, small ceiling surfaces, etc.) can be carried out in accordance with W2.1-E.

W4-E: If the waterproofing of construction members with ground contact in the wall base area (eg behind cladding) can be continued up to the upper edge of the wall base area, it shall be carried out in the same way as in the ground contacting area.

### Layer thickness testing

The wet layer thickness control must be carried out by the applicator. Measurements must be taken during application to ensure minimum dry layer film thickness. For this purpose, at least 20 measurements per object or per 100 m<sup>2</sup> must be carried out. In the area of multiple construction details, the frequency of measurements should be increased. For multi-layer applications, the layers must be checked individually. Also the material consumption is to be controlled.

The through-drying test must be performed on a reference area by eg. cutting a layer piece. The test specimen and the drying conditions must correspond to the conditions prevailing on the construction site. A documentation of the layer thickness control is specified according to DIN 18533. We refer to the KÖSTER PMBC protocol. The requirements of DIN 18195, Supplement 2, apply to testing the dry layer thickness on the object.

### Cross-section waterproofing/ wall-floor junction

In the case of W4-E, this takes place either with sheet-like material or, if the cross-sectional waterproofing is arranged directly on the surface of the floor slab, ideally with a crack-bridging MDS.

a) Connection of the top-side floor slab waterproofing to a cross-sectional waterproofing

By a waterproofing made of PMBC with W 1.1-E, the waterproofing must be brought to the horizontal waterproofing in or under the walls in such a way that no moisture bridge can arise.

b) Connection of the wall waterproofing to the cross-section waterproofing and floor slab

The waterproofing must reach at least 10 cm (15 cm for a floor slab as WP concrete construction) on the front side of the floor slab / foundation. It should also be connected so that no moisture bridge is created.

In the case of projecting floor slabs or foundations, sheet-like waterproofing materials are to be cut flush with the wall and the PMBC must be brought alongside the waterproofing fillet so that no moisture

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bridges are created. For a cross-section waterproofing made of MDS, the overlap with the PMBC must be at least 10 cm.

### Wall base (ground level)

For walls with cladding or with Exterior Insulation and Finish System (EIFS), the PMBC must be guided under the cladding/ EIFS to the edge of the base area to be waterproofed. If the plaster surface of plastered exterior walls is sufficient to reach the ground, the PMBC must be applied from 5 cm above to 20 cm below ground level over a crack-bridging MDS, overlapping 10 cm to prevent rear filtrations. Lower plaster edges must also be sealed against moisture infiltration by at least 5 cm above ground level with MDS. For EIFS the PMBC has to be led behind the insulation on the wall surface 30 cm (15 cm in the final state) above ground level. The lower edge of the plaster should be protected as described above.

### Penetrations (based on DIN 18533-3, Par. 9.3.4)

By W1-E, the PMBC can be guided with adhesive flanges, but also applied in a fillet shape around the feed through or penetration with the insert of a reinforcing layer of KÖSTER Glass Fiber Mesh. For W2.1-E suitable loose and fixed flange constructions must be used. A material compatibility of the parts to be installed must be ensured with the waterproofing material.

### Expansion joints (based on DIN 18533-3, Par. 9.3.5.1)

Seal expansion joints by applying KÖSTER Joint Tape 20 / KÖSTER Joint Tape 30 in the joint areas of the thick film sealant. Avoid water seeping in behind the coating. Allow the waterproofing to cure fully before stressing the material (depends on the weather, but at the earliest after 24 hours).

### Protection and drainage layer

Prior to backfilling, the fully cured coating must be protected from mechanical damage. We recommend the use of KÖSTER Protection and Drainage Sheet 3-400. Polystyrene drainage boards and perimeter insulation are to be fully bonded with eg KÖSTER Deuxan 2C. In order to avoid vertical movement of the waterproofing when backfilling the excavation pit, the surface of the protection or respective drainage boards should be covered with a gliding layer of polyethylene. Avoid stress points on the waterproofing. Dimple sheets, corrugated boards and the like are not suitable protection layers. Make sure not to damage the fillets when backfilling and compacting non-cohesive soils.

In case of horizontal waterproofing on floor areas, embed KÖSTER Glass Fiber Mesh between the waterproofing layers. Install two gliding layers of polyethylene foil prior to applying the screed. A following screed must be at least 50 mm thick.

When applying with spray equipment, such as the KÖSTER peristaltic pump, the above-mentioned points are also to be observed. For a uniform spray pattern, the nozzle size (typically 8 mm or 10 mm) is crucial depending on the flow rate of the material, the particular air supply and the distance to the wall. We recommend preliminary tests to adjust the spray pattern accordingly. Alternatively, the BMP 6 or BMP 7 pumps from b&m can also be used. A 1" hose with a length of 5 m is used for this, nozzle size 8.5 mm, motor power 1st gear, speed 10%. Increase air pressure for a finer spray pattern.

### Consumption

Approx. 4 - 6 kg/m<sup>2</sup>

With regard to the waterproofing the DIN 18533 must always be

observed. (consider notes on the layer thickness addition in the "Application" section)

| Water exposure class according to DIN 18533, Tab. 1 | DLT [mm] | WLT [mm] | Consumption [kg / m <sup>2</sup> ] |
|---|----------|----------|------------------------------------|
| W1-E  | 3,0      | 4,0      | mind. 4,0                          |
| W2.1-E  | 4,0      | 6,0      | mind. 6,0                          |
| W2.2-E*   | 4,0      | 6,0      | mind. 6,0                          |
| W3-E  | 4,0      | 6,0      | mind. 6,0                          |
| W4-E  | 3,0      | 4,0      | mind. 4,0                          |

\*: W2.2-E not intended for PMBC, consumption values based on the standard; Special agreement necessary!

### Definition of terms for consumption table:

- W1-E: Soil moisture and water without hydrostatic pressure
- W2.1-E: Water with hydrostatic pressure. (depth ≤ 3m)
- W3-E: Water without hydrostatic pressure on earth-covered ceilings
- W4-E: Splash water and soil moisture on the wall base as well as capillary water within and under walls
- DLT: Dry Layer Thickness
- WLT: Wet Layer Thickness

When used as a plate adhesive, the following consumption applies:  
- full-surface bonding: at least 4.0 kg / m<sup>2</sup>

### Cleaning

Clean tools with water immediately after use. Clean cured material mechanically and afterwards with KÖSTER Universal Cleaner.

### Packaging

W 252 032 32 kg hobbock; liquid component  
24 kg, powder component 8 kg

### Storage

Store the material in a cool, frost free and dry environment. In originally sealed containers, the material can be stored for a minimum of 12 months.

### Safety

The powder component contains cement. Avoid skin contact. When working with the material, it is important to wear personal protective equipment (gloves and goggles). When spraying, a respiratory protection (particle filter P2) is also required. Observe all governmental, state, and local safety regulations when installing the material.

### Related products

|   |                      |
|---|----------------------|
| KÖSTER KB-Pox Adhesive                        | Prod. code J 120 005 |
| KÖSTER Joint Tape 20                          | Prod. code J 820 020 |
| KÖSTER Joint Tape 30                          | Prod. code J 830 020 |
| KÖSTER Polysil TG 500                         | Prod. code M 111     |
| KÖSTER Bitumen Primer                         | Prod. code W 110 010 |
| KÖSTER NB 1 Grey                              | Prod. code W 221 025 |
| KÖSTER Glass Fiber Mesh                       | Prod. code W 411     |
| KÖSTER WP Mortar                              | Prod. code W 534 025 |
| KÖSTER SD Protection and Drainage Sheet 3-400 | Prod. code W 901 030 |
| KÖSTER Universal Cleaner                      | Prod. code X 910 010 |
| KÖSTER Drill Stirrer                          | Prod. code X 911 001 |

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