General Application Advice

Nafuflex, according to DIN 18195

Handling Information

Planning
Before a waterproofing system is applied, the type of water loading has to be determined. Thus, the type of soil, the terrain shape, and the design water level must be identified.

Substrate preparation (DIN 18195, Part 3)
All mineral substrates which are dry or slightly moist are suitable. The component surface temperature and the surrounding temperature have to be at least + 5 °C. The waterproofed area must be clean, stable, frost-free, even, free from gaping cracks, ridges and substances that could interfere with adhesion (dust, dirt, release agents, etc.).

Masonry without continuous jointing has to be repaired first. Minor unevenness ≤ 5 mm can be filled with a scratch coat of Nafuflex, which is not valid as a waterproofing layer. Recesses > 5 mm have to be filled and closed with a suitable barrier mortar (e.g. Oxal SPM). In the area of floor to wall connections, a coving with a mineral mortar (e.g. Oxal SPM) has to be created. For an optimized adhesion between absorbent substrates and Nafuflex waterproofing, priming is necessary. If spray application is executed, priming can be omitted for most substrates.

Application of Nafuflex on the substrate
Nafuflex can be applied by hand or spray application in two working steps onto the prepared substrate. Finally, one connected layer which adheres to the substrate is created.

Layer thickness
The specified minimum dry layer thickness depends on the type of water loading. The required wet layer thickness is documented in the technical data sheet. Take care that the dry layer thickness will never be below the minimum dry layer thickness and that the wet layer thickness will not exceeded more than 100 %.

Reinforcing inlay
Nafuflex Grid 25 NF has to be applied in dependence of the expected water loading between the first and the second Nafuflex layer.

Joints
Construction and movement joints must be waterproofed with bitumen-compatible, flexible joint strips (Nafuflex DB)

Work interruption
If the application of the waterproofing is interrupted, the layer needs to be smoothed out to zero. Resumption of the work has to continue with overlapping. On corners, covings or edges, no interruptions are allowed.

Floor to wall connections
We recommend the application of the mineral sealing slurry Oxal DS-HS before creating a coving with Oxal SPM in the area of floor to wall connections. Subsequently, the area waterproofing is applied from the wall over the base plate (horizontal) and at least 100 mm to the face side of the base plate (vertical).

Splash water area
Before waterproofing of splash water areas, Oxal DS-HS is required up to 300 mm above the ground level. After terrain modelling, in the final state it should not go below 150 mm. The following overlapping of Nafuflex and mineral sealing slurry should be more than 100 mm.

Waterproofing against ground damp and non-standing seepage water (DIN 18195 Part 4)
This case of waterproofing is present if the building site and also the filling material consist of very permeable ground ($k > 10^{-4}$ m/s) e.g. coarse sand or gravel. If it is a less permeable ground ($k \leq 10^{-4}$ m/s) e.g. fine sand, mud or clay, there must be drainage according to DIN 4095.

The required dry layer thickness is 3 mm. In areas which are especially exposed (e.g. covings, corners, edges, penetrations) we recommend an insertion of a reinforcement between the first and the second layer Nafuflex. Waterproofing of intersection areas is conducted by filling with Nafuflex in a coving shape.

The reinforcement layer must be inserted in the first, fresh Nafuflex layer. There, the bond length of the reinforcement layer of at least 10 cm to the area waterproofing must be observed (see application handbook Nafuflex).

If the base plate is coated with Nafuflex, apply Nafuflex close to the vertical waterproofing (cross-sectional waterproofing) to avoid forming moisture bridges.

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Handling Information

Waterproofing against non-standing water on areas and in wet rooms (DIN 18195 Part 5)
Nafuflex can be used for the waterproofing of "moderately" loaded areas. Moderate loaded areas are:
- Balconies and areas not under habitation in housing construction
- directly splash water loaded floors and walls in moist rooms of housing construction, as far as there is no other protection against water ingress into the construction

There, the required dry layer thickness is 3 mm. At exceedingly loaded areas, a reinforcement layer has to be inserted between the first and the second layer. At the connection of intersections, Nafuflex is applied with a reinforcing layer on adhesive flanges or loose- and tight flange constructions are used.

The crack width of the waterproofed substrate is not allowed to exceed 0.5 mm at the beginning. Possible crack widening should be regulated to a maximum of 1 mm. Offset of crack edges should be not more than 0.5 mm.

Waterproofing against percolating seepage water (DIN 18195 Part 6)
Nafuflex can be apply for the loading type "percolating seepage water" under the following conditions:
- The maximal foundation depth is less than 3 m.
- The basement bottom line has to be at least 30 cm above the comparative water level.

The required dry layer thickness is 4 mm. In the whole range which is treated with Nafuflex, an insertion of reinforcement between the first and the second layer of Nafuflex is necessary.

Reinforcing layers have to be embedded into the first, still fresh layer Nafuflex and with overlapping of 10 cm. While applying the second Nafuflex layer, do not damage the first layer. Drainage is not necessary. Intersection connections require loose- and tight flange constructions.

Transition areas in contact with base plates made of watertight concrete and percolating seepage water (DIN 18195 Part 9)
For the transition areas between waterproofing against percolating seepage water according to Part 6, and watertight concrete, special requirements (substrate preparation, covings rounded, edges smoothened) exist.

Moreover, the waterproofing needs to be placed at least 150 mm broad on the face surface of the base plate. In sections, the drying and/or the adhesion to the substrate must be checked destructively. The check must be repeated 1 time per 10 m transition area; at least once per each building wing.

Testing of Layer Thickness and Drying (DIN 18195 Part 3)
To control the wet layer thickness, the consumption of Nafuflex per m² waterproofed area can be observed or the layer thickness of the freshly apply material (20 measurements per 100 m² or per object) is measured directly.

Testing of drying is done by destruction of a reference sample. The sample consists of the respective substrate and has to be stored within the excavation pit. For waterproofing according to Part 5 or Part 6, documentation of layer thicknesses and drying time is mandatory.

Edition 03/14. Some technical changes have been made to this print medium. Older editions are invalid and may not be used anymore. If a technically revised new edition is issued, this edition becomes invalid.

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