

What do you want to get done?

# Waterproofing systems for flat roofs

All-round solutions



Digital brochures





**Simple, safe  
and durable**

# Waterproofing solutions for flat roofs

<b>Safe, dry and reliable</b> _____	<b>04</b>	Flat roof vents _____	30
New buildings and repairs _____	04	Flat roof drainage _____	31
Waterproofing expertise _____	06	Movement joints _____	32
<b>MB PUReactive flat roof systems</b> _____	<b>08</b>	Waterproofing under tiles _____	32
Innovation meets tradition _____	08	Full-length windows _____	33
Regulations and performance levels _____	14	Slabs on drainage filling material _____	34
Fire protection requirements _____	15	Slabs on support pads _____	35
Almost always without primer _____	17	Extensive green roofs _____	36
New buildings _____	18	Intensive green roofs _____	37
Refurbishment _____	19	<b>Mixing technology</b> _____	<b>38</b>
Regeneration _____	20	Processing technology _____	40
<b>Surfaces and detailed solutions</b> _____	<b>22</b>	<b>Our product range</b> _____	<b>42</b>
Surface waterproofing on new buildings _____	24	<b>Product overview</b> _____	<b>57</b>
Surface waterproofing over old waterproofing _____	25	<b>What makes Remmers special</b> _____	<b>58</b>
Wall connections on new buildings _____	26		
Wall connections on old waterproofing _____	27		
Dome lights _____	28		
Double-T beams _____	29		

# New construction and repair of flat roofs



**Flat roofs often occupy an exposed position and are subjected to water loads due to the way they are designed. This makes them one of most heavily stressed parts of a building.**

The challenges are not just limited to rainwater, but also include extreme temperature differences and complex physical interactions with the indoor climate of the rooms beneath them. On top of this, flat roofs have to withstand mechanical loads, namely tension caused by the expansion, shrinkage and bending of the structure. And as if that weren't enough already, these days flat roofs are often converted into "green roofs", covered with solar panels or used as extra living space. This explains why flat roof waterproofing has to meet the very highest demands.

The individual nature of many flat roof constructions and their specific usage profile also pose particular challenges for planners and builders. The type of insulation, the layer construction, the associated structural physics, the fire protection, drainage, and – last but not least – the roof waterproofing have to be considered, selected and executed with great care. We can help with this!



SAFE, DRY AND RELIABLE

# Waterproofing expertise

Moisture protection with our systems

Construction, repair and protection have been our core competencies ever since the company's inception. From small homes to large industrial buildings and even listed cathedrals, from basement to roof waterproofing and from wood to concrete: we thrive on innovation backed by extensive knowledge of national and international standards and guidelines.

We put our decades of expertise to good use in order to support our customers in their projects. Not only do we offer tailor-made, innovative products and systems – we also provide comprehensive solutions for the sustainable protection of buildings of all kinds.

**So it's only logical that we are now also turning our attention to flat roof waterproofing.**

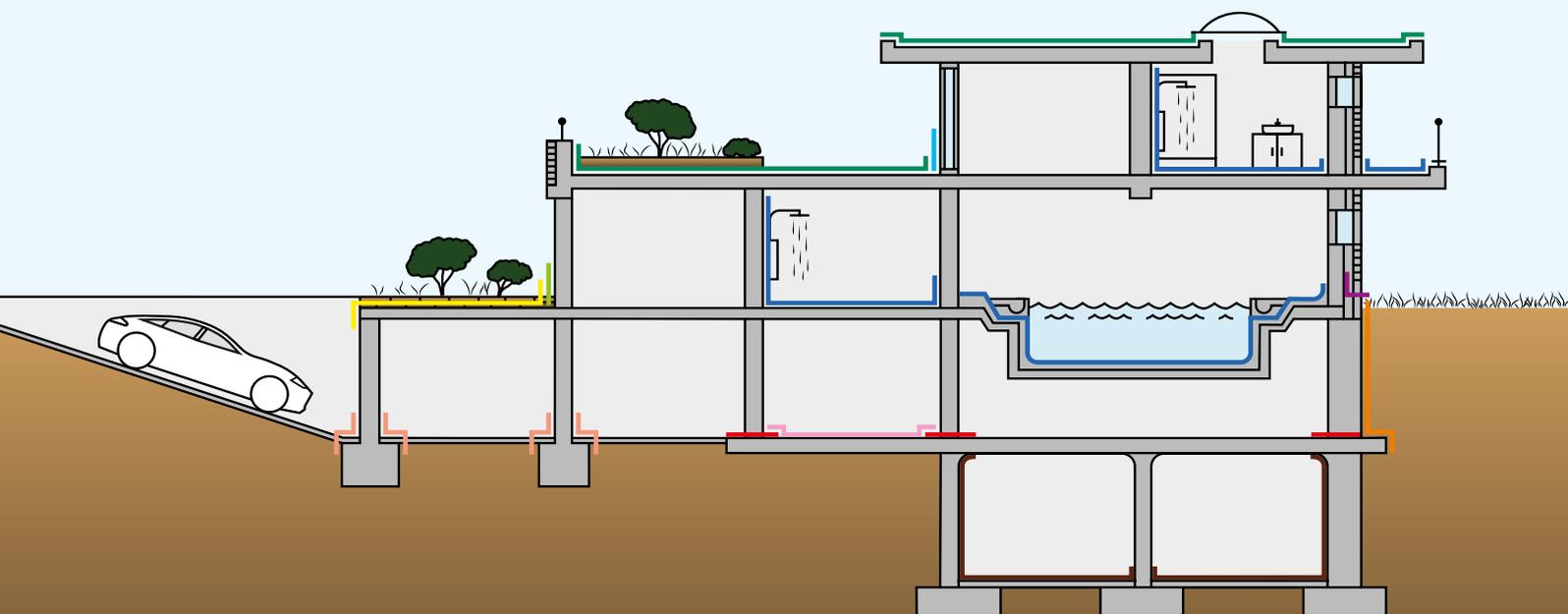


# We've taken it to the top!

We have well over half a century of experience, expertise and innovation in the waterproofing of buildings. The development of new technologies has always been one of our core activities and a vital driver of its success.

**Now, with the MB PUReactive systems, we are starting a new chapter: making it even safer, easier and more cost-effective than ever to waterproof flat roofs.**

- Waterproofing of e.g. roofs, balconies, walkways
- Waterproofing of full-length windows
- Waterproofing column footings
- Waterproofing in and under walls
- Exterior waterproofing with ground contact
- Waterproofing the base of facing masonry shells
- Waterproofing earth-covered ceilings
- Plinth waterproofing
- Waterproofing in a composite construction
- Subsequent interior waterproofing in old buildings
- Floor slab waterproofing



INNOVATION MEETS TRADITION



# Don't set any limits

With the MB PUReactive flat roof systems



# What is PU hybrid waterproofing?

## MB PUReactive is a PU hybrid waterproofing, but what does that actually mean?

The technology in MB PUReactive is based on a liquid component and a powder component that create a synergy when mixed together. Thanks to the straightforward 1 :1 mixing ratio, mixing errors can be ruled out.

The material has a long pot life of around 90 minutes once it has been mixed, but it reacts extremely rapidly once applied. This means that the waterproofing is rainproof after around 2 hours.

In most cases, there is no need for a primer, or else a contact layer of the material itself can be used.



### Unparalleled technical performance:

- ✓ Optimum application properties
- ✓ Open working time: 1.5 hours
- ✓ Rainproof after 2 hours
- ✓ Tested temperature range: -30°C to +90°C
- ✓ Crack bridging > 3 mm
- ✓ Fast drying times (4 - 5 hours)
- ✓ Approved in the highest performance classes according to EAD 0303-50-00-0402 (formerly ETAG 005)

### Very cost-effective

- ✓ Unique price/performance ratio
- ✓ Economical application rate
- ✓ One material, simple process
- ✓ High surface area output

### Sustainable and modern

- ✓ Durable and long-lasting
- ✓ Odour-neutral and solvent-free





As PU hybrids, the MB PUReactive systems combine the best of multiple worlds to create roof waterproofing solutions with exceptional capabilities. MB PUReactive systems are just as cost-effective as sheet waterproofing, but can also be used effortlessly around joints and material transitions thanks to their excellent adhesion and flexibility. And what's more, they satisfy the highest performance classes of EAD 0303-50-00-0402 (formerly ETAG 005).



# MB PUReactive

MB PUReactive is optimised for manual application thanks to its flow properties. It can be applied quickly and easily with a roller.



The fabrics from the MB PUReactive F series can easily be embedded over the entire surface and absorbs movements in the building structure without damage.

## RANGE OF USE:

- ✓ Flat roofs, balconies, loggias and walkways
- ✓ Surfaces with and without living space underneath
- ✓ New buildings
- ✓ Refurbishment
- ✓ Material transitions

## PROPERTY PROFILE:

- ✓ Approved according to EAD 0303-50-00-0402 (formerly ETAG 005)
- ✓ Fire protection classification B-s1,d0 (low flammability\*)
- ✓ Flexible crack-bridging > 3 mm
- ✓ Solvent-free
- ✓ No odour
- ✓ Optimised for manual application
- ✓ Perfect adhesion on virtually any substrate without the need for primer
- ✓ High surface area output, very high yielding
- ✓ Fast drying times (4 – 5 hours)
- ✓ Unique price/performance ratio

# MB PUReactive TX

MB PUReactive TX features optimisations on two fronts. First, it is ideal for fabric-reinforced solutions on complex surface geometries, where it can be applied effortlessly to feed-throughs and rising components. This includes full-length windows over flat roofs, balconies and walkways, as well as plinths and render waterproofing. MB PUReactive TX is also the perfect solution for spray-on surface waterproofing thanks to its exceptionally low aerosol development. This means that, as a rule, no additional protective measures to prevent contamination of the surrounding area are needed on the flat roof.



## RANGE OF USE:

- ✓ Flat roofs, balconies, loggias and walkways
- ✓ Surfaces with and without living space underneath
- ✓ New buildings and renovation
- ✓ Vertical areas
- ✓ Material transitions
- ✓ Connections to feed-throughs and rising components
- ✓ Waterproofing of full-length windows over flat roofs, balconies, loggias and walkways
- ✓ Plinth and render waterproofing over flat roofs, balconies, walkways

## PROPERTY PROFILE:

- ✓ Approved according to EAD 0303-50-00-0402 (formerly ETAG 005)
- ✓ Fire protection classification B-s1,d0 (low flammability\*)
- ✓ Flexible crack-bridging > 3 mm
- ✓ Solvent-free
- ✓ No odour
- ✓ Stable
- ✓ Optimised for manual and spray application
- ✓ Perfect adhesion on virtually any substrate without the need for primer
- ✓ High surface area output, very high yielding
- ✓ Fast drying times (4 – 5 hours)
- ✓ Unique price/performance ratio

\* Visit [www.remmers.com](http://www.remmers.com) for more information



# MB PUReactive+

MB PUReactive+ is the quick and cost-effective solution for new buildings and especially when renovating flat roofs. The product is reinforced with fibres, which ensure that tensile forces, such as those generated across cracks, can be absorbed by the product without damage. This means that there is no need to embed an additional fabric material. This exceptional capability is demonstrated in the approval according to EAD 0303-50-00-0402 (formerly ETAG 005) in the highest performance classes. Since application without embedded fabric is still not covered by German regulations, a special agreement with the developer is needed. This is not necessary for the renovation of flat roofs (p. 20). Whether over large surfaces or in areas with fine details, MB PUReactive+ can be applied with ease and is optimised for spraying.



## RANGE OF USE:

- ✓ Flat roofs, balconies, loggias and walkways
- ✓ Surfaces with and without living space underneath
- ✓ New buildings and renovation
- ✓ Regeneration
- ✓ Vertical areas
- ✓ Material transitions
- ✓ Connections to feed-throughs and rising components
- ✓ Plinth and render waterproofing over flat roofs, balconies, loggias and walkways

## PROPERTY PROFILE:

- ✓ Approved according to EAD 0303-50-00-0402 (formerly ETAG 005)
- ✓ Fire protection classification B-s1,d0 (low flammability\*)
- ✓ Can be used without reinforcement fleece
- ✓ Fibre-reinforced
- ✓ One material, simple process
- ✓ Flexible crack-bridging > 3 mm
- ✓ Solvent-free
- ✓ No odour
- ✓ Optimised for spraying
- ✓ Perfect adhesion on virtually any substrate without the need for primer
- ✓ High surface area output, very high yielding
- ✓ Fast drying times (4 – 5 hours)
- ✓ Unique price/performance ratio
- ✓ As cost-effective as sheet waterproofing

# Regulations and performance levels

## MB PUReactive systems tick every box

The European technical approvals (European assessment document, EAD) were published in October 2022 and replace the well-known European technical specifications (European technical approval guideline, ETAG). In the field of liquid-applied roof waterproofing, EAD 0303-50-00-0402 (formerly ETAG 005) is the established specification for liquid plastics and sets standards for product quality and service life. The performance characteristics of the products are determined through extensive testing. The characteristics that are defined in this way are

reflected in the country-specific regulations and standards, and serve as the baseline for the use of these products as waterproofing on flat roofs. The various requirements are divided into classes and classified in different performance levels.

Liquid plastics with the specified performance levels guarantee safe flat roof waterproofing that complies with the relevant standards.

Classes	Code	Performance levels	MB PUReactive – performance
<b>Climate zone</b>	M	moderate climate	
	<b>S</b>	<b>extreme climate</b>	✓
<b>Expected service life</b>	W1	5 years	
	W2	10 years	
	<b>W3</b>	<b>25 years</b>	✓
<b>Loads</b>	P1	low load	
	P2	moderate load	
	P3	normal load	
	<b>P4</b>	<b>exceptional load</b>	✓
<b>Lowest surface temperatures</b>	TL1	+5 °C	
	TL2	-10 °C	
	TL3	-20 °C	
	<b>TL4</b>	<b>-30 °C</b>	✓
<b>Highest surface temperatures</b>	TH1	+30 °C	
	TH2	+60 °C	
	TH3	+80 °C	
	<b>TH4</b>	<b>+90 °C</b>	✓

# Safe waterproofing for roofs

## MB PUReactive meets high fire protection requirements



When planning and installing construction works and components such as flat roofs, the basic principles and requirements of structural fire protection must be observed.

Structural fire protection is one of the three pillars of preventive fire protection. It comprises all aspects that relate to preventing or minimising the occurrence, spread and impact of a fire.

In order to be approved for use on a flat roof, a building material or component must conform, at a minimum, to building material class "normal flammability (E)" in accordance with DIN EN 13501-1 or building material class B2 according to DIN 4102-1. In addition, certification according to DIN CEN/TS 1187 in conjunction with classification standard DIN EN 13501-5 is required within the context of European harmonisation. These standards describe four test and evaluation categories, Broof (t1) to Broof (t4), for use within Europe.

Method 1 is normally applied in Germany, method 2 originates in Scandinavia, method 3 comes from France and method 4 is from the United Kingdom.

In all methods, the fire load is applied from the outside. However, the methods differ in terms of the incendiary compositions and the impact of wind and/or radiation heat. In each case, the fire spread on the roof waterproofing and inside the roof surface, the penetration of fire through the roof layers, and the flaming droplet behaviour are evaluated.

The MB PUReactive waterproofing products have been fire-tested and are classified to B-s1,d0. This means that they are fire resistant\*, do not generate smoke, and there is no danger from flaming droplets.



Evaluation category	Country examples
<b>Broof (t1)</b>	DE / AT / CH / PL / IT / BENELUX
<b>Broof (t2)</b>	Scandinavia
<b>Broof (t3)</b>	France / Czech Republic
<b>Broof (t4)</b>	United Kingdom

\* Visit [www.remmers.com](http://www.remmers.com) for more information

INNOVATION MEETS TRADITION



# Almost always without primer

PU hybrid with excellent adhesion



While flat roofs may appear run-of-the-mill at first glance, in reality they're anything but. Not only do the supporting structures vary, but there are also a wealth of different moisture barriers, insulating materials and old waterproofing products to be found, as well as variations in the joins with the walls, not to mention the possibility of dome lights and roof penetrations. MB PUReactive and the MB PUReactive family give you the solutions you need to overcome even the toughest challenges, with or without fabric reinforcement depending on the application.

The most critical aspect when working with roof waterproofing products is ensuring that the waterproofing material and the substrate are fully bonded over the entire surface. Many of the systems available on the market require substrate-specific primers in order to achieve a functional waterproofing layer. But MB PUReactive is different: Only one single primer is needed, and even this can be dispensed with on most substrates, since the adhesion properties of MB PUReactive itself are so good that an additional primer is only required for a small number of substrates.

<b>Substrate (type &amp; composition)</b>	<b>Primers for MB PUReactive</b>
<b>Insulation – PIR / PUR</b>	none required
<b>Insulation – mineral wool</b>	none required
<b>Wood/wood-based material</b>	none required
<b>Mineral substrates</b>	none required
<b>Metals</b>	none required
<b>Plastic and elastomer sheets</b>	optional

#### Information on choosing the right primer

You can find detailed information and recommendations on how best to prepare the substrate when using the MB PUReactive family here or at [www.remmers.com](http://www.remmers.com)





## New buildings

### From homes to industrial halls

Flat roofs were a common sight in the 1960s, both on industrial buildings and on private homes in the golden era of the bungalow. And now, after several quiet decades, this roof type is enjoying something of a revival in modern housebuilding. This is partly down to changing aesthetic preferences, but there are highly practical reasons too:



- ✓ A flat roof means it is possible to make use of the full height of the space underneath.
- ✓ A flat roof can be turned into extra living space, such as a roof terrace.
- ✓ A flat roof can be made into a green roof. Not only is this eco-friendly and attractive, there are also other benefits. Planting up a roof protects the actual roof skin from direct weather effects, as well as providing improved sound insulation along with thermal protection in the summer.
- ✓ Green roof systems also improve the air quality and prevent overflowing drains or flooded basements during heavy rain because they can retain large quantities of rainwater. Green roof systems can be used as a terrace, patio or roof garden.
- ✓ A flat roof offers flexibility, e.g. in case the owner wants to add an additional storey in future.

# Refurbishment

## Renovating existing roofs

When renovating large flat roofs or sub-sections of a roof, there are often particular requirements that have to be met: It is normally expected that the work will not disturb the functional areas underneath the roof, be they production facilities, storage areas or living space, i.e. they can continue being used as normal.

For this reason, it is often not possible to apply conventional renovation methods, such as dismantling the old roof and fitting a new one, or using a restoration layer that is fixed mechanically. The liquid waterproofing materials of the MB PUReactive range are ideally suited to such cases. They are the perfect solution for renovating existing roof surfaces.



- ✓ A primer is only needed for a small number of plastic sheet varieties; it can be dispensed with entirely on old bitumen and metal, for example.
- ✓ MB PUReactive TX and MB PUReactive+ can be applied manually with a roller and brush, or by spraying. They generate very low quantities of spray mist, so there's nothing stopping them from being used on roofs.
- ✓ MB PUReactive can be sprayed on so quickly that applying the material in this way is even more cost-effective than laying bitumen sheets.
- ✓ MB PUReactive+ is the crowning glory of this product family. The main advantage of this product: MB PUReactive+ is approved to EAD 0303-50-00-0402 (formerly ETAG 005) without fleece reinforcement!
- ✓ The result is a fully seamless and visually homogeneous surface that could not be achieved if fabric reinforcement were to be used.
- ✓ In addition to the issue of waterproofing itself, other problems can typically occur during flat roof renovation.
- ✓ If the work affects more than 10% of the roof surface area, it is necessary in Germany to bring the roof up to the minimum energy standards required by law. This often means that the old waterproofing has to be completely removed in order to enable the insulation value to be improved.
- ✓ If water has already penetrated into the structure through damaged areas and saturated the insulating material, full replacement is often unavoidable.
- ✓ However, there are now some methods that can be used to dry out the insulating layer. A major disadvantage of this approach is that it takes a lot of time, during which the still-damp insulation leads to high levels of energy loss from the building.

\* Special agreement: Required when using MB PUReactive+ as a waterproofing system, as without fleece reinforcement 19.

# Regeneration

## Prolong service life by renovating with MB PUReactive+

Flat roofs need to be inspected at regular intervals and require routine maintenance. Even the best flat roof waterproofing will need to be given an overhaul once it reaches a certain age. If proper planning is

implemented and followed from the outset, costly full renovation of the roof should not be necessary. In this case, it is sufficient to apply a simple new layer, also called a "regeneration layer".



### **But what really makes regeneration different to renovation?**

Renovation is carried out when damage has already occurred. The products used must restore the full functional capability of the roof.

Regeneration is carried out when damage is likely in the near future. Here, the product used does not need to provide the required functionality in full; rather, it is intended to reinforce the existing, still functional layer.

### **What is the purpose of this distinction? Of course, it is possible to use a renovation product for regeneration.**

The German law on energy in buildings (Gebäudeenergiegesetz, GEG) specifies that if more than 10% of a roof's surface is affected by renovation measures, a complete energy efficiency renovation must also be carried out. This means that insulation must be installed in accordance with this law.

If a regeneration – as described above – is now incorrectly referred to as "renovation", the result is that, owing to a formality, a roof that is not insulated to the current standard would require an energy efficiency overhaul – which would entail significant additional costs. For this reason, it makes sense to refer to "regeneration" as a separate process, and also to make it clear in terms of the products themselves that no renovation is involved.



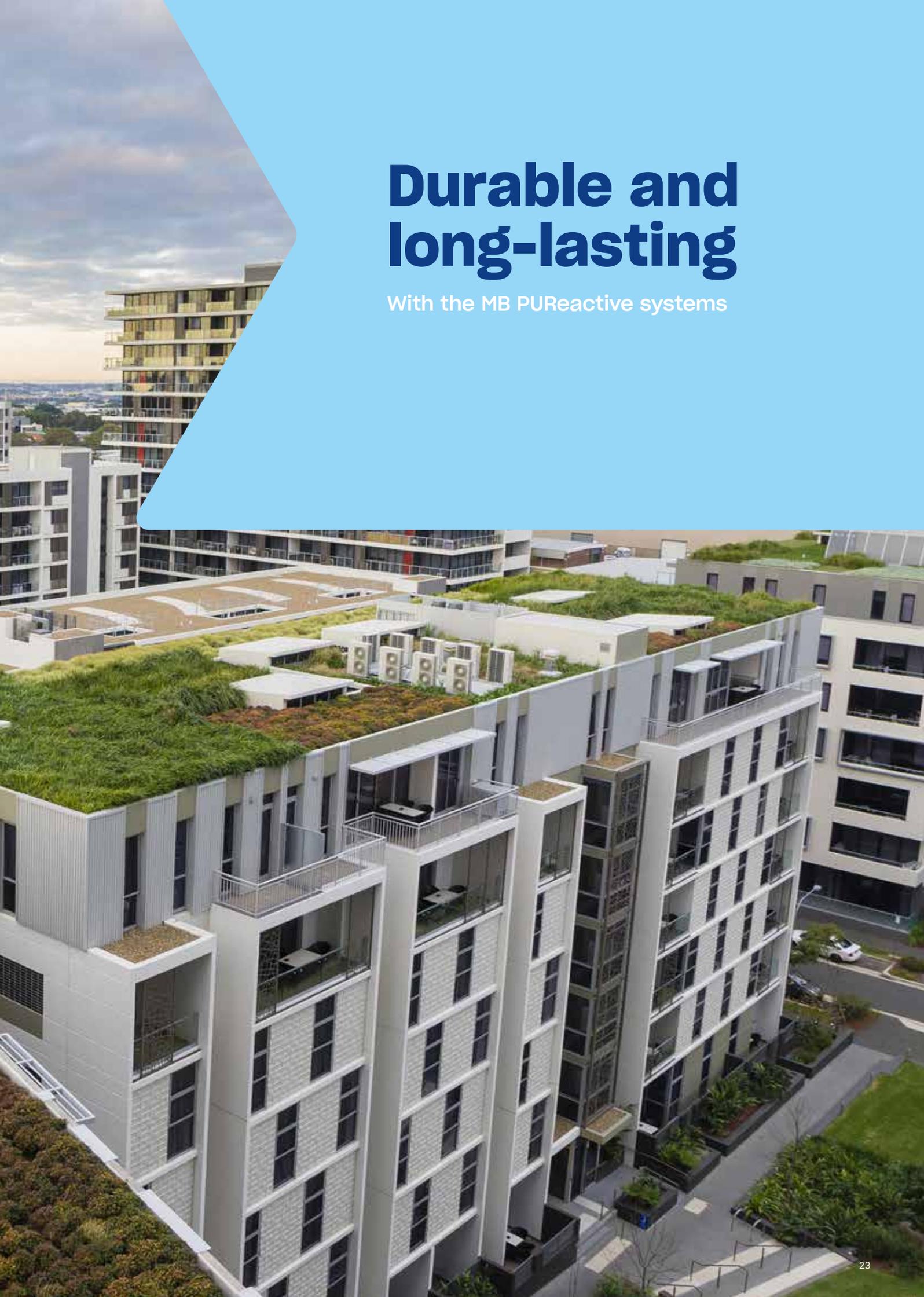
## Our solution for regeneration

MB PUReactive+ can be applied without fleece reinforcement directly onto the old waterproofing, such as bitumen, PVC, EPDM, FPO, etc. This guarantees longevity of the flat roof waterproofing and therefore cost-effectiveness.

**This is sustainability and safety at the highest level - making it the perfect solution!**





An aerial photograph of a modern, multi-story apartment building. The building features a prominent green roof with various plants and several air conditioning units. The facade is light-colored with dark window frames and balconies. The surrounding area includes other buildings and a street with a few cars. A large blue triangle is overlaid on the top right of the image, containing the text.

# Durable and long-lasting

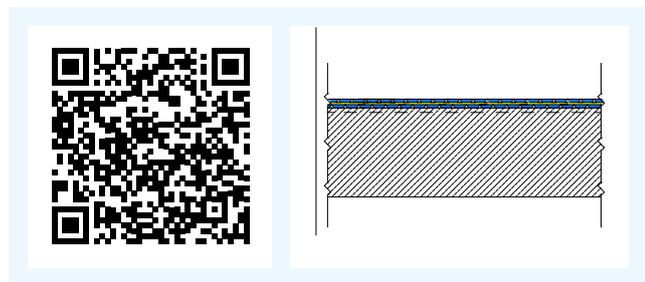
With the MB PUReactive systems

# Surface waterproofing: new buildings

## MB PUReactive: a durable solution

MB PUReactive and MB PUReactive TX can be used for reliable, fast and cost-effective waterproofing on all conventional flat roofs. The products can be used the traditional way, with fabric reinforcement.

The saturation properties of the fleece in the MB PUReactive F-series enables it to integrate seamlessly into the overall system. And MB PUReactive+ can also be used without any fabric.



You can find detailed information and recommendations on preparing the substrate for the MB PUReactive family in our primer recommendation guide.

### Waterproofing with fabric

Structure	Product/details (page)	Appl. rate
1 Waterpr. (1st layer)	MB PUReactive P. 44	~ 1.50 kg/m <sup>2</sup>
2 Fabric reinforcement	MB PUReactive F-series P. 48	~ 110 g/m <sup>2</sup>
3 Waterpr. (2nd layer)	MB PUReactive P. 44	~ 1.50 kg/m <sup>2</sup>

### Waterproofing without fabric\*

Structure	Product/details (page)	Appl. rate
1 Waterpr. (1st layer)	MB PUReactive+ P. 46	~ 1.85 kg/m <sup>2</sup>
2 Waterpr. (2nd layer)	MB PUReactive+ P. 46	~ 1.85 kg/m <sup>2</sup>

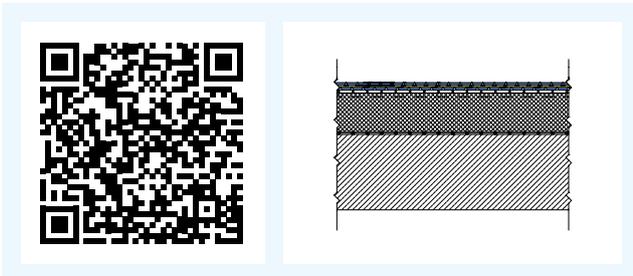
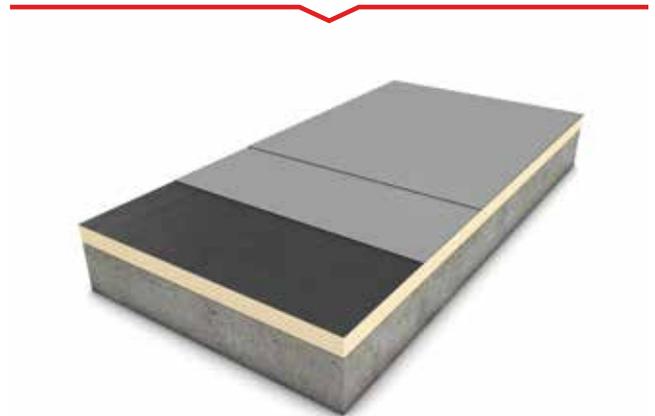




# Surface waterproofing on old layers

## MB PUReactive never fails

Old waterproofing on roofs can consist of a wide range of materials, the most common of which include elastomers, polymers and bitumen. These building materials have very different chemical and physical properties. The challenge lies in creating a functional and long-lasting adhesive bond with the new waterproofing layer. The answer? MB PUReactive+. The PU hybrid waterproofing product reliably seals all materials, whether it is applied with a roller or by spraying.



You can find detailed information and recommendations on preparing the substrate for the MB PUReactive family in our primer recommendation guide.

### Waterproofing without fabric\*

Structure	Product/details (page)	Appl. rate
1 Waterpr. (1st layer)	MB PUReactive+ P. 46	~ 1.85 kg/m <sup>2</sup>
2 Waterpr. (2nd layer)	MB PUReactive+ P. 46	~ 1.85 kg/m <sup>2</sup>

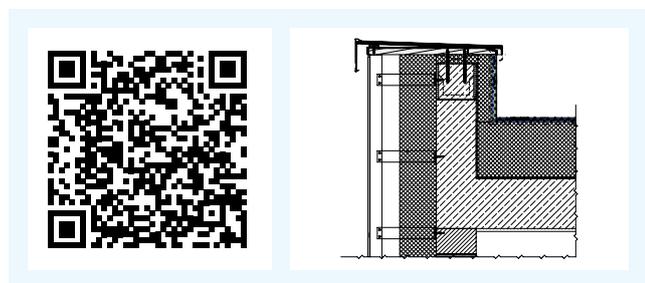
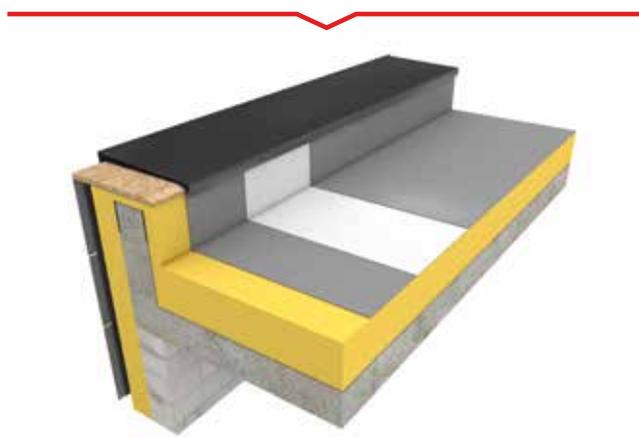
\* **Special agreement:** Required when using MB PUReactive+ as a waterproofing system, not when used as a regeneration layer



# Wall connections on new buildings

## Take the strain out of detail work

Specially formulated waterproofing materials are required for rising components, because the material must not slide or slump down once applied. MB PUReactive TX is a stable product that has been developed for this purpose and reliably seals a wide range of surfaces and constructions.



You can find detailed information and recommendations on preparing the substrate for the MB PUReactive family in our primer recommendation guide.

### Waterproofing with fabric

Structure	Product/details (page)	Appl. rate
1 Waterpr. (1st layer)	MB PUReactive TX P. 45	~ 1.50 kg/m <sup>2</sup>
2 Fabric reinforcement	MB PUReactive F-series P. 48	~ 110 g/m <sup>2</sup>
3 Waterpr. (2nd layer)	MB PUReactive TX P. 45	~ 1.50 kg/m <sup>2</sup>

### Waterproofing without fabric\*

Structure	Product/details (page)	Appl. rate
1 Waterpr. (1st layer)	MB PUReactive+ P. 46	~ 1.85 kg/m <sup>2</sup>
2 Waterpr. (2nd layer)	MB PUReactive+ P. 46	~ 1.85 kg/m <sup>2</sup>

\* **Special agreement:** required when using MB PUReactive+ as waterproofing system due to omission of fabric reinforcement

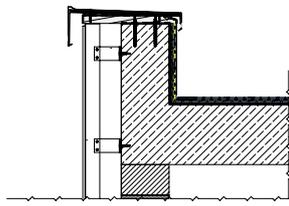
**Note:** waterproofing on insulation also without separation layer following consultation approval from the Remmers Technical Service (RTS)

# Wall connections on old waterproofings

## Substrate preparation according to primer recommendation

Wall connections and other rising components can be waterproofed to an excellent standard with MB PUReactive TX, even if an old waterproofing layer is still present. The product is designed to be stable so that it does not slide or slump, and adheres to virtually any substrate without primer. For more information on preparatory measures, it's worth taking a look at our primer recommendation guide.

Equally good results are possible with MB PUReactive+, which can be used without fabric reinforcement.



You can find detailed information and recommendations on preparing the substrate for the MB PUReactive family in our primer recommendation guide.

### Waterproofing with fabric

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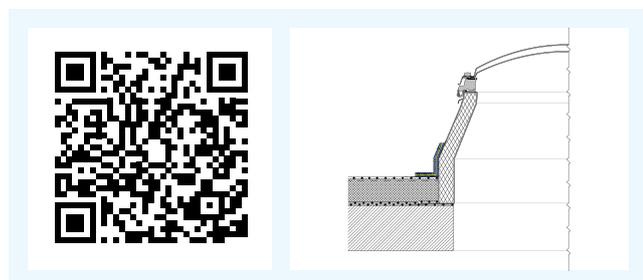
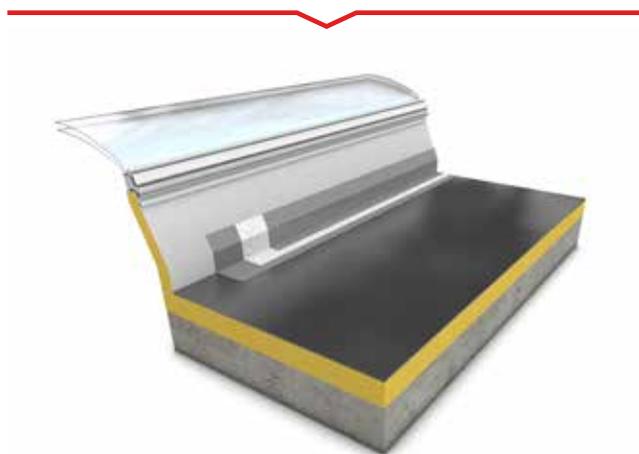
\* **Special agreement:** required when using MB PUReactive+ as waterproofing system due to omission of fabric reinforcement



# Dome lights

## MB PUReactive TX for roof penetrations of all kinds

Dome lights and ventilation shafts naturally represent weak points in the roof waterproofing. These roof penetrations can be sealed quickly and reliably with MB PUReactive TX, the stable PU hybrid waterproofing, or even the fibre-reinforced MB PUReactive+ for application without fabric reinforcement.



<b>Waterproofing with fabric</b>			
Structure	Product/details (page)		Appl. rate
1 Waterpr. (1st layer)	MB PUReactive TX P. 45		~ 1.50 kg/m <sup>2</sup>
2 Fabric reinforcement	MB PUReactive F-series P. 48		~ 110 g/m <sup>2</sup>
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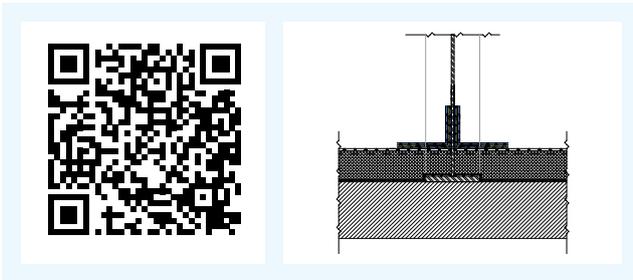
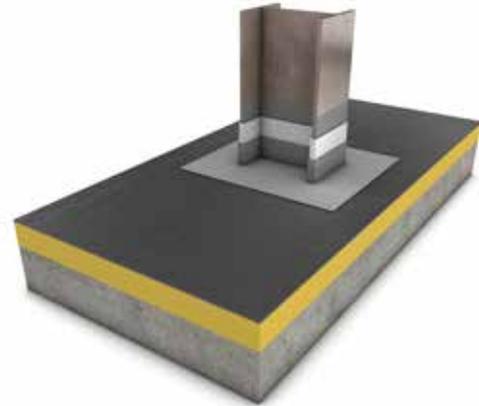
<b>Waterproofing without fabric*</b>			
Structure	Product/details (page)		Appl. rate
1 Waterpr. (1st layer)	MB PUReactive+ P. 46		~ 1.85 kg/m <sup>2</sup>
2 Waterpr. (2nd layer)	MB PUReactive+ P. 46		~ 1.85 kg/m <sup>2</sup>

\* Possible in case of regeneration

# Double-T beams

## Roof penetrations require special protection

When it comes to integrating components, such as beams, the stresses due to movement, e.g. thermal expansion, play a significant role. Thanks to its good crack-bridging properties, Remmers MB PUReactive TX simply goes along with these movements. MB PUReactive+ can be used for waterproofing without the need for fabric reinforcement.



### Waterproofing with fabric

Structure	Product/details (page)	Appl. rate
1 Waterpr. (1st layer)	MB PUReactive TX P. 45	~ 1.50 kg/m <sup>2</sup>
2 Fabric reinforcement	MB PUReactive F-series P. 48	~ 110 g/m <sup>2</sup>
3 Waterpr. (2nd layer)	MB PUReactive TX P. 45	~ 1.50 kg/m <sup>2</sup>

### Waterproofing without fabric\*

Structure	Product/details (page)	Appl. rate
1 Waterpr. (1st layer)	MB PUReactive+ P. 46	~ 1.85 kg/m <sup>2</sup>
2 Waterpr. (2nd layer)	MB PUReactive+ P. 46	~ 1.85 kg/m <sup>2</sup>

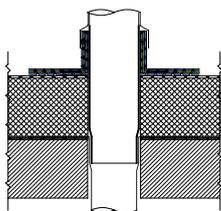
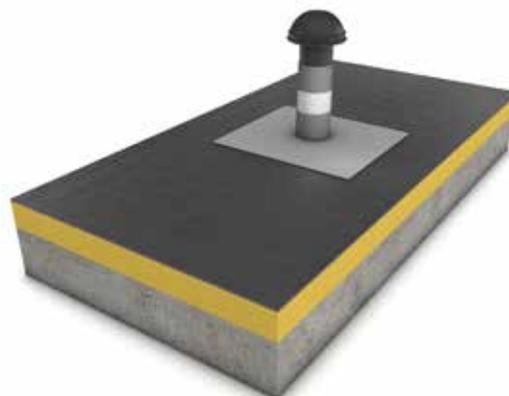


\* **Special agreement:** required when using MB PUReactive+ as a waterproofing system, not when used as a regeneration layer

# Flat roof vents

## Durable sealing of roof penetrations

Whether on expansion vents for drying out saturated roof layers or used as an inspection opening, or on ventilation pipes from kitchens and bathrooms, MB PUReactive TX or MB PUReactive+ (no fabric reinforcement) can be used for easy, fast and reliable waterproofing of flat roof vents.



### Waterproofing with fabric

Structure	Product/details (page)	Appl. rate
1 Waterpr. (1st layer)	MB PUReactive TX P. 45	~ 1.50 kg/m <sup>2</sup>
2 Fabric reinforcement	MB PUReactive F-series P. 48	~ 110 g/m <sup>2</sup>
3 Waterpr. (2nd layer)	MB PUReactive TX P. 45	~ 1.50 kg/m <sup>2</sup>

### Waterproofing without fabric\*

Structure	Product/details (page)	Appl. rate
1 Waterpr. (1st layer)	MB PUReactive+ P. 46	~ 1.85 kg/m <sup>2</sup>
2 Waterpr. (2nd layer)	MB PUReactive+ P. 46	~ 1.85 kg/m <sup>2</sup>



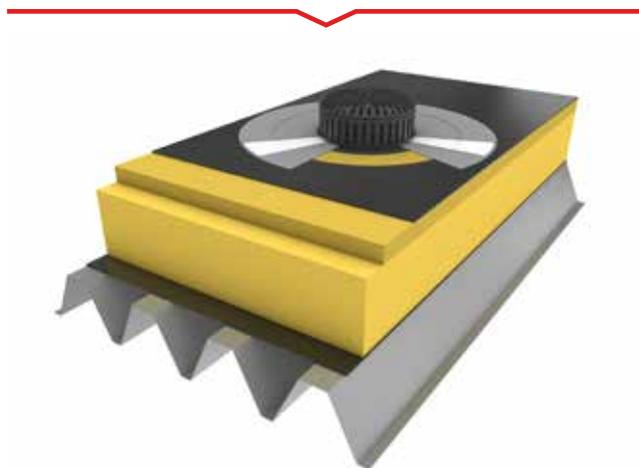
\* Possible in case of regeneration



# Flat roof drainage

## Waterproofing and drainage must work together

Drainage is needed on flat roofs so that rainwater is guided away and does not accumulate, since this in turn leads to moisture damage and deformation – and in extreme cases could even endanger the building structure.



### Waterproofing with fabric

Structure	Product/details (page)	Appl. rate
1 Waterpr. (1st layer)	MB PUReactive TX P. 45	~ 1.50 kg/m <sup>2</sup>
2 Fabric reinforcement	MB PUReactive F-series P. 48	~ 110 g/m <sup>2</sup>
3 Waterpr. (2nd layer)	MB PUReactive TX P. 45	~ 1.50 kg/m <sup>2</sup>

### Waterproofing without fabric\*

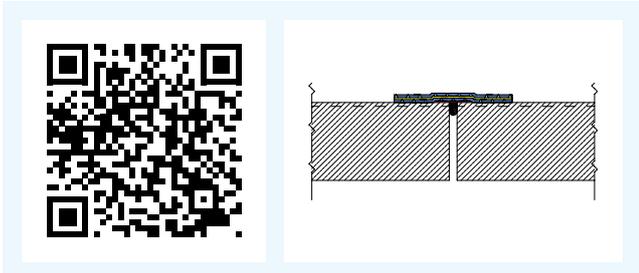
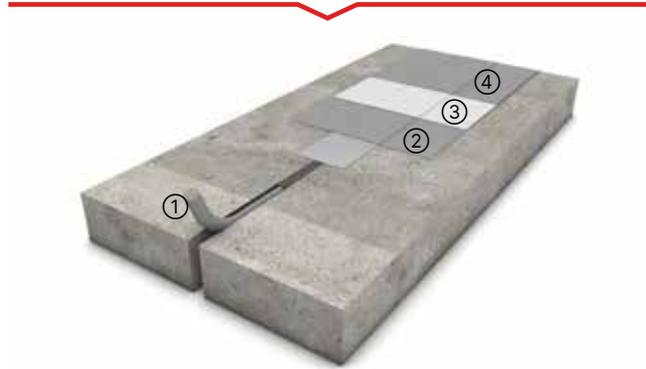
Structure	Product/details (page)	Appl. rate
1 Waterpr. (1st layer)	MB PUReactive+ P. 46	~ 1.85 kg/m <sup>2</sup>
2 Waterpr. (2nd layer)	MB PUReactive+ P. 46	~ 1.85 kg/m <sup>2</sup>

\* Possible in case of regeneration

# Movement joints

## Waterproofing while absorbing movements

If possible, the waterproofing of movement joints should be raised from the water-bearing plane and formed into a high point of the roof surface. But even if this isn't possible, long-lasting waterproofing is ensured with MB PUReactive.

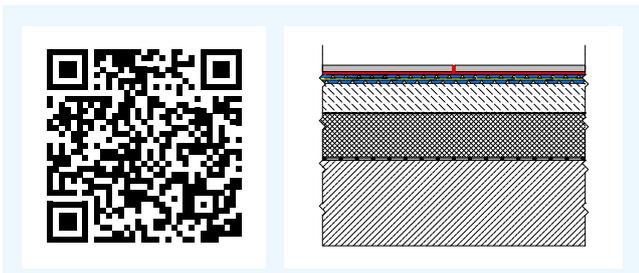
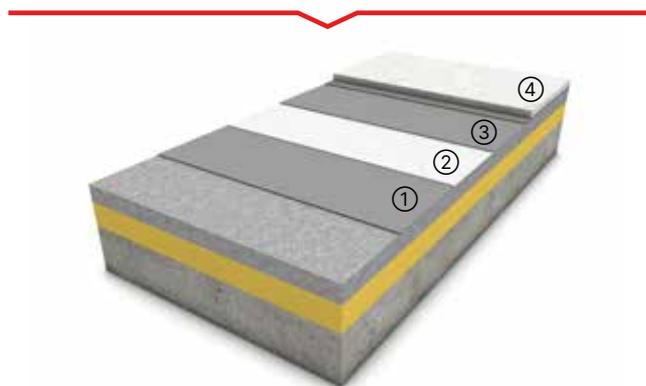


Waterproofing with fabric			
Structure	Product/details (page)		Appl. rate
1 Joint backfilling	Round Cord	P. 51	as needed
2 Waterpr. (1st layer)	MB PUReactive	P. 44	~ 1.50 kg/m <sup>2</sup>
3 Fabric reinforcement	MB PUReactive F-series	P. 48	~ 110 g/m <sup>2</sup>
4 Waterpr. (2nd layer)	MB PUReactive	P. 44	~ 1.50 kg/m <sup>2</sup>

# Waterproofing under tiles

## Water-tight system for roof surfaces with living space underneath

Tiled roof surfaces that are used as extra living space are subjected to heavy stresses. Extreme temperature and weather loads create enormous amounts of tension between the tiles and the substrate. With MB PUReactive, the new PU hybrid waterproofing, it is now possible to install waterproofing beneath tiles with ease.



Structure	Product/details (page)		Appl. rate
1 Waterpr. (1st layer)	MB PUReactive	P. 44	~ 1.50 kg/m <sup>2</sup>
2 Fabric reinforcement	MB PUReactive F-series	P. 48	~ 110 g/m <sup>2</sup>
3 Waterpr. (2nd layer)	MB PUReactive	P. 44	~ 1.50 kg/m <sup>2</sup>
4 Tile cement (alternative:)	MB FL 2K FL Fix		~ 1.3 kg/m <sup>2</sup> /mm ~ 1.1 kg/m <sup>2</sup> /mm

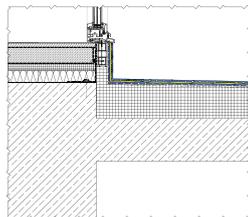
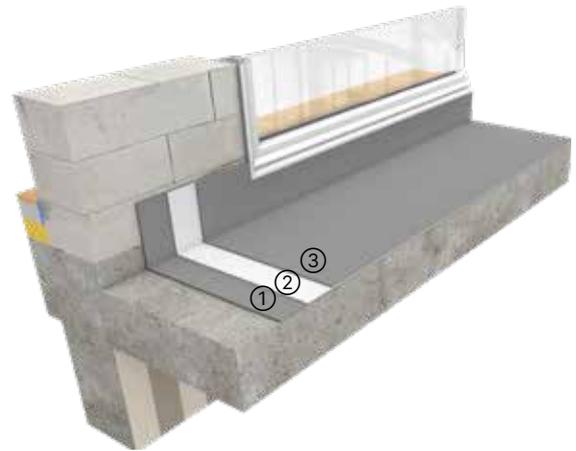
# Full-length windows

## Structures that require a special approach to waterproofing

Barrier-free transitions, level transitions or those with a permissible threshold height  $\leq 2$  cm count as special structures in waterproofing terms. They require a solution that is individually adapted to the case at hand.<sup>1</sup>

For these level transitions, it must be taken into account that the waterproofing layer alone cannot guarantee the function of water-tightness at the door connection. Water must be prevented from penetrating and running behind the waterproofing layer by way of planning specifications.

<sup>1</sup> Reducing the connection height of the waterproofing in the door area from  $\geq 15$  cm to  $\geq 5$  cm over the covering requires the installation of drainage before and across the entire width of the door.



### Waterproofing with fabric

Structure	Product/details (page)	Appl. rate
1 Waterpr. (1st layer)	MB PUReactive TX P. 45	~ 1.50 kg/m <sup>2</sup>
2 Fabric reinforcement	MB PUReactive F-series P. 48	~ 110 g/m <sup>2</sup>
3 Waterpr. (2nd layer)	MB PUReactive TX P. 45	~ 1.50 kg/m <sup>2</sup>

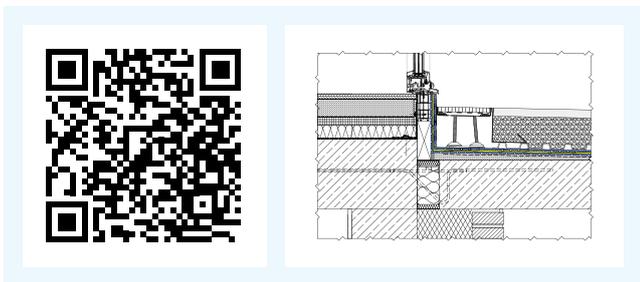




# Slabs on drainage filling material

## Walkable flat roofs with slabs in gravel bed

Walkable flat roofs are becoming an ever more popular choice. Terrace and balcony features increase the size and quality of a living space. Safe, reliable flat roof waterproofing with MB PUReactive or MB PUReactive TX is a solid foundation for a functional construction. And MB PUReactive+ can also be used without any fabric.



Waterproofing with fabric				
Structure	Product/details (page)		Appl. rate	
1 Waterpr. (1st layer)	MB PUReactive/	P. 44	~ 1.50 kg/m <sup>2</sup>	
	MB PUReactive TX	P. 45	~ 1.50 kg/m <sup>2</sup>	
2 Fabric reinforcement	MB PUReactive F-series	P. 48	~ 110 g/m <sup>2</sup>	
3 Waterpr. (2nd layer)	MB PUReactive/	P. 44	~ 1.50 kg/m <sup>2</sup>	
	MB PUReactive TX	P. 45	~ 1.50 kg/m <sup>2</sup>	

Waterproofing without fabric*				
Structure	Product/details (page)		Appl. rate	
1 Waterpr. (1st layer)	MB PUReactive+	P. 46	~ 1.85 kg/m <sup>2</sup>	
2 Waterpr. (2nd layer)	MB PUReactive+	P. 46	~ 1.85 kg/m <sup>2</sup>	

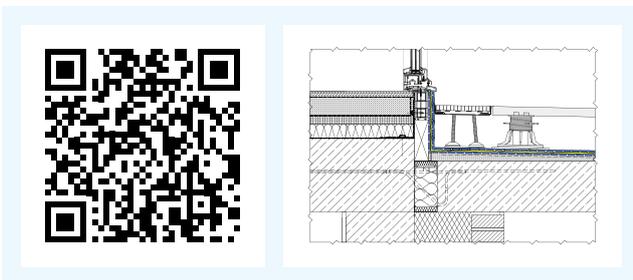
\* Special agreement: required when using MB PUReactive+ as waterproofing system due to omission of fabric reinforcement



# Slabs on support pads

## Simple and durable terrace and balcony design

The most cost-effective and straightforward method is to construct a frost-proof support pad with a protective layer on the waterproofing. An even more important factor is the underlying flat roof waterproofing – this is where MB PUReactive or MB PUReactive TX come in. The work can be completed even faster with MB PUReactive+, since no reinforcing fabric is required. All in all, it's a solution you can rely on.



### Waterproofing with fabric

Structure	Product/details (page)	Appl. rate
1 Waterpr. (1st layer)	MB PUReactive/ P. 44	~ 1.50 kg/m <sup>2</sup>
	MB PUReactive TX P. 45	~ 1.50 kg/m <sup>2</sup>
2 Fabric reinforcement	MB PUReactive F-series P. 48	~ 110 g/m <sup>2</sup>
3 Waterpr. (2nd layer)	MB PUReactive/ P. 44	~ 1.50 kg/m <sup>2</sup>
	MB PUReactive TX P. 45	~ 1.50 kg/m <sup>2</sup>

### Waterproofing without fabric\*

Structure	Product/details (page)	Appl. rate
1 Waterpr. (1st layer)	MB PUReactive+ P. 46	~ 1.85 kg/m <sup>2</sup>
2 Waterpr. (2nd layer)	MB PUReactive+ P. 46	~ 1.85 kg/m <sup>2</sup>

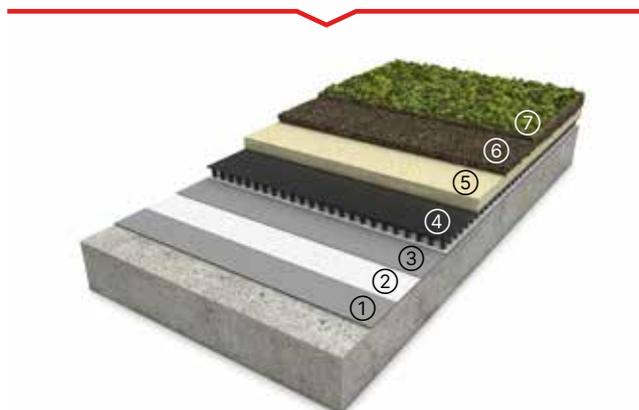
\* **Special agreement:** required when using MB PUReactive+ as waterproofing system due to omission of fabric reinforcement

# Extensive green roofs

## New waterproofing or repairs on roofs with low-maintenance planting

Low-maintenance and undemanding vegetation is used for extensive green roofs. The choice of plants is limited to hardy types that can also withstand extreme weather, preferably succulents, sedum, herbs and grasses. Extensive green roof systems are suitable for all flat and pitched roofs. Of course, a functional green roof system has to be underpinned by a secure waterproofing system that safely and reliably protects the substrate.

For the ideal solution, look no further than the green roof systems from Nophadrain in combination with MB PUReactive.



Structure	Product/details (page)	Appl. rate
1 Waterpr. (1st layer)	MB PUReactive P. 44	~ 1.50 kg/m <sup>2</sup>
2 Fabric reinforcement	MB PUReactive F-series P. 48	~ 110 g/m <sup>2</sup>
3 Waterpr.(2nd layer)	MB PUReactive P. 44	~ 1.50 kg/m <sup>2</sup>
4 Drainage system	ND 4+1h	
5 Substrate mat	ND SM-50	50 mm
6 Extensive substrate	ND DGS-E	30 mm
7 Vegetation mat	ND Sedum	20 mm



### Green roof systems

We recommend using green roof systems from Nophadrain over our highly durable MB PUReactive roof waterproofing!

You can find out more here: [www.nophadrain.de](http://www.nophadrain.de)



# Intensive green roofs

## New waterproofing or repairs on roofs with intensive planting

Just like a fully fledged garden or park, intensive green roof systems can be designed with lawns, shrubs and trees. Even combined designs are possible, consisting of planting and paving to create entire roof gardens. These spaces require large amounts of water and maintenance.

Intensive green roof systems are only suitable for creating sustainable green spaces on the roofs of houses, offices and industrial premises. The success of the green roof system depends heavily on the roof waterproofing, which protects the building from water and materials that could damage the building substance.



Structure	Product/details (page)	Appl. rate
1 Waterpr. (1st layer)	MB PUReactive P. 44	~ 1.50 kg/m <sup>2</sup>
2 Fabric reinforcement	MB PUReactive F-series P. 48	~ 110 g/m <sup>2</sup>
3 Waterpr. (2nd layer)	MB PUReactive P. 44	~ 1.50 kg/m <sup>2</sup>
4 Sliding and protection film	ND TSF-100	
5 Drainage system	ND 4+1h	
6 Water storage mat	ND WSM-50	
7 Intensive substrate	ND DGS-I	< 50 mm
Mineral substrate	ND DGS-M	> 50 mm



# Mixing technology

## For optimum mixing of MB PUReactive

For mixing the products of the MB PUReactive family, we recommend basket stirrers such as the Collomix® Stirrer KR or the Collomix® Stirrer DLX.

As an alternative to mixing in a hobcock, the products can also be mixed in large quantities using the Collomix® LevMix. This is a standard mixer that can be used to mix up to three containers simultaneously.

### **Mixing:**

Stir the liquid component using a suitable tool. Then add all of the loosened powder component to the liquid component. Mix the product for approx. 60 seconds. After the first mixing procedure, scrape off any powder sticking to the edge of the container. Then continue mixing for 2 more minutes.



# Choosing the right processing techniques

## Manual application

The products of the MB PUReactive family should be applied to the prepared substrate using a suitable tool (roller, flat brush, paintbrush and trowel).

When using the reinforcing fabric from the MB PUReactive F-series, it must be ensured that it is embedded properly in the material, with no air bubbles, and is covered completely. The fabric must be embedded with an overlap of min. 5 cm.

The layer thickness must be selected depending on the use case and product. The working temperature must be between min. +5 °C and max. +40 °C. The maximum total wet film thickness must not exceed 3 mm. The fresh waterproofing must be protected against rain, frost and condensation. Direct sunlight and/or wind can cause accelerated skin formation on liquid-applied waterproofing materials.





## Machine application

For application to large areas, we recommend using suitable machine technology. Various types of conveying systems can be used:

**Spiral pump,**

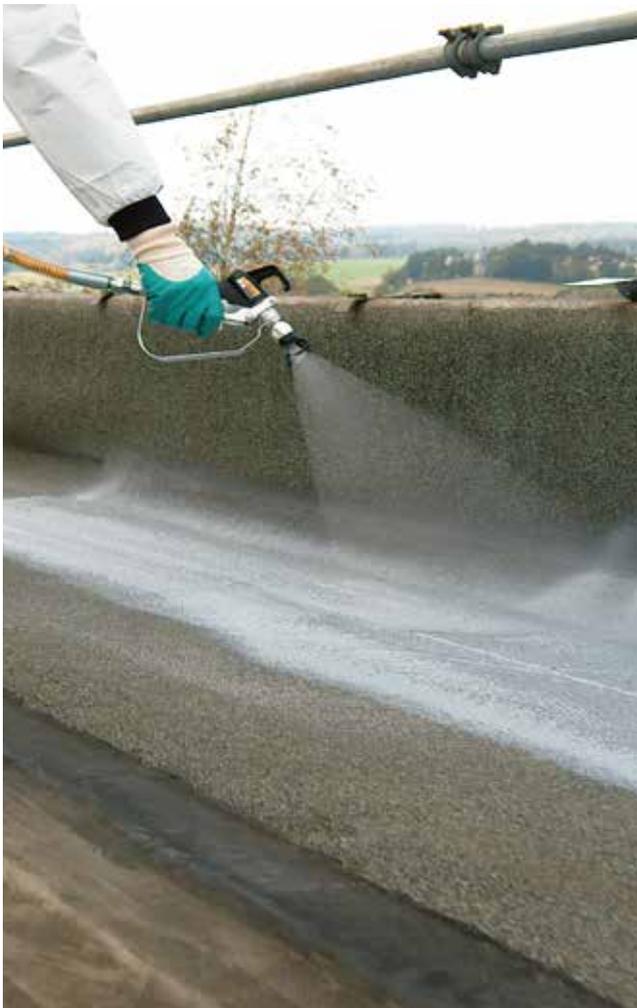
e.g. Dittmann (SP Small II and SP Pictor)

**Peristaltic pump,**

e.g. Innotec (InnoBeam M8)

**Airless sprayer,**

e.g. GRACO (Mark X HD, DutyMax EH300 HD)



The product must be mixed separately beforehand and then fed to the machine technology. You can find details of suitable mixing technology on page 38.

If using a sprayer, at least 2 applications of the waterproofing are required. The more frequently subsequent spray applications are applied, the finer the resulting surface finish. This method also promotes faster drying. The maximum layer thickness should not exceed 2 mm per spray application. This ensures an even finish.

### Need help with application?

Remmers Technical Service would be happy to advise you on machine processing and offer some tips and tricks on how to achieve the best results. You can get in touch with our team via our **service hotline: +49 (0) 54 32/83-900**

# System products for a long-lasting flat roof



**The benefits for you –  
the promise from us:**

- ✓ Optimum processing characteristics
- ✓ Approved in the highest performance classes

## Recommended products



### MB PUReactive

Hybrid waterproofing for flat roofs and balconies



### MB PUReactive TX

Stable hybrid waterproofing for flat roofs and balconies



### MB PUReactive+

Fibre-reinforced hybrid waterproofing for flat roofs and balconies



### MB PUReactive P-1

1K primer for plastic and elastomer sheets



### MB PUReactive F-series

Reinforcement inlay in MB PUReactive and MB PUReactive TX



### Thinner V 103

Cleaning and thinning agent



### Selectmix 0/10

Filler mixture with special aggregate grading curve



### Collomix® Stirrer DLX

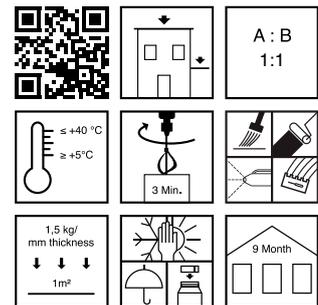
Collomix stirrer

# MB PUReactive

Hybrid waterproofing for flat roofs and balconies

Range of use	<ul style="list-style-type: none"> <li>▪ Flat roofs, balconies, loggias and walkways</li> <li>▪ Surfaces with and without living space underneath</li> <li>▪ New buildings</li> <li>▪ Renovation</li> <li>▪ Material transitions</li> </ul>
Property profile	<ul style="list-style-type: none"> <li>▪ Approved according to EAD 0303-50-00-0402 (formerly ETAG 005)</li> <li>▪ Very low emissions (GEV-EMICODE EC 1Plus)</li> <li>▪ Flexible crack-bridging &gt; 3 mm</li> <li>▪ Solvent-free</li> <li>▪ No odour</li> <li>▪ Optimised for manual application to the surface</li> <li>▪ Perfect adhesion on virtually any substrate without the need for primer</li> <li>▪ High surface area output, very high yielding</li> <li>▪ Fast drying times</li> <li>▪ Unique price/performance ratio</li> </ul>
Application rate	<ul style="list-style-type: none"> <li>▪ Min. 1.5 kg/m<sup>2</sup>/mm dry layer thickness</li> <li>▪ Total application rate min. 3 kg/m<sup>2</sup></li> </ul>

<b>Quantity per pallet</b>	<b>18</b>
<b>Packaging unit</b>	<b>25 kg</b>
	Combi-container (12.5 kg PC + 12.5 LC)
<b>Container code</b>	11
<b>Art. no.</b>	
3003	■

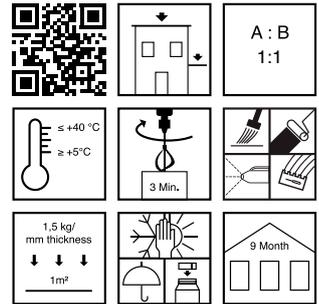


System products	Art. no.
V 103	(5699)
Selectmix 0/10	(6750)
MB PUReactive P-1	(4150)
MB PUReactive F-series	

# MB PUReactive TX

Stable hybrid waterproofing for flat roofs and balconies

Range of use	<ul style="list-style-type: none"> <li>▪ Flat roofs, balconies, walkways</li> <li>▪ Surfaces with and without living space underneath</li> <li>▪ New buildings</li> <li>▪ Renovation</li> <li>▪ Vertical areas</li> <li>▪ Material transitions</li> <li>▪ Connections to feed-throughs and rising components</li> <li>▪ Waterproofing of full-length windows over flat roofs, balconies, loggias and walkways</li> <li>▪ Plinth and render waterproofing over flat roofs, balconies, loggias and walkways</li> </ul>
Property profile	<ul style="list-style-type: none"> <li>▪ Approved according to EAD 0303-50-00-0402 (formerly ETAG 005)</li> <li>▪ Flexible crack-bridging &gt; 3 mm</li> <li>▪ Very low emissions (GEV-EMICODE EC 1)</li> <li>▪ Fire behaviour class B-s1, d0 (DIN EN 13501-1)</li> <li>▪ Solvent-free</li> <li>▪ No odour</li> <li>▪ Stable</li> <li>▪ Optimised for manual application on details and spray application</li> <li>▪ Perfect adhesion on virtually any substrate without the need for primer</li> <li>▪ High surface area output, very high yielding</li> <li>▪ Fast drying times</li> <li>▪ Unique price/performance ratio</li> </ul>
Application rate	<ul style="list-style-type: none"> <li>▪ Approx. 1.5 kg/m<sup>2</sup>/mm dry layer thickness</li> <li>▪ Total application rate min. 3 kg/m<sup>2</sup></li> </ul>



System products	Art. no.
V 103	(5699)
Selectmix 0/10	(6750)
MB PUReactive P-1	(4150)
MB PUReactive F-series	

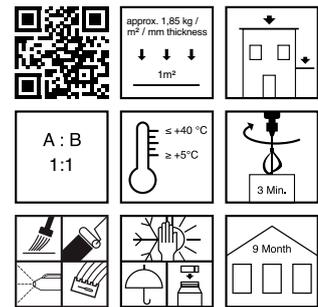
Quantity per pallet	32	18
<b>Packaging unit</b>	<b>10.5 kg</b>	<b>25 kg</b>
	Combi-container (3 × 1.75 kg PC + 3 × 1.75 kg LC)	Combi-container (1 × 12.5 kg PC + 1 × 12.5 kg LC)
<b>Container code</b>	10	11
<b>Art. no.</b>		
2980	■	■

# MB PUReactive+

Fibre-reinforced hybrid waterproofing for flat roofs and balconies

Range of use	<ul style="list-style-type: none"> <li>Flat roofs, balconies, loggias and walkways</li> <li>Surfaces with and without living space underneath</li> <li>New buildings</li> <li>Renovation</li> <li>Regeneration</li> <li>Vertical areas</li> <li>Material transitions</li> <li>Connections to feed-throughs and rising components</li> <li>Plinth and render waterproofing over flat roofs, balconies, loggias and walkways</li> </ul>
Property profile	<ul style="list-style-type: none"> <li>Approved according to EAD 0303-50-00-0402 (formerly ETAG 005)</li> <li>Very low emissions (GEV-EMICODE EC 1Plus)</li> <li>Can be used without reinforcement fabric</li> <li>Fibre-reinforced</li> <li>One material, simple process</li> <li>Flexible crack-bridging &gt; 3 mm</li> <li>Solvent-free</li> <li>No odour</li> <li>Optimised for manual and spray application</li> <li>Perfect adhesion on virtually any substrate without the need for primer</li> <li>High surface area output, very high yielding</li> <li>Fast drying times</li> <li>Unique price/performance ratio</li> <li>As cost-effective as sheet waterproofing</li> </ul>
Application rate	<ul style="list-style-type: none"> <li>Min. 1.85 kg/m<sup>2</sup>/mm dry layer thickness</li> <li>Total application rate min. 3.7 kg/m<sup>2</sup></li> </ul>

<b>Quantity per pallet</b>	<b>32</b>	<b>18</b>
<b>Packaging unit</b>	<b>10.5 kg</b>	<b>25 kg</b>
	Combi-container (3 × 1.75 kg PC + 3 × 1.75 kg LC)	Combi-container (12.5 kg PC + 12.5 kg LC)
<b>Container code</b>	10	11
<b>Art. no.</b>		
2982	■	■



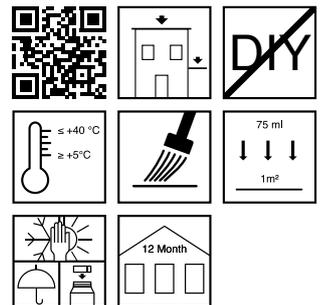
System products	Art. no.
MB PUReactive P-1	(4150)
V 103	(5699)
Selectmix 0/10	(6750)

# MB PUReactive P-1

1K primer for plastic and elastomer sheets

Range of use	▪ Primer for plastic and elastomer sheets
Property profile	▪ Ready to use ▪ Can be overcoated after 15 minutes ▪ Fast drying ▪ Optimum adhesion to many substrates ▪ Good self-adhesion
Application rate	▪ Approx. 75 ml/m <sup>2</sup>

<b>Quantity per pallet</b>	<b>360</b>
<b>Packaging unit</b>	<b>1 l</b> Tin canister
<b>Container code</b>	01
<b>Art. no.</b>	
4150	■



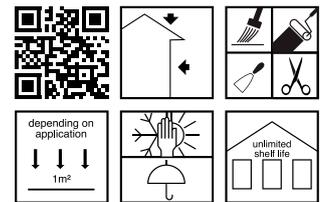
System products	Art. no.
MB PUReactive	(3003)
MB PUReactive TX	(2980)
MB PUReactive+	(2982)
V 103	(5699)

# MB PUReactive F

Reinforcement inlay in MB PUReactive and MB PUReactive TX

Range of use	■ Reinforcement inlay in MB PUReactive and MB PUReactive TX
Property profile	■ Surface weight approx. 110 g/m <sup>2</sup>

Quantity per pallet		15	30	45	60	75	150	150
Packaging unit		<b>50 m</b>	<b>20 pcs</b>	<b>20 pcs</b>				
		Roll	Roll	Roll	Roll	Roll	Bag	Bag
Container code		01	01	01	01	01	01	01
<b>Art. no.</b>								
4020	MB PUReactive F-1000 – width 1.00 m	■						
4152	MB PUReactive F-750 – width 0.75 m	■						
4153	MB PUReactive F-500 – width 0.50 m		■					
4154	MB PUReactive F-350 – width 0.35 m			■				
4155	MB PUReactive F-250 – width 0.25 m				■			
4156	MB PUReactive F-200 – width 0.20 m					■		
4157	MB PUReactive F-IC – internal corner						■	
4158	MB PUReactive F-EC – external corner							■



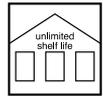
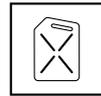
System products	Art. no.
MB PUReactive	(3003)
MB PUReactive TX	(2980)
V 103	(5699)



# V 103

Cleaning and thinning agent

Range of use	<ul style="list-style-type: none"> <li>■ Universal solvent for cleaning reactive resins that have not yet reacted</li> <li>■ Cleaning of non-absorbent, non-mineral substrates before using sealants of the MB PUReactive series</li> </ul>
Property profile	<ul style="list-style-type: none"> <li>■ Good cleaning action, especially on polyurethane-based binders</li> <li>■ Good thinning action, especially with Epoxy Universal</li> </ul>
Application rate	<ul style="list-style-type: none"> <li>■ Dependent on application (see Technical Data Sheet)</li> </ul>

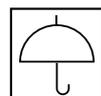


<b>Quantity per pallet</b>	<b>360</b>	<b>84</b>
<b>Packaging unit</b>	<b>1 l</b>	<b>5 l</b>
	Tin canister	Tin canister
<b>Container code</b>	01	05
<b>Art. no.</b>		
5699	■	■

# Selectmix 0/10

Filler mixture with special aggregate grading curve

Range of use	<ul style="list-style-type: none"> <li>■ Special filler for suitable Remmers systems</li> <li>■ Hollow cove mortar</li> <li>■ Repair mortar</li> </ul>
Property profile	<ul style="list-style-type: none"> <li>■ Universal</li> <li>■ For achieving high strengths</li> <li>■ Easy to smooth and self-compacting</li> </ul>
Application rate	<ul style="list-style-type: none"> <li>■ Dependent on application (see Technical Data Sheet)</li> </ul>



<b>Quantity per pallet</b>	<b>52</b>
<b>Packaging unit</b>	<b>10 kg</b>
	Plastic bucket
<b>Container code</b>	10
<b>Art. no.</b>	
6750	■

# Collomix® Stirrer DLX

Range of use	<ul style="list-style-type: none"> <li>Mixing liquid and flowable materials</li> <li>Mixing low- and medium-viscosity materials with a tendency to clump</li> </ul>
Property profile	<ul style="list-style-type: none"> <li>Intensive material mixing</li> <li>Two vertically arranged turbine blades</li> <li><b>Mixing quantity:</b> <ul style="list-style-type: none"> <li>DLX 120 HF: 15 - 30 litres</li> <li>DLX 152 HF: 30 - 50 litres</li> </ul> </li> <li>Connection for stirrer HF: HEXAFIX®</li> </ul>



<b>Packaging unit</b>	<b>1 pc</b>	
<b>Container code</b>	01	
<b>Art. no.</b>		
4298	DLX 120 HF	■
4286	DLX 152 HF	■



System products	Art. no.
MB PUReactive	(3003)
MB PUReactive TX	(2980)
MB PUReactive+	(2982)

# Collomix® Stirrer LX

Range of use	<ul style="list-style-type: none"> <li>Mixing low-viscosity, liquid and flowable materials</li> </ul>
Property profile	<ul style="list-style-type: none"> <li>High flow in the material</li> <li>Optimum mixing in minimal time</li> <li><b>Mixing quantity:</b> <ul style="list-style-type: none"> <li>LX 90 S: 5 - 15 Litres</li> </ul> </li> <li>Connection for stirrer S: Drill</li> <li>Connection for stirrer HF: HEXAFIX®</li> </ul>



<b>Packaging unit</b>	<b>1 pc</b>	
<b>Container code</b>	01	
<b>Art. no.</b>		
4297	LX 90 S	■



System products	Art. no.
MB PUReactive	(3003)
MB PUReactive TX	(2980)
MB PUReactive+	(2982)

# Round Cord

Highly elastic, closed-cell PE foam strands

Range of use	<ul style="list-style-type: none"> <li>Backfilling joints in interiors and exteriors</li> <li>For building construction joints acc. to DIN 18540</li> </ul>
Property profile	<ul style="list-style-type: none"> <li>Extruded backfilling material made from polyethylene (PE)</li> <li>Closed-cell acc. to DIN 18540</li> <li>Good compatibility</li> <li>Repels water</li> <li>Resistant to ageing</li> <li>Normal flammability (fire class B2)</li> </ul>
Application rate	<ul style="list-style-type: none"> <li>As needed</li> </ul>

Quantity per pallet	9000	5400	2250	1350	900	720	960
<b>Packaging unit</b>	<b>1500 m</b>	<b>600 m</b>	<b>250 m</b>	<b>150 m</b>	<b>100 m</b>	<b>80 m</b>	<b>120 m</b>
	Carton	Carton	Carton	Carton	Carton	Carton	Carton
<b>Container code</b>	01	01	01	01	01	01	01
<b>Art. no.</b>							
4260	ø 6 mm	■					
4261	ø 10 mm		■				
4262	ø 15 mm			■			
4263	ø 20 mm				■		
4264	ø 25 mm					■	
4265	ø 30 mm						■
4266	ø 40 mm						■



System products	Art. no.
MB PUReactive	(3003)
MB PUReactive F-series	

# Collomix® HEXAFIX® adapter

Range of use	<ul style="list-style-type: none"> <li>Connecting a HEXAFIX® stirrer HF to a handheld mixer with M14 thread</li> </ul>
Property profile	<ul style="list-style-type: none"> <li>External thread M14</li> <li>Coupling for quick exchange of stirrers</li> </ul>

<b>Packaging unit</b>	<b>1 pc</b>
<b>Container code</b>	01
<b>Art. no.</b>	
4283	■



System products
Collomix stirrer

# Remmers Quirlex

Cleaning bucket

Range of use	<ul style="list-style-type: none"><li>▪ Easy cleaning of stirrers for electric mixers</li><li>▪ <b>Note:</b> The top ring of brushes should be covered with approx. 1 - 2 cm of water.</li></ul>
Property profile	<ul style="list-style-type: none"><li>▪ For stirrers up to max. Ø 220 mm</li><li>▪ Cover, inner and outer bucket can be separated for cleaning</li><li>▪ Quick and efficient removal of material residue</li><li>▪ Filling volume: 30 l</li></ul>



<b>Packaging unit</b>	<b>1 pc</b>
<b>Container code</b>	01
<b>Art. no.</b>	
4282	■



## System products

Stirrer

# Flat brush

Range of use	<ul style="list-style-type: none"><li>▪ Applying primers and paints</li></ul>
Property profile	<ul style="list-style-type: none"><li>▪ Dimensions: 135 × 35 mm</li><li>▪ Bristle length: 50 mm</li></ul>

<b>Packaging unit</b>	<b>1 pc</b>
<b>Container code</b>	01
<b>Art. no.</b>	
4540	■



System products	Art. no.
MB PUReactive	(3003)
MB PUReactive TX	(2980)
MB PUReactive+	(2982)

# KANA® KanaClassic corner brush/flat brush

Range of use	<ul style="list-style-type: none"> <li>▪ Applying liquid and cream products</li> <li>▪ Applying primers, paints and solvent-based varnishes</li> </ul>
Property profile	<ul style="list-style-type: none"> <li>▪ Dimensionally stable</li> <li>▪ Optimum ratio of natural and synthetic bristles</li> <li>▪ High paint retention</li> <li>▪ Reduced swelling</li> </ul>

<b>Packaging unit</b>	<b>1 pc</b>	
<b>Container code</b>	01	
<b>Art. no.</b>		
4541	Corner brush width 50 mm	■
4611	Flat brush width 50 mm	■
4612	Flat brush width 80 mm	■



System products	Art. no.
MB PUReactive	(3003)
MB PUReactive TX	(2980)
MB PUReactive+	(2982)

# Pro nylon roller

Range of use	<ul style="list-style-type: none"> <li>▪ Applying coatings</li> </ul>
Property profile	<ul style="list-style-type: none"> <li>▪ Pile height: 14 mm</li> <li>▪ Material: Nylon</li> <li>▪ Lint-free</li> </ul>

<b>Packaging unit</b>	<b>200 pcs</b>	
	Carton	
<b>Container code</b>	01	
<b>Art. no.</b>		
5045	Width 10 cm	■
5049	Width 25 cm	■
5040	Width 50 cm	■



System products	Art. no.
Roller handle	(4449)
U-shaped roller handle	(5068)

# Roller handle

Range of use	<ul style="list-style-type: none"> <li>▪ Holding rollers</li> </ul>
Property profile	<ul style="list-style-type: none"> <li>▪ Galvanised steel bar with plastic handle</li> <li>▪ 10 cm roller handle suitable for roller widths up to 15 cm</li> </ul>

<b>Packaging unit</b>	<b>20 pcs</b>	
	Carton	
<b>Container code</b>	01	
<b>Art. no.</b>		
4449	10 cm	■
4445	25 cm	■



System products	Art. no.
Telescopic handle	(4391)
Rollers	

# Telescopic handle

Range of use	<ul style="list-style-type: none"> <li>▪ Holding tools for working on walls and floors</li> </ul>
Property profile	<ul style="list-style-type: none"> <li>▪ Extendable from 120 to 200 cm</li> </ul>

<b>Packaging unit</b>	<b>1 pc</b>	
	Carton	
<b>Container code</b>	01	
<b>Art. no.</b>		
4391	Steel	■
4392	Aluminium	■



System products	Art. no.
Roller handle	(4449)
U-shaped roller handle	(5068)
Sponge wiper	(5035)
Screed rake	(4568)
Notched scraper holder	(4630)
Angled scratch coat scraper	(4119)



# Product overview

Collomix® HEXAFIX® adapter	52
Collomix® Stirrer DLX	51
Collomix® Stirrer LX	51
Flat brush	53
Kana® KanaClassic flat brush	54
Kana® KanaClassic corner brush	54
MB PUReactive	44
MB PUReactive+	46
MB PUReactive F-series	48
MB PUReactive P-1	47
MB PUReactive TX	45
Pro nylon roller	54
Remmers Quirlex	53
Roller handle	55
Round Cord	52
Selectmix 0/10	50
Telescopic handle	55
Thinner V 103	50

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starting and  
never start  
stopping.”**

Guiding principle of  
Bernhard Remmers,  
founder

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Global contact:

[www.remmers.com/remmers-worldwide](http://www.remmers.com/remmers-worldwide)

**Remmers GmbH**

Bernhard-Remmers-Straße 13

49624 Lönningen

+49 (0) 54 32/83-0