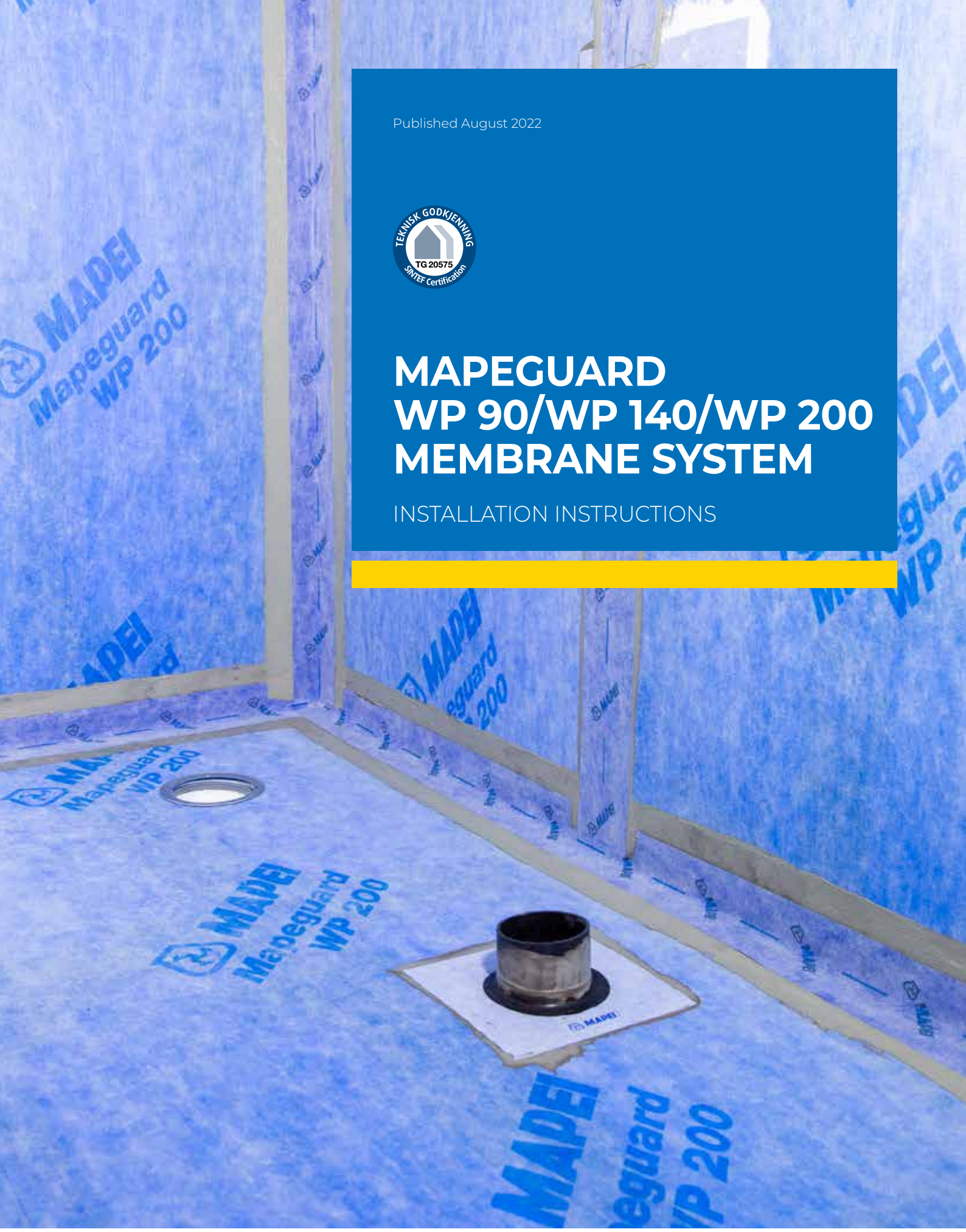

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TEKNISK GODKJENNING
TG 20575
SINTEF Certification

MAPEGUARD WP 90/WP 140/WP 200 MEMBRANE SYSTEM

INSTALLATION INSTRUCTIONS

MAPEI®

CE
0402

MAPEI
Vallsetvegen 6 – 2120 Sagstua (Norge)
www.mapei.no

16
CPR-NO1/0400
ETA 15/0257

Mapeguard WP 90 System, Mapeguard WP 140 System and Mapeguard WP 200 System

Watertight flexible covering sheets for wet room floors and/or walls in indoor application.

Reaction to fire:	Class E
Release of dangerous substances:	Emicode EC1 Plus
Water vapour permeability (at 23°C, 93—>50% RH):	
- with Mapeguard WP 90	1'040'000 s/m (Sd = 27,7 m)
- with Mapeguard WP 140	2'400'000 s/m (Sd = 66 m)
- with Mapeguard WP 200	5'340'342 s/m (Sd = 142 m)
Water vapour permeability (at 23°C, 100—>75% RH):	
- with Mapeguard WP 90	1'520'000 s/m (Sd = 40 m)
- with Mapeguard WP 140	2'800'000 s/m (Sd = 76 m)
- with Mapeguard WP 200	4'130'000 s/m (Sd = 110 m)
Watertightness:	Watertight
Crack bridging ability:	Category 3 (1,5 mm)
Bond strength to concrete:	Category 1 (≥ 0,2 MPa)
Bond strength to gypsum board:	Category 1 (≥ 0,2 MPa)
Joint bridging ability:	Category 2 (2 mm)
Water tightness around penetrations:	
- Annex A (floor)	Watertight
- Annex F (wall)	Watertight
Resistance to temperature	
- For Mapeguard WP 90 and 200	Deviation from unaged material: Tensile strength Longitudinal direction: -1,7 % Cross direction: -1,6 % Tensile elongation Longitudinal direction: -19 % Cross direction: -17 %
- For Mapeguard WP 140	Deviation from unaged material: Tensile strength Longitudinal direction: -9,2 % Cross direction: -4,3 % Tensile elongation Longitudinal direction: -17 % Cross direction: -16 %
Resistance to water:	Pass as Category 1 (≥ 0,2 MPa)
Resistance to alkalinity:	
- For Mapeguard WP 90 and WP 200	Deviation from unaged material: Tensile strength Longitudinal direction: +7,3 % Cross direction: +12,8 % Tensile elongation Longitudinal direction: -17,0 % Cross direction: -18,8 %
- For Mapeguard WP 140	Deviation from unaged material: Tensile strength Longitudinal direction: -7,3 % Cross direction: -7,6 % Tensile elongation Longitudinal direction: -15,1 % Cross direction: -17,3 %
Joint strength (Mapeguard WP 90 and WP 200)	
- Longitudinal direction (MD)	193 N/50 mm
- Cross direction (CMD)	134 N/50 mm
Joint strength (Mapeguard WP 140)	
- Longitudinal direction (MD)	151 N/50 mm
- Cross direction (CMD)	148 N/50 mm
Flexibility:	Pass
Thickness:	
- for Mapeguard WP 90	0,34 mm
- for Mapeguard WP 140	0,37 mm
for Mapeguard WP 200	0,48 mm

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PRODUCTS INCLUDED

MAPEGUARD WP 90/WP 200 MEMBRANE SYSTEM

PRODUCT TYPE	PRODUCT	THICKNESS	VAPOUR DENSITY
Membrane	MAPEGUARD WP 90	0.34	Sd > 40.3 m
Membrane	MAPEGUARD WP 140	0,37	Sd > 76.0 m
Membrane	MAPEGUARD WP 200	0.48	Sd > 110.0 m

ADHESIVE FOR MEMBRANE	PRODUCT	CONSUMPTION	READY FOR LAYING TILES
Adhesive	MAPEGUARD WP ADHESIVE	0.8 kg/m²	5 hours
Alternative adhesive for components	MAPEFLEX MS 45		

SEALS	PRODUCT		SIZE
Sealing tape	MAPEGUARD ST		12 cm x 10 / 30 m
Sealing tape	MAPEBAND EASY		13 cm x 10 / 30 m
Internal corners	MAPEGUARD IC		
Internal corners	MAPEBAND EASY INTERNAL ANGLE 90°		
External corners	MAPEGUARD EC		
External corners	MAPEBAND EASY EXTERNAL ANGLE 270°		
Pipe collar	MAPEGUARD PC 10–24 MM		10–24 mm
	MAPEGUARD PC 15–38 MM		15–38 mm
	MAPEGUARD PC 32–55 MM		32–55 mm
	MAPEGUARD PC 50–75 MM		50–75 mm
	MAPEGUARD PC 75–110 MM		75–110 mm
	MAPEGUARD PC 100–130 MM		100–130 mm
	MAPEGUARD WC 30X45 CM		30 x 45 cm
Drain collar	MAPEBAND B DC		37 x 37 cm
Drain collar, long	MAPEBAND B DC L		37 x 120 cm
Butyl tape	MAPEBAND B T		12 cm x 20 m

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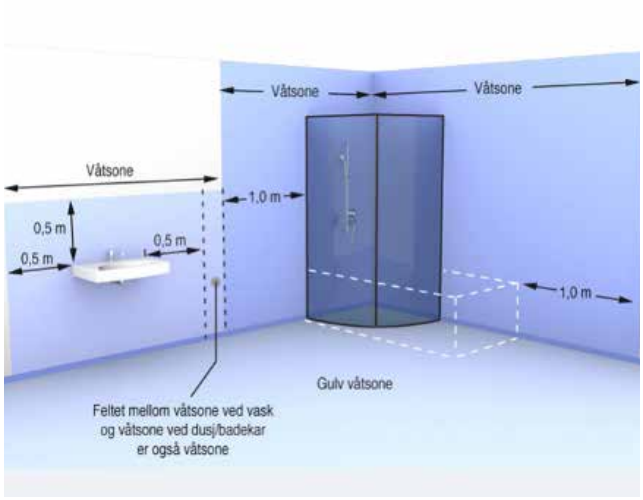
CONDITIONS FOR USE

VAPOUR DENSITY

MAPEGUARD WP 90/WP 140/WP 200 membrane system provides a vapour density of Sd > 40.3 m for MAPEGUARD WP 90 , Sd > 76.0 m for MAPEGUARD WP 140 and 110.0 m for MAPEGUARD WP 200. On walls and floors where the wet zone adjoins an outdoor environment or spaces with limited heating, the required vapour density is Sd > 10 m. MAPEGUARD WP 200, with an Sd of over 110 m, also satisfies the requirement as a membrane in swimming pool halls with a vapour density requirement of Sd > 50 m.



Source: TEK17 from dibk.no

APPLYING MEMBRANE

Wetroom membrane must be applied in all wet zones.

It is recommended that the membrane system is applied to flooring and all walls and transitions in the wetroom in order to ensure compliance with requirements for membrane and vapour density.

For product documentation in accordance with DIBK requirements, Technical approval from **SINTEF TG 20575** applies. This can be downloaded from mapei.no or from Sintef's website. **TG 20575** contains all current products and conditions for use.

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INSTALLING MAPEGUARD WP 90/WP 140/WP 200

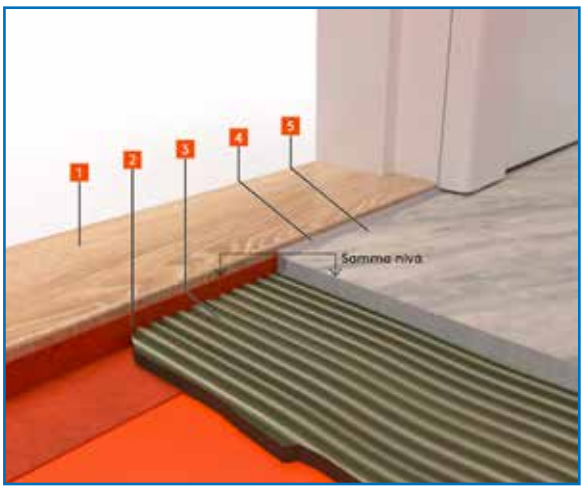

Illustration: BBV

SEALING TO A THRESHOLD

When sealing to a threshold, MAPEGUARD WP membrane system can be folded up to the level of the pre-laid floor. Alternatively, the up-fold from the membrane on the floor can be achieved using MAPEBAND B T butyl tape or MAPEGUARD ST/MAPEBAND EASY. Installation is as described for other surfaces.

1 Threshold
2 MAPEBAND B T/MAPEGUARD ST/MAPEBAND EASY
3 Tile cement
4 MAPESIL AC/MAPESIL LM
5 Tiles

TRANSITIONS BETWEEN WALLS AND FRAMES

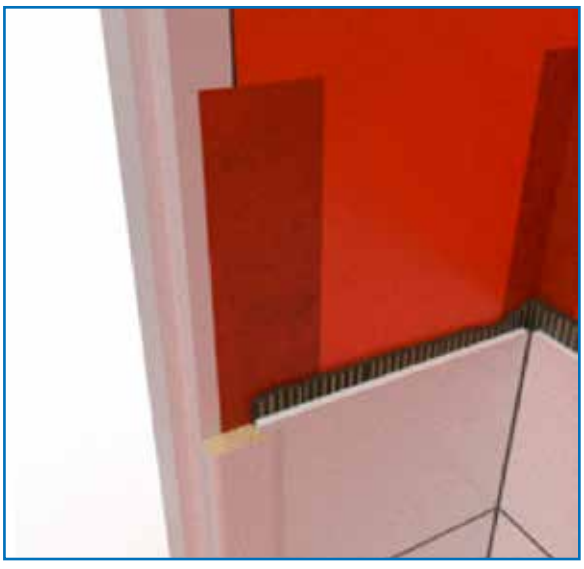

Illustration: BBV

Illustration: BBV

MAPEBAND B T or MAPEGUARD ST/MAPEBAND EASY

The door frame should be flush with the substrate for the membrane; see illustration. Thresholds and frames must be fitted before MAPEGUARD WP 90/WP 140/WP 200 membrane system is installed. Sealing to a frame can be done in the same way as to a threshold by joining using MAPEBAND EASY butyl tape or MAPEGUARD ST/MAPEBAND EASY sealing tape, or by overlapping using MAPEGUARD WP 90/WP 140/WP 200 membrane.

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INSTALLING MAPEGUARD WP 90/WP 140/WP 200

SEALING INSTALLATIONS IN A COMPLETED WETROOM

All holes for subsequent installations need to be sealed by filling the wall plug and the drilled hole with MAPESIL AC or MAPESIL LM when installing the screw.

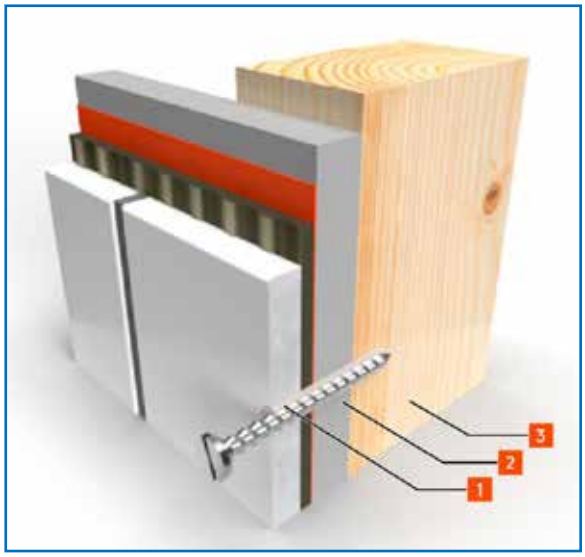

Illustration: BBV

1 MAPESIL AC/MAPESIL LM and optional wall plug
2 Sheet
3 Stud

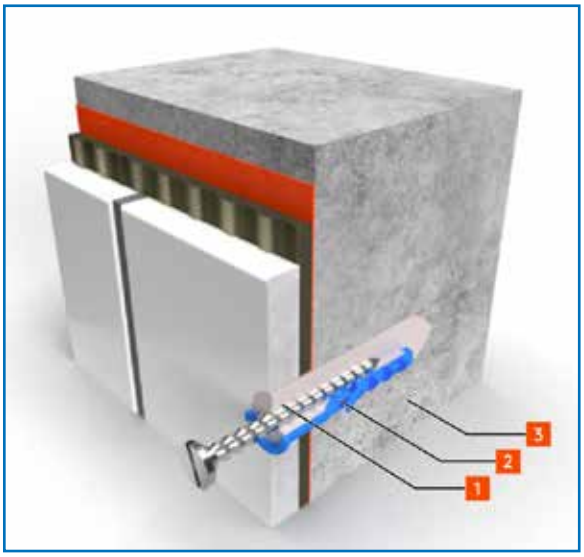

Illustration: BBV

1 MAPESIL AC/MAPESIL LM
2 Wall plug
3 Concrete wall

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INSTALLING MAPEGUARD WP 90/WP 200

REQUIREMENTS

1 The moisture content of the concrete substrate must be no more than 85% RH when applying the membrane.
The substrate must be clean and dry before application. Major cracks, areas of damage and depressions at screws must be repaired using filler beforehand. Loose particles, grease and oil must be removed from the substrate.
Remove cement laitance and any curing membrane from concrete substrate. Prepare the surface by grinding or blasting and vacuum-cleaning.

2 The substrate must always be vacuum-cleaned after preparation and before the product is applied.

3 Check that falls to drains are correct and that the floor does not have any depressions where water can accumulate.

4 Check that all pipe penetrations are firm and project at right angles from the wall or floor.

Suitable tools
- paint roller
- 50 mm radiator brush
- plastic wallpapering tools with rounded corners
- scissors
- knife
- steel square

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INSTALLING MAPEGUARD WP 90/WP 140/WP 200

PRIMING THE SUBSTRATE

1 PRIMER G – for absorbent substrates (concrete, screed, plaster and filler). Dilute with water depending on the substrate and apply using a roller or a brush.

2 ECO PRIM T PLUS – suitable for most types of substrate and ready for application using a roller or a brush.

Suitable tools
- paint roller
- 50 mm radiator brush
- plastic wallpapering tools with rounded corners
- scissors
- knife
- steel square

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INSTALLING MAPEGUARD WP 90/WP 140/WP 200

TRANSITIONS TO DRAINS

1 Remove the drain's clamping ring. Position the knife base or cutting template if provided with the drain.

2 Remove half the backing from the MAPEBAND B DC or MAPEBAND B DCL drain collar and stick down the exposed part half over the drain, with the collar centred over the drain.

3 Remove the rest of the backing and stick the remainder of the MAPEBAND B DC or MAPEBAND B DCL down over the drain. Make sure the drain collar is stuck down flat and that there are no air pockets.

Transitions to the Mapeguard WP system are described later on in the installation instructions. Transitions to other drain variants are described in separate installation instructions.

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INSTALLING MAPEGUARD WP 90/WP 140/WP 200

PREPARING FOR INSTALLING MEMBRANE

1 Measure the surfaces to be sealed using the membrane and cut out appropriately sized pieces of MAPEGUARD WP 90/WP 140/WP 200. It might help to try out the membrane in place before sticking it down in order to make better use of the time after mixing the adhesive. Make sure there are no joins over the drain. Cut out holes for all pipe penetrations.

2 Apply MAPEGUARD WP 90/WP 140/WP 200 using cementitious two-component MAPEGUARD WP ADHESIVE.

3 Pour powder into a clean bucket. Add part of component B, mix into the powder then add the remainder. Using a drill with a whisk, mix at low speed for 2–3 minutes until the mixture is consistent and free from lumps.

4 Scrape the edge of the mixing bucket to ensure all the material is mixed.

To make the adhesive easier to apply with a roller and brush, 5% water by weight can be added to component B, i.e. approx. 150 ml per set of MAPEGUARD WP ADHESIVE.

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INSTALLING MAPEGUARD WP 90/WP 140/WP 200

INSTALLING MEMBRANE ON WALLS AND FLOORS

1 Before applying MAPEGUARD WP ADHESIVE, you need a roller for large areas, a brush for details and a mason's trowel.

2 Apply MAPEGUARD WP ADHESIVE to the surface that is to be covered.

3 Do not apply adhesive to a surface larger than you can apply MAPEGUARD WP 90/WP 140/WP 200 to within 15 min.

INSTALLING MAPEGUARD WP 90/WP 140/WP 200

INSTALLING MEMBRANE – METHOD A: OVERLAPPING

1 MAPEGUARD WP 90/WP 140/WP 200 can be folded in order to overlap the membrane in corners. The membrane must be folded so that all overlaps are at least 5 cm.

2 Install MAPEGUARD WP 90/WP 140/WP 200 so that there is an edge of at least 5 cm projecting from all corners. MAPEGUARD WP 90/WP 140/WP 200 has a dashed edge line indicating 5 cm.

3 Press out all air pockets and scrape off surplus adhesive.

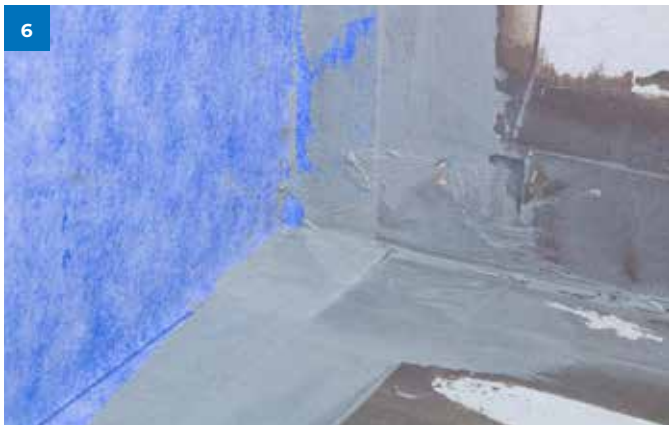
4 The illustration shows how to spread membrane around an internal corner in order to ensure an overlap of at least 5 cm without cutting the membrane and using a corner piece.

INSTALLING MAPEGUARD WP 90/WP 140/WP 200

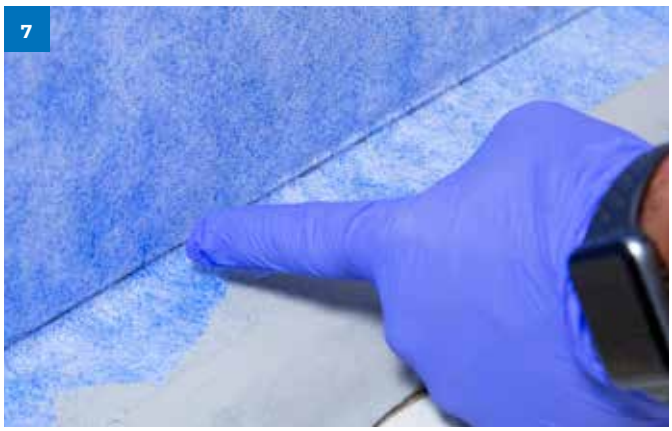
INSTALLING MEMBRANE – METHOD A: OVERLAPPING

5 Ensure the membrane is completely coated in adhesive and that folds in corners are glued together.

6 Folded and glued membrane in an internal corner.



7 The membrane has an edge line that indicates the minimum overlap of 5 cm. An overlap must be on or within this line.



8 Install the next sheet with sufficient overlap.

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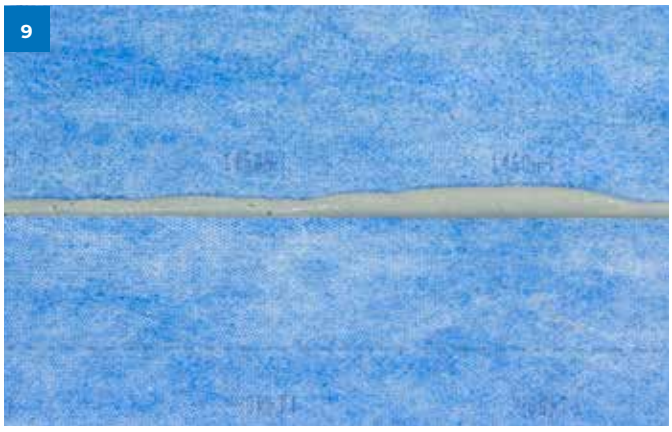
INSTALLING MAPEGUARD WP 90/WP 140/WP 200

INSTALLING MEMBRANE – METHOD A: OVERLAPPING

9 When installing the membrane, all air pockets and surplus adhesive must be pressed out using a suitable tool without a sharp edge that might damage the membrane.



10 Scrape off any surplus adhesive.

11 Installed MAPEGUARD WP 90/WP 140/WP 200 on walls using overlapping. Ready for installing the floor.

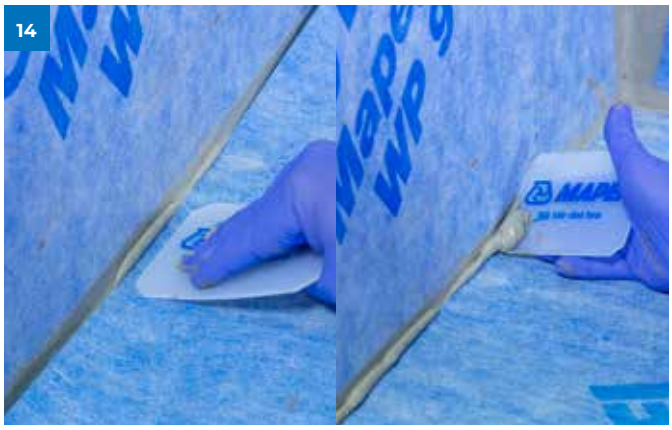
12 Apply MAPEGUARD WP ADHESIVE to the floor right up to the wall on the folded corners of the wall sheet.

INSTALLING MAPEGUARD WP 90/WP 140/WP 200

INSTALLING MEMBRANE – METHOD A: OVERLAPPING

13 Apply MAPEGUARD WP 90/WP 140/WP 200 to the floor with a sufficient overlap (5 cm) over the membrane on the walls.

14 Press out any air pockets and scrape off surplus adhesive.



15 Installed MAPEGUARD WP 90/WP 140/WP 200 with overlapping to walls and floor.

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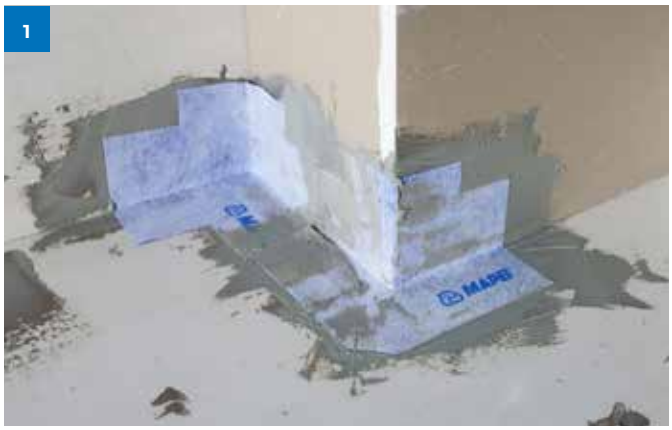
INSTALLING MAPEGUARD WP 90/WP 140/WP 200

INSTALLING MEMBRANE – METHOD A: N.B.

1 If installing MAPEGUARD IC/MAPEBAND EASY INTERNAL ANGLE in internal corners and MAPEGUARD EC/ MAPEBAND EASY EXTERNAL ANGLE in external corners using method A, the membrane can be cut to size around the corners. Installation of MAPEGUARD IC/ MAPEBAND EASY INTERNAL ANGLE/MAPEGUARD EC/ MAPEBAND EASY INTERNAL ANGLE is described under alternative B.



2 When installing MAPEGUARD IC/MAPEBAND EASY INTERNAL ANGLE /MAPEGUARD EC/MAPEBAND EASY EXTERNAL ANGLE, the membrane does not have to be folded in the corners. Instead it can be trimmed as illustrated. The required overlap is then provided by the corner piece.

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INSTALLING MAPEGUARD WP 90/WP 140/WP 200

INSTALLING MEMBRANE – METHOD B: JOINS BENEATH MAPEGUARD WP MEMBRANE

1 MAPEGUARD WP 90/WP 140/WP 200 can also be installed without overlaps by joining it using MAPEGUARD ST/MAPEBAND EASY sealing tape and MAPEGUARD IC/MAPEBAND EASY INTERNAL ANGLE and MAPEGUARD EC/MAPEBAND EASY EXTERNAL ANGLE in internal and external corners. When using this method, you should start by cutting out suitable lengths of MAPEGUARD ST/MAPEBAND EASY.

2 Details such as corners, transitions and pipe penetrations can be sealed before (method B) or after (method C) installing the MAPEGUARD WP 90/WP 140/WP 200 membrane on walls and floors.

3 Apply MAPEGUARD WP ADHESIVE in the corner, ensuring that all of the reverse side of the corner piece is coated with adhesive.

4 Install MAPEGUARD IC/MAPEBAND EASY INTERNAL ANGLE in internal corners and press out all air pockets and scrape off surplus adhesive. Seal external corners in the same way using MAPEGUARD EC/MAPEBAND EASY EXTERNAL ANGLE.

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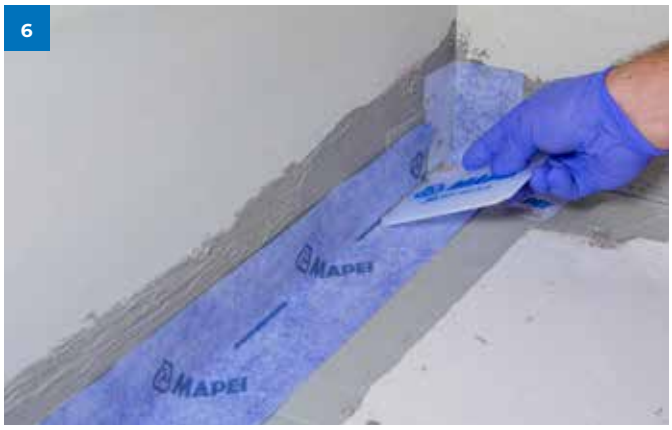
INSTALLING MAPEGUARD WP 90/WP 140/WP 200

INSTALLING MEMBRANE – METHOD B: JOINS BENEATH MAPEGUARD WP MEMBRANE

5 Apply MAPEGUARD WP ADHESIVE and install pre-cut lengths of MAPEGUARD ST/MAPEBAND EASY in transitions between walls and floor.

6 Make sure that the dashed centre line is aligned with the corner. There will then be 6 cm of sealing tape on either side to satisfy the minimum requirement for overlapping.



7 Press out any air pockets and scrape off surplus adhesive.

8 Install MAPEGUARD ST/MAPEBAND EASY in the same way in transitions between walls.

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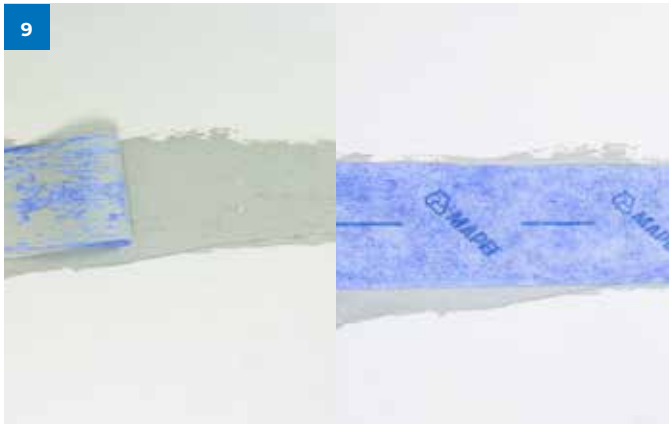
INSTALLING MAPEGUARD WP 90/WP 140/WP 200

INSTALLING MEMBRANE – METHOD B: JOINS BENEATH MAPEGUARD WP MEMBRANE

9 Any joins in the substrate can also be sealed using MAPEGUARD ST/MAPEBAND EASY. Make sure the centre line is over the join.



10 Once all corners, transitions and joins have been sealed, install MAPEGUARD WP 90/WP 140/WP 200 over the remainder of the substrate. Be sure to lay all sheets up to the middle of all sealing sections so as to obtain an overlap of at least 5 cm.

INSTALLING MAPEGUARD WP 90/WP 140/WP 200

INSTALLING MEMBRANE – METHOD C: JOINS OVER MAPEGUARD WP MEMBRANE

1 When installing sealing sections over MAPEGUARD WP 90/WP 140/WP 200 membrane, start by installing the sheet sections next to each other without any overlapping or spaces.

2 Apply adhesive to MAPEGUARD WP 90/WP 140/WP 200 in the corners.

3 Install MAPEGUARD IC/MAPEBAND EASY INTERNAL ANGLE in internal corners and MAPEGUARD EC/MAPEBAND EASY EXTERNAL ANGLE in external corners over the membrane. Press out any air pockets and scrape off surplus adhesive.

4 Apply adhesive to the transition between two sheets of MAPEGUARD WP 90/WP 140/WP 200.

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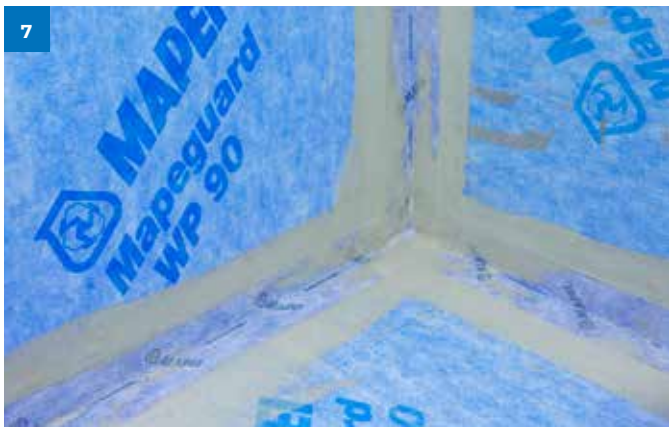
INSTALLING MAPEGUARD WP 90/WP 140/WP 200

INSTALLING MEMBRANE – METHOD C: JOINS OVER MAPEGUARD WP MEMBRANE

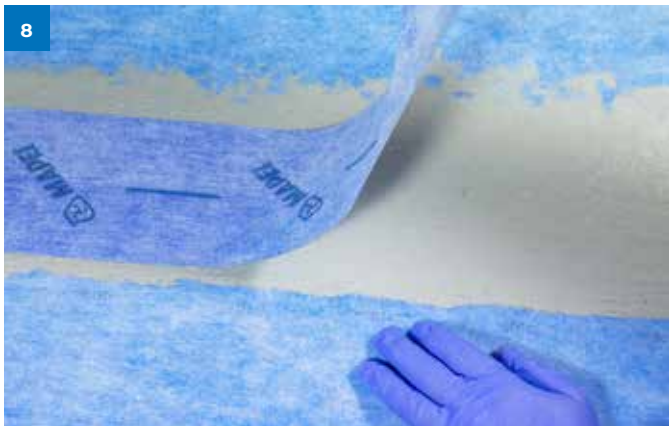
5 Install MAPEGUARD ST/MAPEBAND EASY at the transition with the dashed line directly over the join.

6 Press out any air pockets and scrape off surplus adhesive.

7 Finish all transitions.



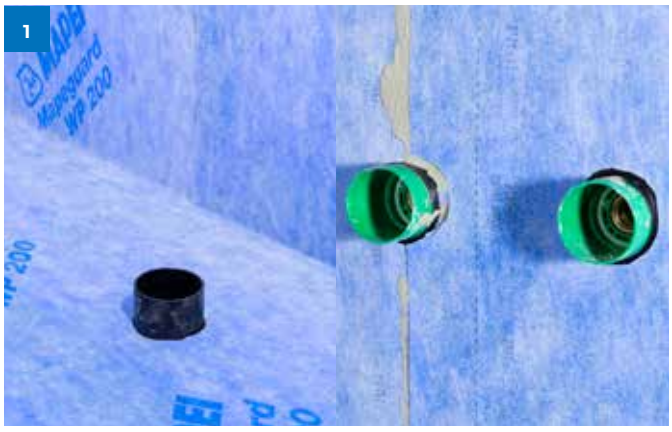
8 Also install MAPEGUARD ST/MAPEBAND EASY over all joins between sheets of MAPEGUARD WP 90/WP 140/WP 200 on the same surface. Make sure that the centre line is directly over the join.



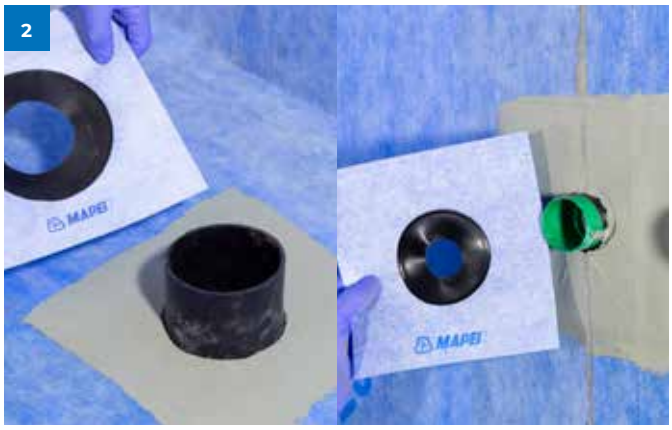
INSTALLING MAPEGUARD WP 90/WP 140/WP 200

SEALING PIPE PENETRATIONS

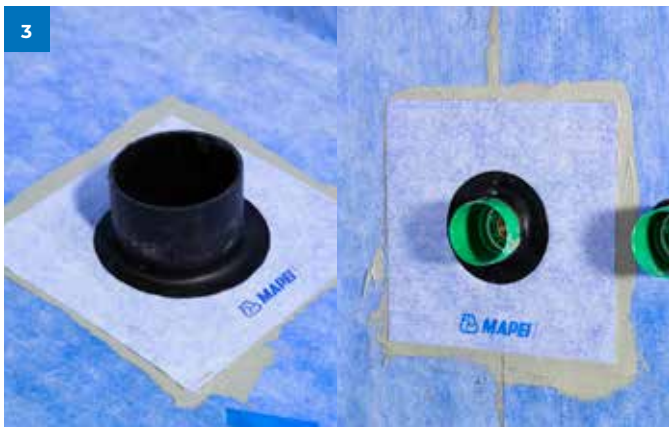
1 Check that all pipes are firmly in place and projecting at right angles from the floor or wall, and that there is a max. 2 mm gap between the wall/floor substrate and the pipe. Larger holes should be sealed using MAPEFLEX MS45.



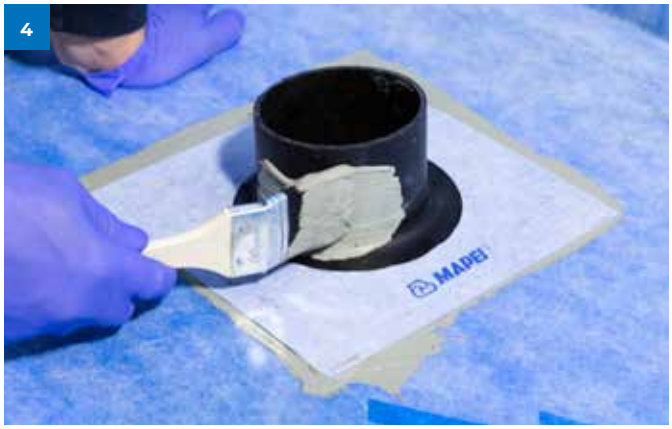
2 Install a MAPEGUARD PC pipe collar of the correct size and apply MAPEGUARD WP ADHESIVE. Make sure that the back of the pipe collar is fully coated in adhesive.



3 Press the collar into the adhesive and scrape off any surplus adhesive.



4 Apply MAPEGUARD WP ADHESIVE around the transition where the collar's rubber ring fits around the pipe.



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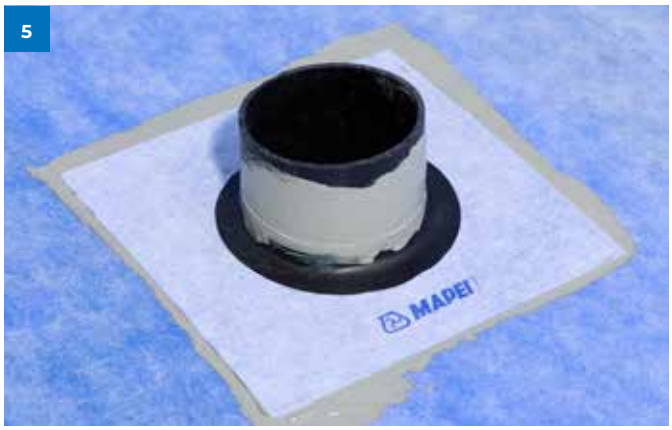
INSTALLING MAPEGUARD WP 90/WP 140/WP 200

SEALING PIPE PENETRATIONS

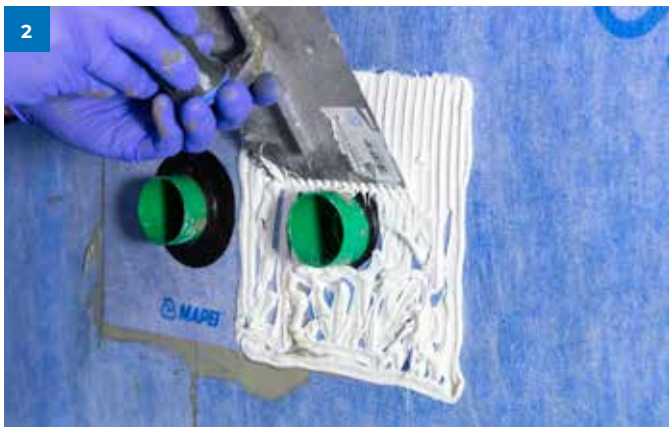
5 Complete sealing of a Ø110 mm pipe.



SEALING PIPE PENETRATIONS USING ALTERNATIVE READY-TO-USE ADHESIVE

1 All MAPEGUARD seals can be glued using MAPEGUARD WP ADHESIVE or the single-component adhesive MAPEFLEX MS45 in a gun. MAPEFLEX MS45 is ready for use and is particularly useful if you find that a part is missing or has to be replaced, or if you find any damage to installed membrane that needs to be repaired. MAPEFLEX MS45 can also be used to stick down overlaps between MAPEGUARD WP 90/WP 140/WP 200 sheets.

2 Apply beads of adhesive beneath the relevant sealing component (the illustration shows a MAPEGUARD PC pipe collar). Spread the adhesive using an adhesive trowel.



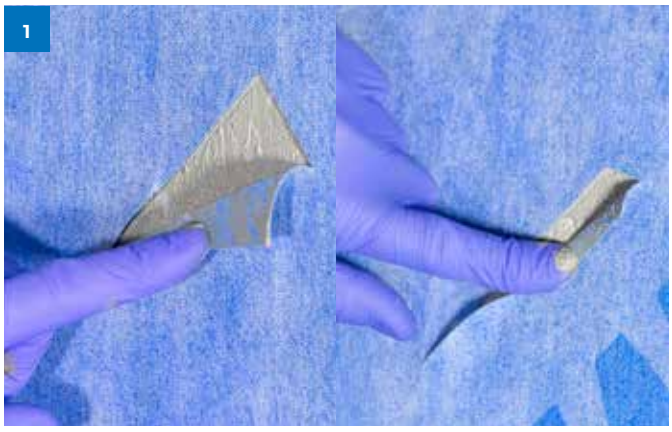
3 Press the sealing collar onto the adhesive. Press out any air pockets and scrape off surplus adhesive.

INSTALLING MAPEGUARD WP 90/WP 140/WP 200

REPAIRING DAMAGE

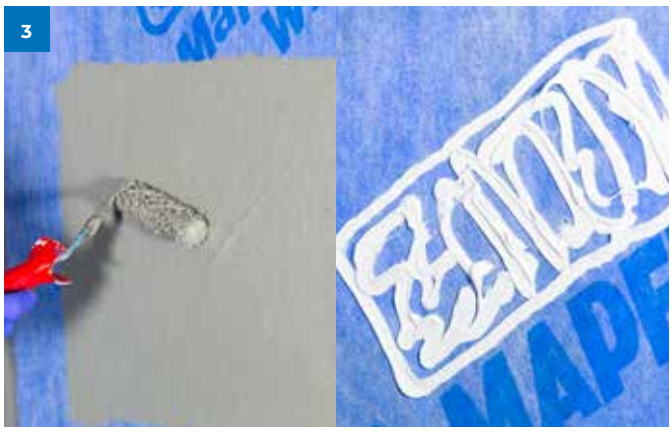
1 Damage to the membrane can be easily repaired by seaming using a piece of MAPEGUARD WP 90/WP 140/WP 200 or MAPEGUARD ST/MAPEBAND EASY.

MAPEGUARD WP 90/WP 140 can be repaired using MAPEGUARD WP 200 and vice versa.



2 Cut a suitable piece of MAPEGUARD ST/MAPEBAND EASY or a sheet of MAPEGUARD WP 90/WP 140/WP 200 to size. Make sure the membrane covers an area of at least 5 cm measured from the edge of the damaged area.

3 Apply MAPEGUARD WP ADHESIVE or MAPEFLEX MS45 over the damaged area.



4 MAPEFLEX MS45 needs to be spread out.

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INSTALLING MAPEGUARD WP 90/WP 140/WP 200

REPAIRING DAMAGE

5 Apply the membrane to the damaged area. Press out any air pockets and scrape off surplus adhesive. Check that the overlap is wide enough.

CHECKING AFTER INSTALLATION

1 This is what a wetroom might look like after installing MAPEGUARD WP membrane system using methods A and B. Check that the job has been completed properly, in particular that:

- All joins overlap by at least 5 cm.
- The membrane is intact and any damaged areas have been repaired.
- All transitions and pipe penetrations are sealed.

It may be a good idea to take pictures of the sealing layer after installation.

2 Example of a wetroom after installing MAPEGUARD WP membrane system using method C. Check that the job has been completed properly.

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INSTALLING MAPEGUARD WP 90/WP 140/WP 200

TRANSITION TO PURUS DRAIN WITH SCREWED-DOWN CLAMPING RING

1 Check that the drain is installed at the same level as the membrane layer. Unscrew the clamping ring and check that the o-ring is correctly installed beneath the clamping ring.

2 If the drain comes with a Purus knife base, install this in the drain.

3 Apply a MAPEBAND B DC drain collar and the MAPEGUARD WP system as described previously. Make sure no joins in the membrane run over the drain. Install a knife base if required.

4 Cut a hole in the membrane over the drain.

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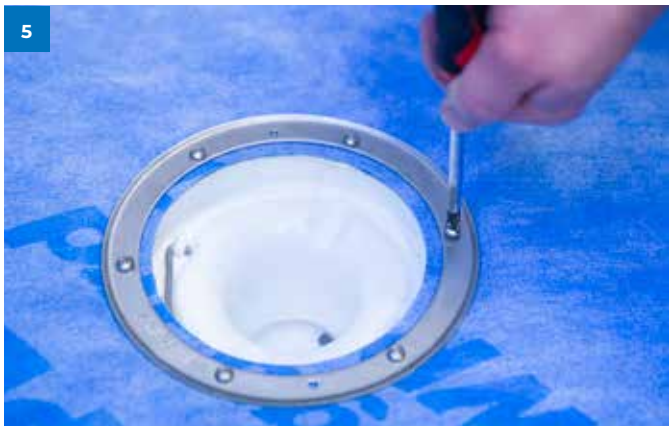
INSTALLING MAPEGUARD WP 90/WP 140/WP 200

TRANSITION TO PURUS DRAIN WITH SCREWED-DOWN CLAMPING RING

5 Apply the clamping ring over the membrane. Use a pricker to make holes for the screws and screw them in using a screwdriver.



6 Make sure that the edge of the membrane and the drain collar are visible beneath the clamping ring.

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INSTALLING MAPEGUARD WP 90/WP 140/WP 200

TRANSITION TO PURUS DRAIN WITH PRESS-ON CLAMPING RING

1 Check that the drain is installed at the same level as the membrane layer. Remove the clamping ring.

2 If necessary, place a knife base in the drain.

3 Apply a MAPEBAND B DC drain collar and the MAPEGUARD WP system as described previously. Make sure no joins in the membrane run over the drain. Install a knife base if required.

4 Cut a hole in the membrane over the drain.

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INSTALLING MAPEGUARD WP 90/WP 140/WP 200

TRANSITION TO PURUS DRAIN WITH PRESS-ON CLAMPING RING

5 Press the clamping ring down into the drain over the membrane.

For other drain variants, see specific installation instructions.

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