



WATERPROOFING COURSE

On using MAPEI Liquid-Applied Membranes for Internal and External
Under-Tile Installations
A Mapei Trained Applicator Program



Presented by
Jennifer Price
Product Manager
Mapei New Zealand

Day in **day out**, construction sites all around the **world** can count on **Mapei**

Welcome to MAPEI Academy's Online Waterproofing Course!

INTRODUCTION & STANDARDS

SUBSTRATE PREPARATION

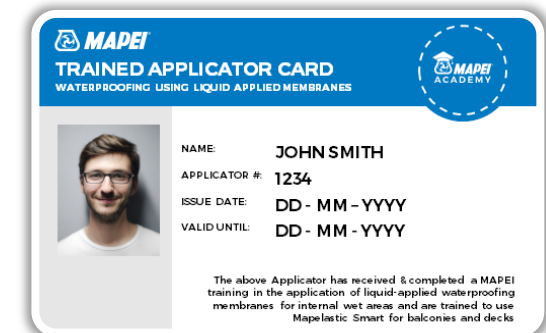
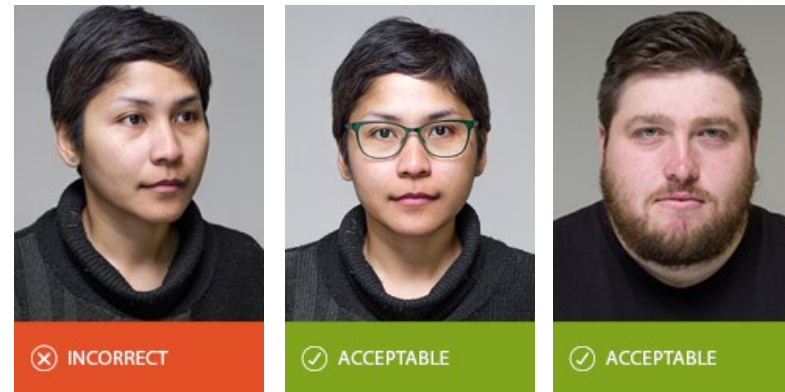
DETAILING

MAPEI PRODUCT SELECTION

DOCUMENTATION & WARRANTIES

- 🛁 This course is split in 5 -parts
- 🛁 Multiple-choice questions at the end of the presentation
- 🛁 Passing mark of 19 out of 20
- 🛁 If passed, your **MAPEI Trained Applicator Card** will be issued or renewed
- 🛁 We will need a **photo of you** for the MAPEI Trained Applicator Card

TIP: Do not take a selfie. Ask a colleague to take a proper photo of you on plain background)



MAPEI Trained Applicator Card



PART 1:

INTRODUCTION & STANDARDS

The Objective of This Training Series is to...








INTRODUCTION & STANDARDS

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-  **Improve your knowledge of under-tile waterproofing using MAPEI liquid applied waterproofing products.**
-  **Learn practical aspects about substrate consideration.**
-  **Understand where to obtain relevant information relating to the current legislation and how it relates to installing an under-tile waterproofing system.**
-  **Learn about the use of MAPEI Waterproofing products.**
-  **Review the BRANZ appraised MAPEI Products in BRANZ Appraisals 484 and 485.**
-  **Note that Regional Councils may vary their requirements but the BRANZ appraisals don't.**
-  **Become a trained applicator experienced in the application of MAPEI waterproofing membranes.**

Why Waterproofing?

INTRODUCTION & STANDARDS




SUBSTRATE PREPARATION

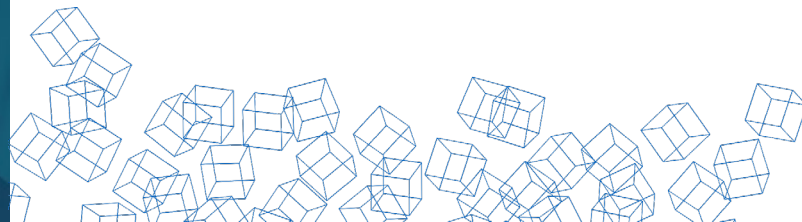
DETAILING

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To prevent the damage caused by **water ingress** to the building which can cause

-  Timber rot
-  Efflorescence
-  Mould growth



Substrate Supplier Technical Documentation

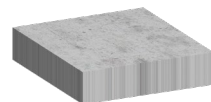
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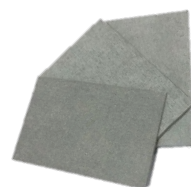
MAPEI PRODUCT SELECTION

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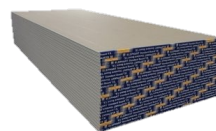
Concrete Slab Engineering

- CANZAC NZ
- Concrete NZ



Cement Board Manufacturers

- James Hardie
- Eterpan Fibre Cement Solutions
- Pacific Build Supply

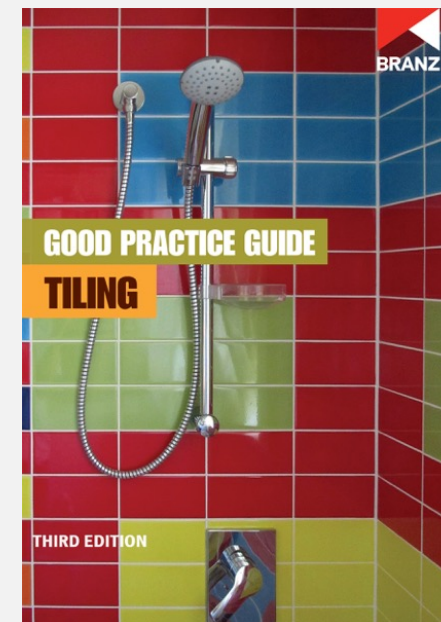


Plasterboard Manufacturers

- Winstone Wallboards GIB
- Elephant Plasterboard

Other Substrates

- Magnesium Oxide Board
- Polyurethane Foam



BRANZ Good Practice Tiling Guide

Relevant References

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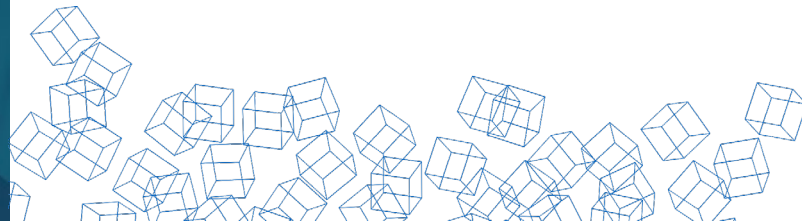
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New Zealand Building Code (NZBC) reference sections

- 🗑️ **E2 - External Moisture:**
 - Ensuring water cannot enter and deteriorate the building fabric and/or affect the health and safety of occupants.
(Exterior decks terraces and balconies)
- 🗑️ **E3 - Internal Moisture:**
 - Preventing excessive internal moisture and ensuring surfaces in wet areas are sufficiently robust.
(Internal Wet Areas)

To download these documents, go to www.mbie.govt.nz



Relevant References

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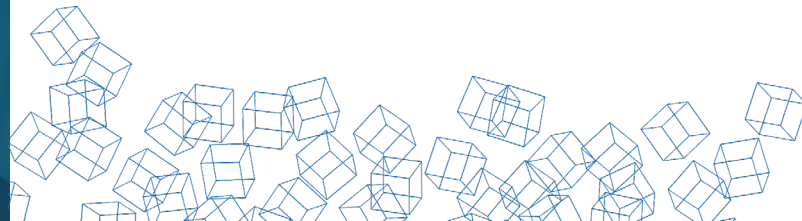
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Australian Standards & New Zealand Standards (ASNZ) reference sections

- 🔍 **ASNZS 4858 : 2004 Liquid Applied Membrane Testing**
This is the standard that has been put together to test Liquid Applied Waterproofing Membranes including wall/wall, wall/floor junction tapes. Mapeband exceeds this standard considerably.
- 🔍 **AS3740 : 2010 Wet Area Membrane Installation**
This is the standard used for the installation of Wet Area Membranes and is what is currently used with no significant alterations.
- 🔍 **AS3740 - States the following:**
Hobs must be constructed of masonry, concrete or similar material. Hobs must not be constructed of timber. Hobs must be adequately secured to the floor.



Waterproofing Internal Wet Areas (E3)

Extent of internal waterproofing as per AS3740

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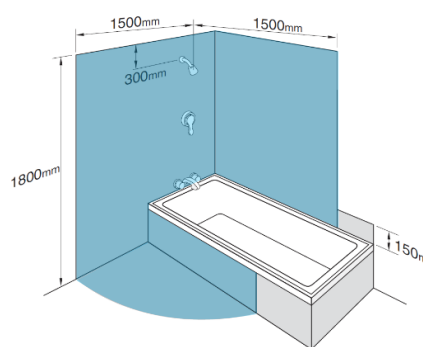
DOCUMENTATION & WARRANTIES

The **blue shaded areas** in the diagrams below represent the minimum extent of wall surfaces requiring impervious sheet materials or waterproof membranes prior to tiling.

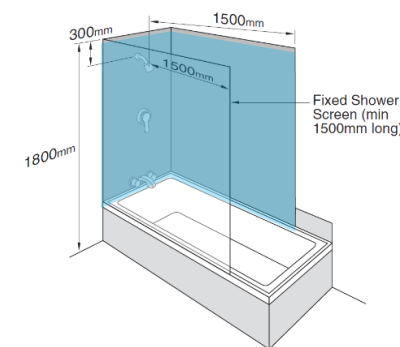
Light **grey shaded areas** represent good practice.

Ceramic or stone tile finishes shall be laid on a **continuous impervious substrate or membrane**

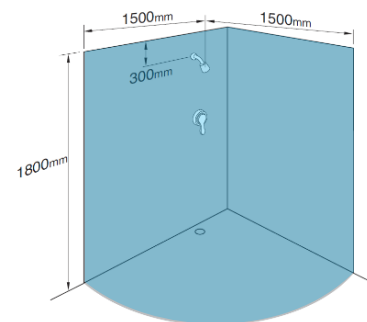
Unenclosed shower over bath



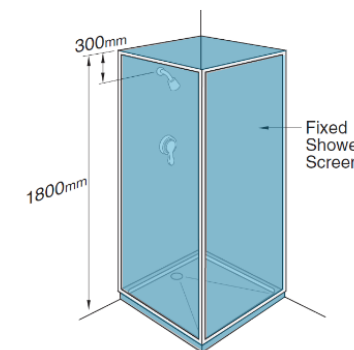
Enclosed shower over bath



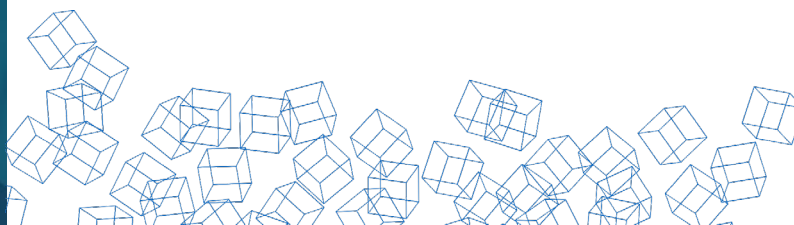
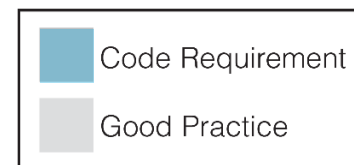
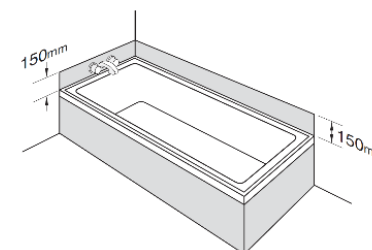
Unenclosed shower



Enclosed shower



Bath



Waterproofing External Wet Areas (E2)

Extent of internal waterproofing as per E2/AS1

INTRODUCTION & STANDARDS

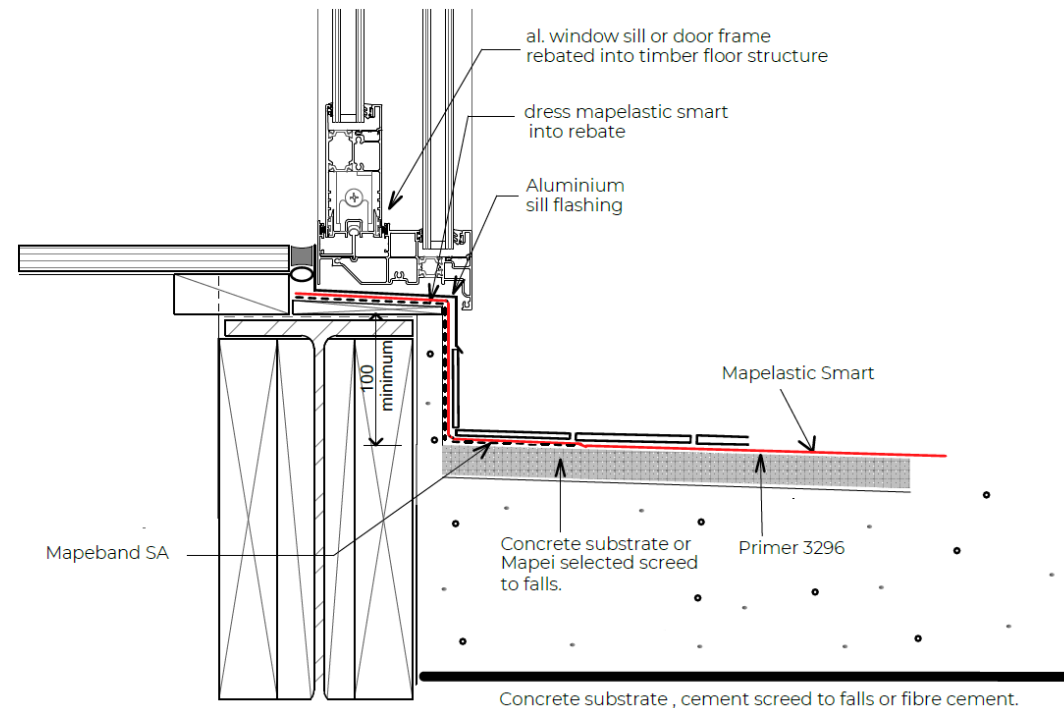
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Acceptable substrates for liquid applied membranes are concrete and for timber framed building compressed cement board



Mapei : Mapelastic smart - external tiled balcony

Generic: Revised 17/04/20
BRANZ 485

- MAPEI NZ does not warrant liquid applied membranes when applied directly over plywood in an external application.

Waterproofing External Wet Areas (E2)

Extent of internal waterproofing as per E2/AS1

INTRODUCTION & STANDARDS

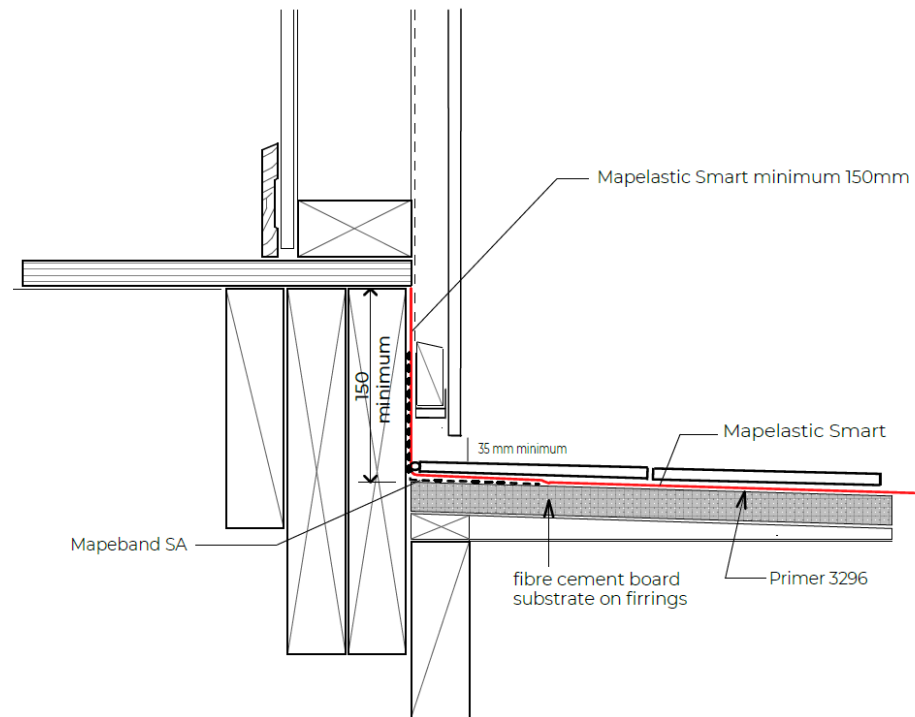
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DOCUMENTATION & WARRANTIES

Acceptable substrates for liquid applied membranes are concrete and for timber framed building compressed cement board



Suitable substrates: Fibre cement, cement or cement screed to falls

Mapei - Mapelastastic Smart cladding exterior tiled balcony

Generic : Revised 17/04/20

- MAPEI NZ does not warrant liquid applied membranes when applied directly over plywood in an external application.

Waterproofing External Wet Areas (E2)

Extent of internal waterproofing as per E2/AS1

INTRODUCTION & STANDARDS

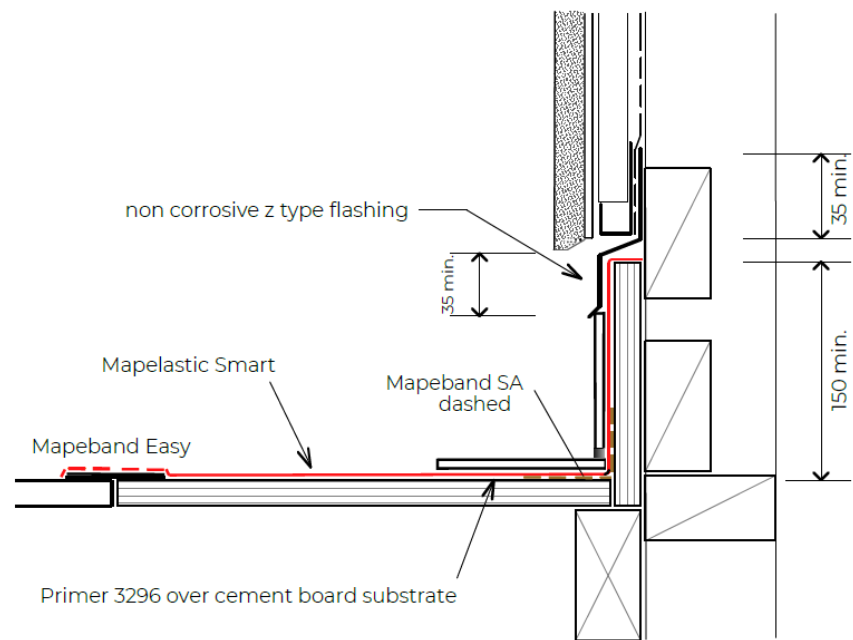
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Acceptable substrates for liquid applied membranes are concrete and for timber framed building compressed cement board



Suitable substrates: Fibre cement, cement or cement screed to falls

Mapelastastic Smart - Plaster cladding / balcony tiled

Generic: Revised 16/04/20

E2/AS1

- MAPEI NZ does not warrant liquid applied membranes when applied directly over plywood in an external application.

Waterproofing External Wet Areas (E2)

Extent of internal waterproofing as per E2/AS1

INTRODUCTION & STANDARDS

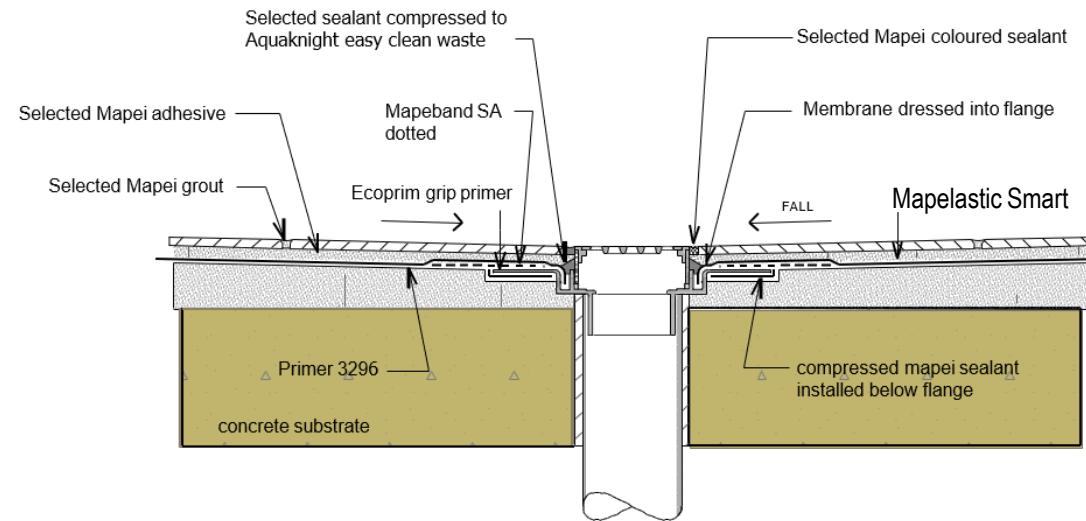
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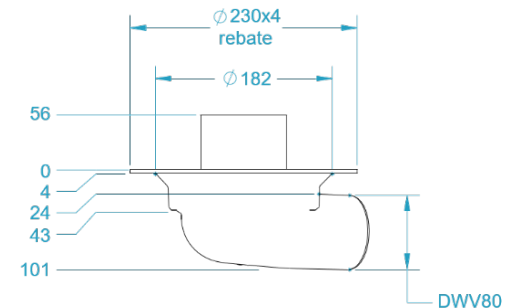
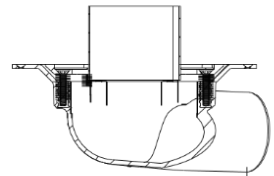
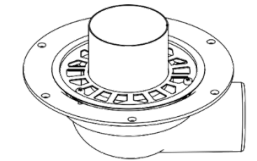
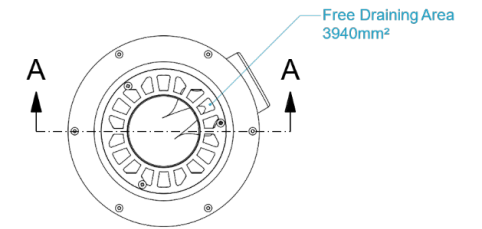
The minimum fall to the drains must be 1:40 and 1:30 for decks over Habitable spaces



Mapei: Centre waste – tiled

Generic: Revised 30/08/2019

BRANZ 484



- MAPEI NZ does not warrant liquid applied membranes when applied directly over plywood in an external application.

Waterproofing External Wet Areas (E2)

Extent of internal waterproofing as per E2/AS1

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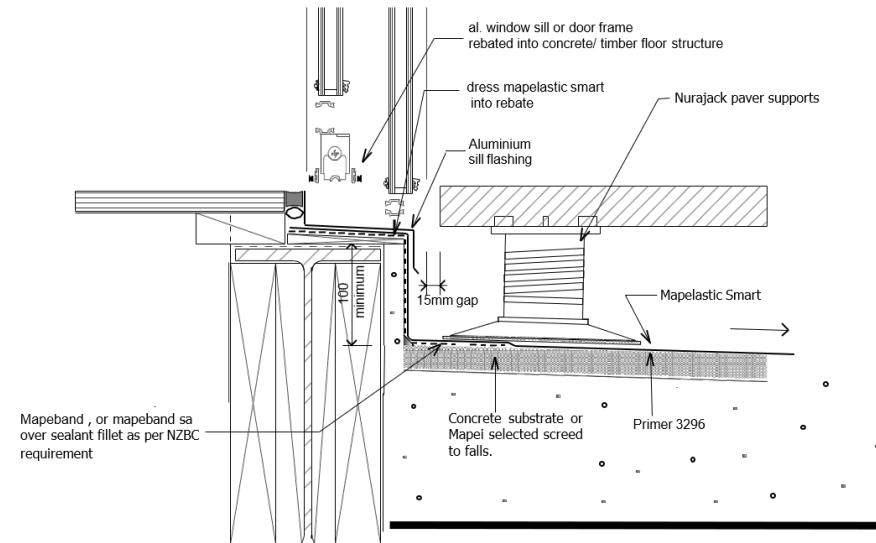
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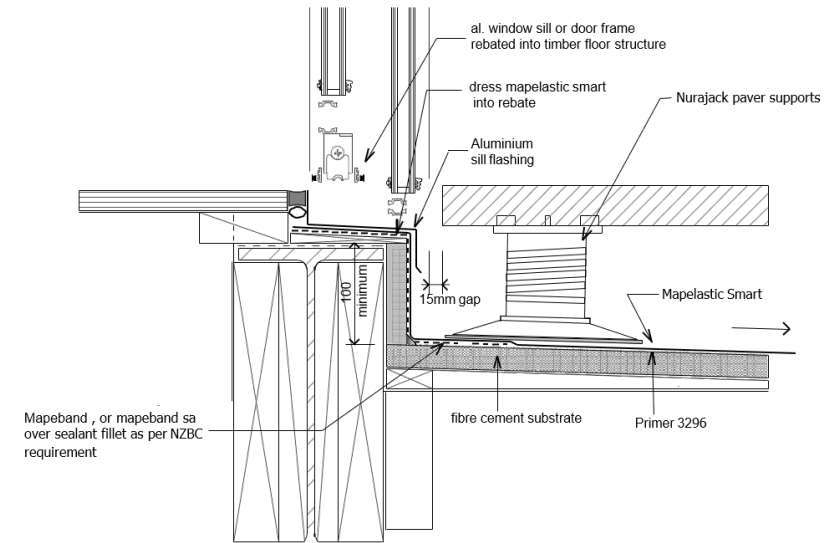
DOCUMENTATION & WARRANTIES

As an alternative solution, tiles can also be laid on deck jack systems which allow for the maintenance of the membrane. Dependent on the local council rule in some areas of NZ such as Auckland direct fixing tiles to a liquid applied membrane is not allowed. In this case the deck jack system is adopted



Mapei: Mapelastic Smart – external concrete balcony


Generic: Revised 04/10/2019



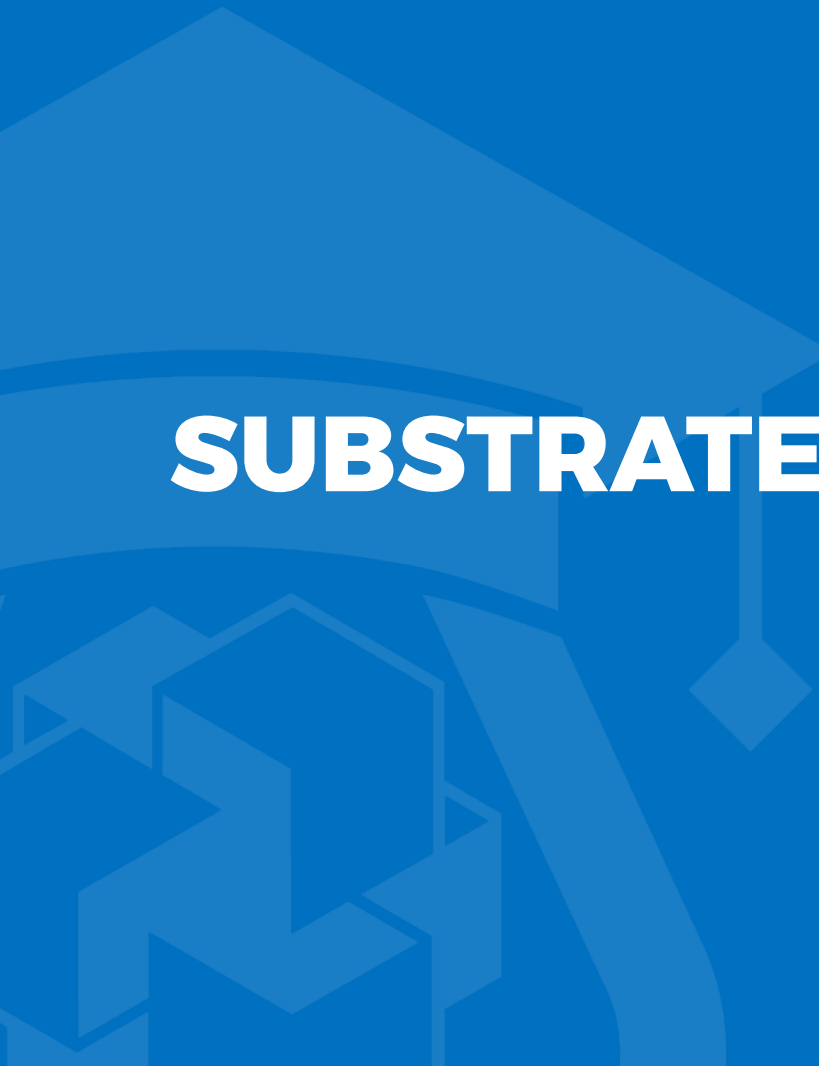
Mapei: Mapelastic Smart – external timber balcony

Generic: Revised 30/08/2019

- MAPEI NZ does not warrant liquid applied membranes when applied directly over plywood in an external application.



End of PART 1
Answer questions 1 to 4



PART 2:

SUBSTRATE PREPARATION & SELECTION

Application Sequence

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1. Repair existing cracks
2. Clean and prepare the substrate
3. Prime where required
4. Form the falls
5. Prepare details:
 - Junctions
 - Joints
 - Penetrations
 - Drains
6. Apply the waterproofing membrane

Crack repair



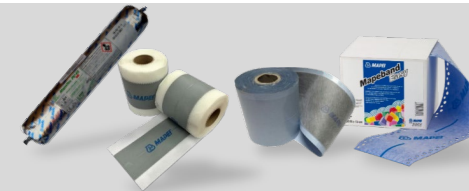
Primers



Screeds for falls



Detail preparation products



Waterproofing system



Concrete Substrates

INTRODUCTION & STANDARDS

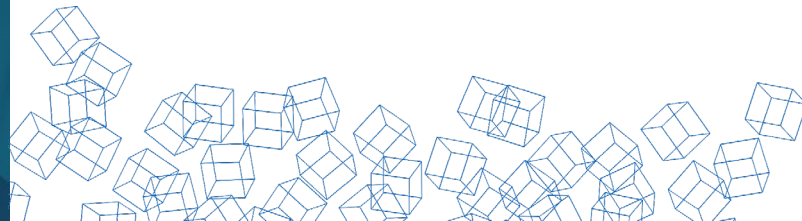
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- ⚠ The substrate must be free of all laitance, curing compounds, dust, oil, wax, paint or other surface contaminants before commencing the installation.
- ⚠ Any crack in the concrete larger than a hairline crack should be repaired
- ⚠ Any new concrete should have been curing for a minimum of 28 days and for internal substrates have a RH of 75% or less. Any rising damp in an interior installation should be treated with a moisture barrier
- ⚠ Concrete should be a minimum compressive strength of 20MPa prior to the application of MAPEI products. As per BRANZ Good Practice Guide to Tiling Section 4.4 & 4.5.
- ⚠ The concrete substrate should carry a Concrete Surface Profile (CSP) 2 to 3 prior to the application of the membrane. Mechanical abrading may be required if this finish is not available.



Concrete Substrates

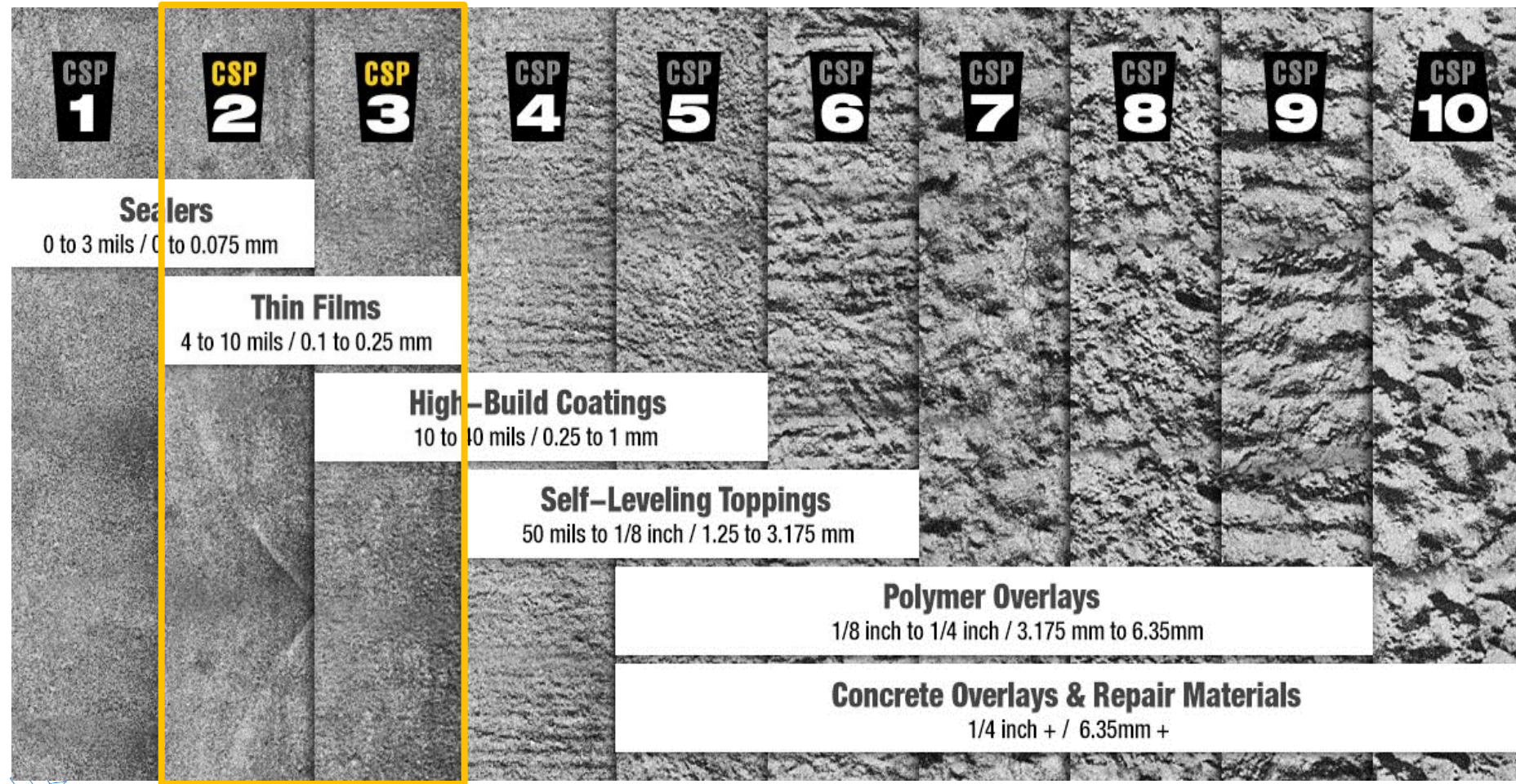
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Repairing Existing Cracks

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 All cracks bigger than a hairline must be repaired with Eporip



Eporip

Two component solvent-free epoxy adhesive for construction joints and for monolithic sealing of cracks in screeds



Concrete Substrates

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Substrates must be well-cured, sound, clean, dry and free of oil, grease, cement laitance, old paint and any other substance which could compromise the bond.



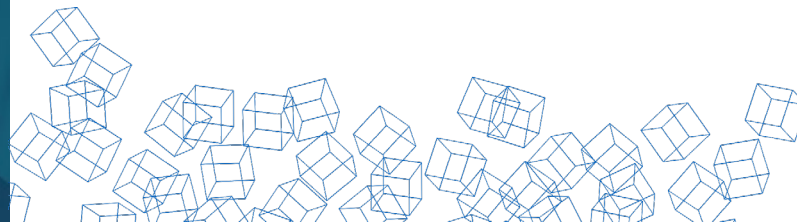
Dusty and weak concrete surface



Rough, uneven and contaminated substrate



Substrate contaminated with old adhesive residue



Concrete Substrates

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These pictures show the typical methods for the preparation of a concrete substrate prior to subsequent bonding of a waterproofing membrane.

- 🔄 Grinding
- 🔄 Shot blasting or
- 🔄 Hydro-scarification

Substrates Installed over Timber Framed Buildings

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Compressed Fibre Cement Sheet for Internal and External Applications

- Installed directly to joists
- Butt joined or socket fixed
- Must have a valid BRANZ Appraisal Certificate or similar and be manufactured to comply with the requirements of AS2908.2. – For internal and External applications
- Installation must be in strict accordance with the instructions of the manufacturer.
- It must be warranted by the Manufacturer as being suitable for a Wet Area substrate.

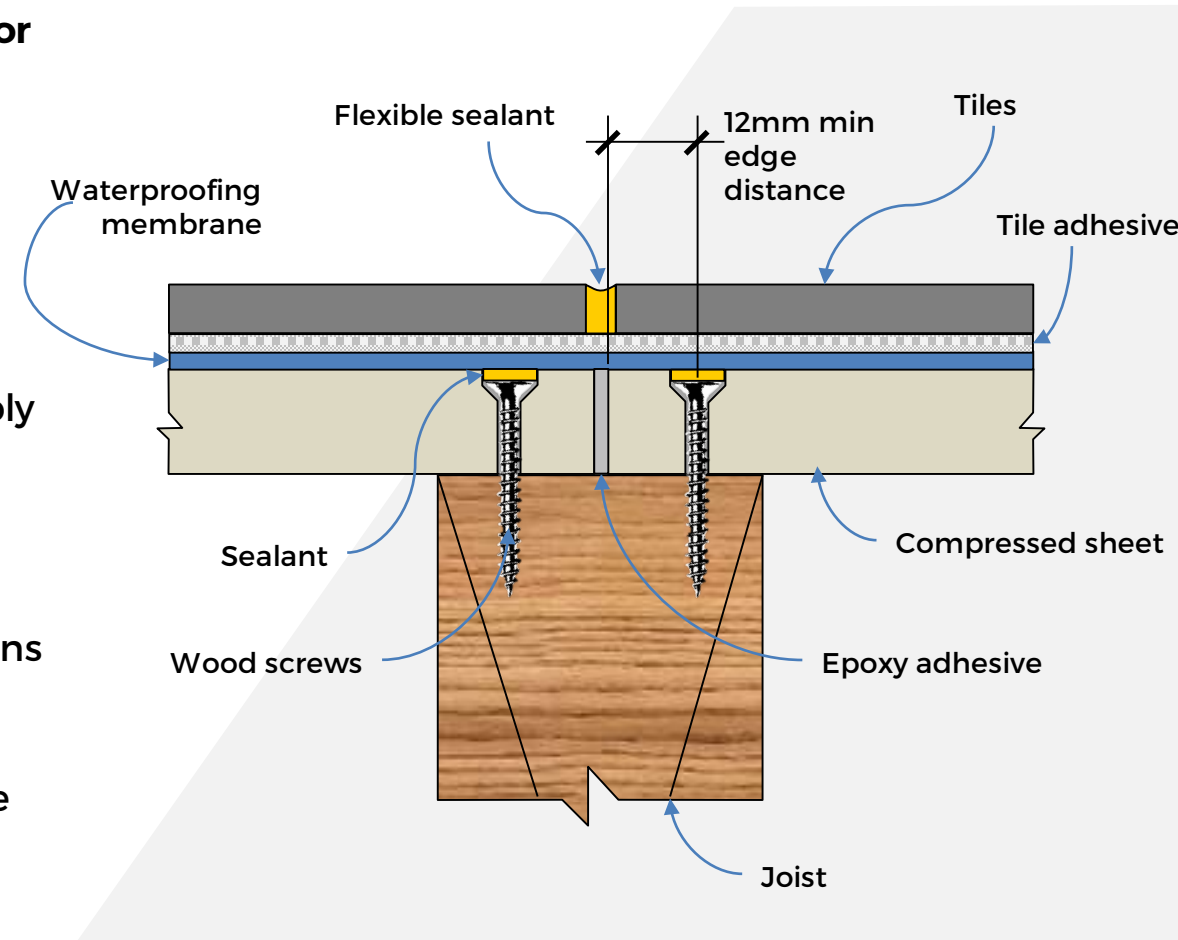
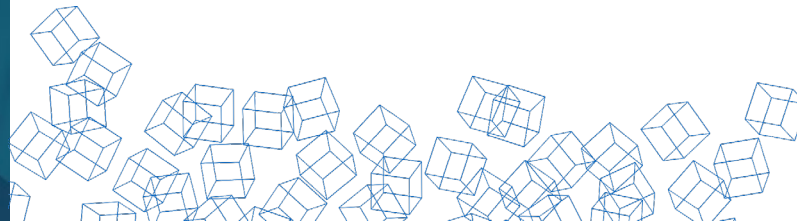


Illustration of substrate installed directly to joists



Substrates Installed over Timber Framed Buildings

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Compressed Fibre Cement Sheet for Internal and External Applications

Installation showing a socket fixed application with the aluminium T socket over timber joists

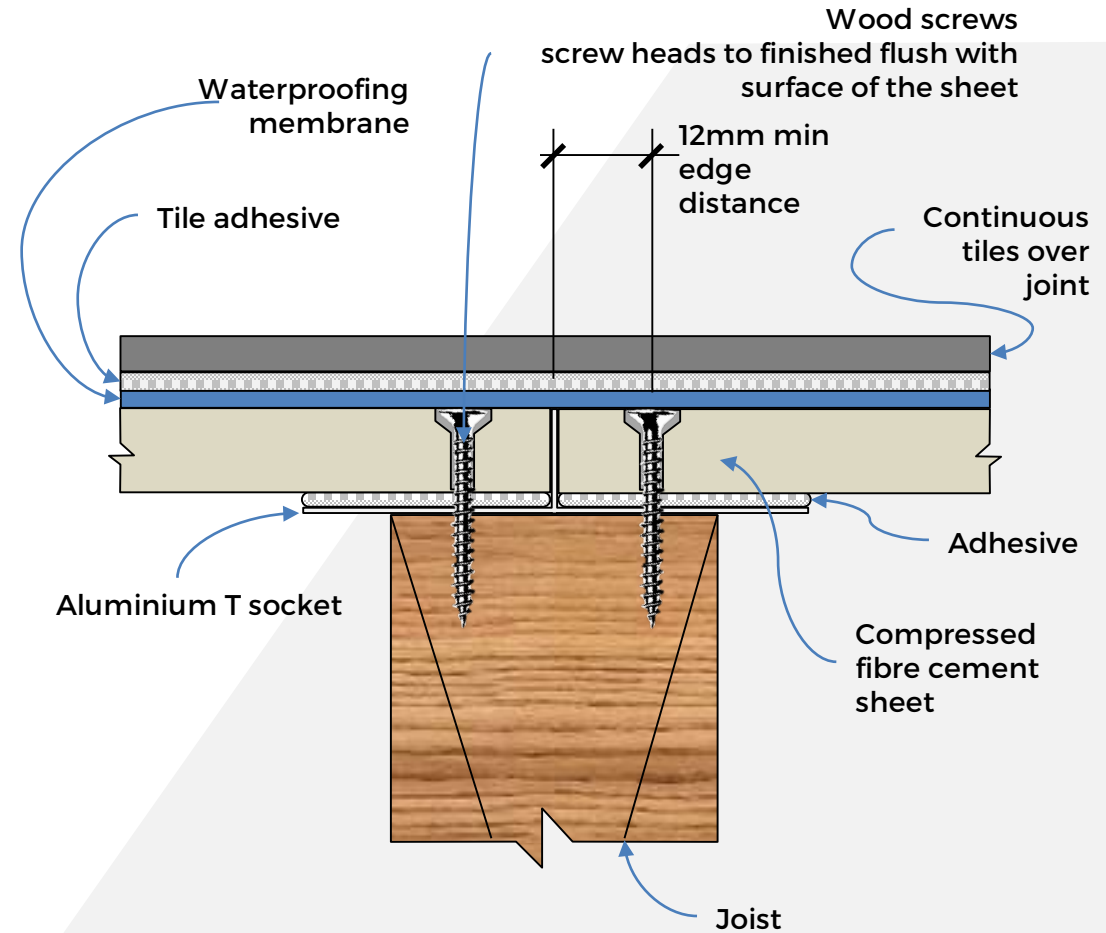
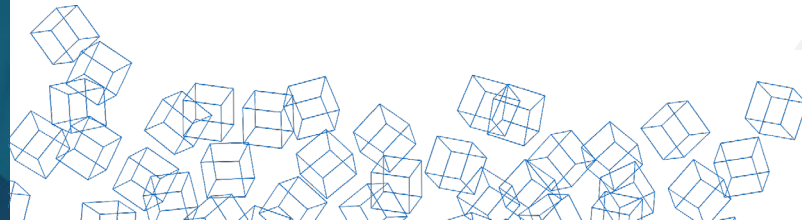


Illustration of substrate installed using aluminium T socket



Substrates Installed over Timber Framed Buildings

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Wet Area Plasterboard or Cement Board

- 🔍 Must be covered by a valid BRANZ Appraisal Certificate or similar for use in internal wet areas
- 🔍 Installation must be in strict accordance with the manufacturer's specifications, including tile weight limitations

Fibre Cement Sheet with Tile and Slate Underlay

- 🔍 Must be covered by a valid BRANZ Appraisal Certificate or similar for use in internal wet areas
- 🔍 Installation must be in accordance with the instructions of the manufacturer

Other Substrates

- 🔍 Magnesium Oxide Board
- 🔍 Polyurethane Foam Shower Bases
- 🔍 Cross Laminated Timber

* These types of other substrates require specialized primers and as such you should contact MAPEI for the recommendations.

Substrates Installed over Timber Framed Buildings

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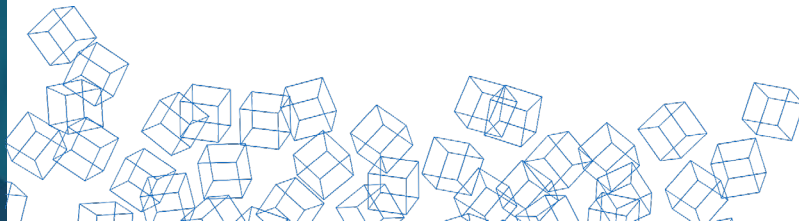
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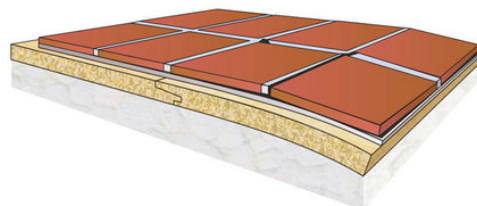
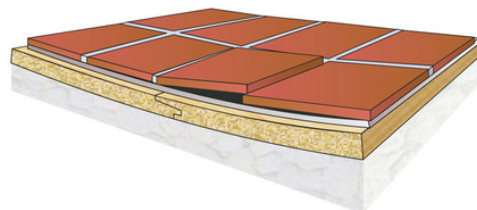
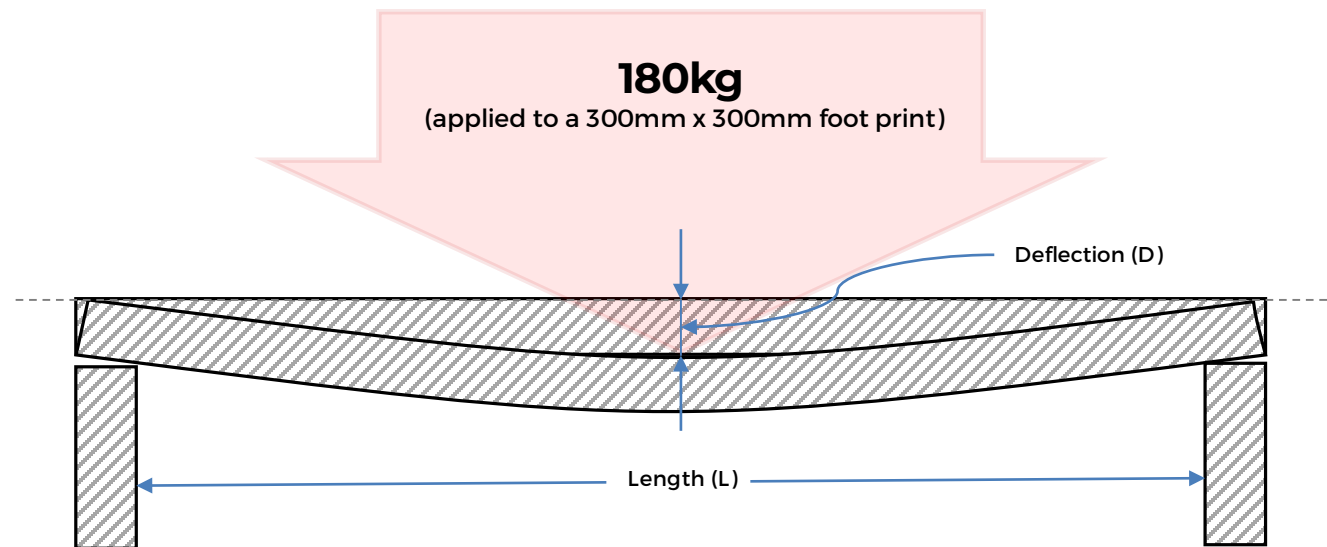
Floor Grade Plywood

- 🔗 **Must be a minimum of 17 mm thick and comply with AS/NZS2269: 2004**
- 🔗 **A minimum of CD grade structural with sanded C face upwards and CCA treated to H3.2**
- 🔗 **Plywood must be supported with nogs or framing with a maximum span of 400 mm in each direction, must be fixed with 10 gauge, 50mm stainless steel, counter sunk head screws at 150 mm centers on the edges and 200 mm through the body of the sheets as per the NZBC E3 Internal moisture standard.**
- 🔗 **Moisture content of the plywood should be no more than 18% RH using a surface mounted hygrometer**
- 🔗 **LOSP treated plywood must NOT be used**
- 🔗 **MAPEI NZ does not warrant liquid applied membranes directly over plywood in an external application.**



Deflection Criteria

Ensure substrates do not flex more than the allowable tolerance
e.g. cavity slider / bounce test



The formula to calculate the maximum substrate deflection is
 $L/360 = \text{deflection in mm}$

Example

If $L = 400\text{mm}$

$$\text{Deflection (D)} = \frac{L}{360} = \frac{400}{360} = 1.1\text{mm}$$

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Create Falls to Waste

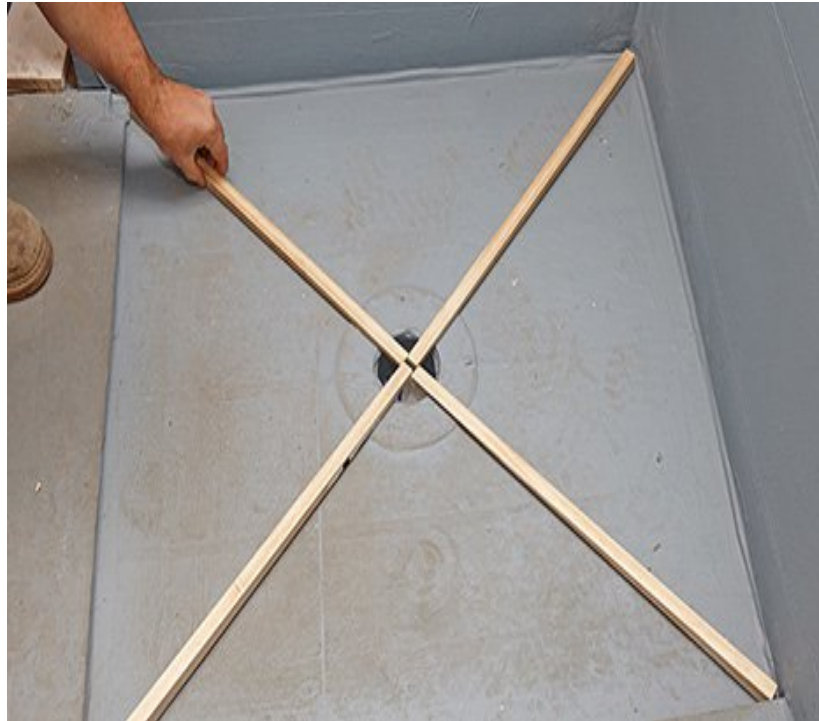
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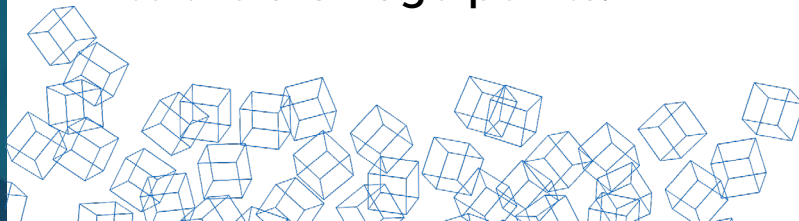
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It is important that prior to the application of the waterproofing membrane that the correct falls are installed to guarantee positive runoff of the water into the drainage points.



Create Falls to Waste

Using MAPEI Screeds

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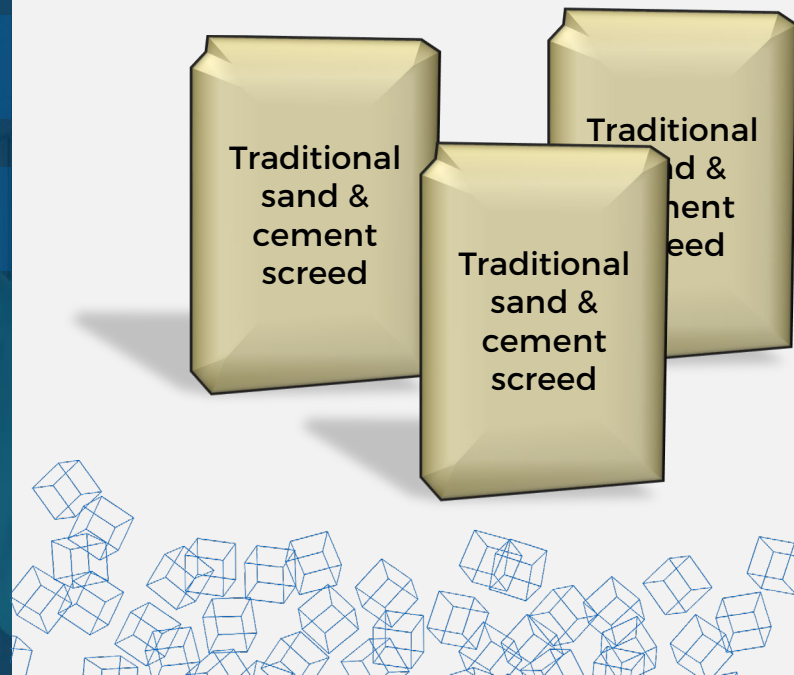
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Introduce falls with screeds:

Traditional sand & cement screed
take 7 days per cm of thickness to set

Topcem screeds – 4 days

Mapecem screeds – 24 hrs



Working with Falls

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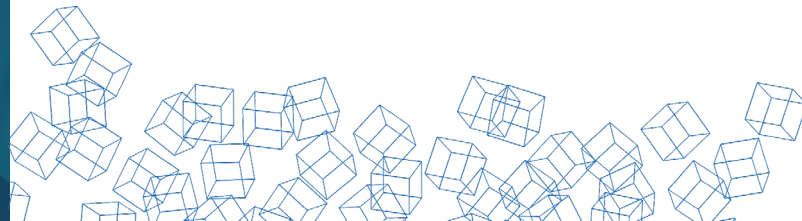
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- 🚿 **Nib enclosed showers must have a minimum fall of 1:60**
- 🚿 **Level entry showers must have minimum falls of 1:50**
- 🚿 **External Deck or Balcony over clear space must have a minimum fall of 1:40**
- 🚿 **An External Balcony over habitable space must have a minimum fall of 1:30**
- 🚿 **Alternatively a certificate of design will determine falls**



Working with Falls 1:60

i.e. Nib Enclosed Showers

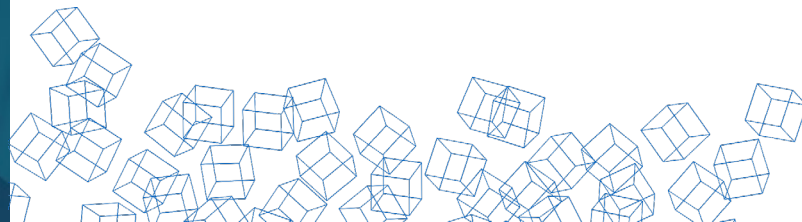
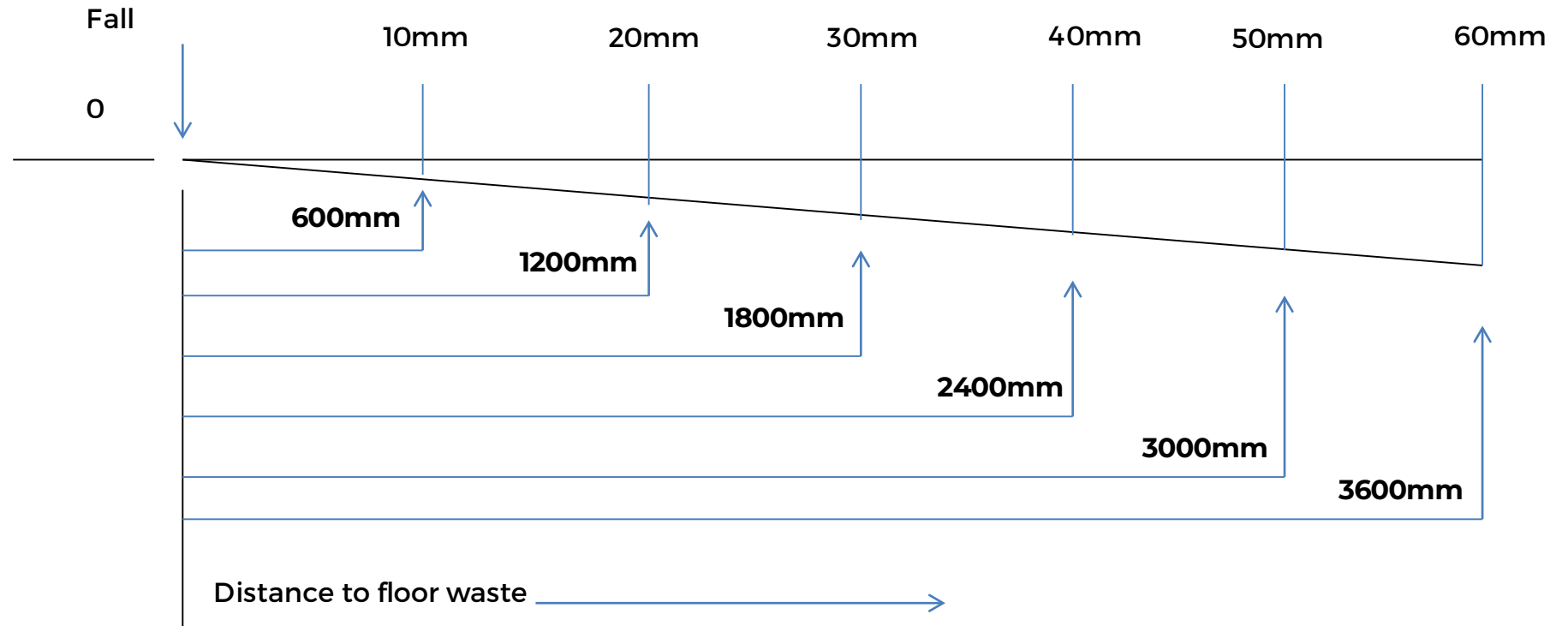
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Working with Falls 1:50

i.e. Level Entry Shower

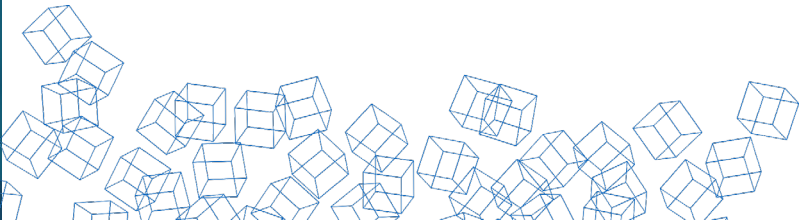
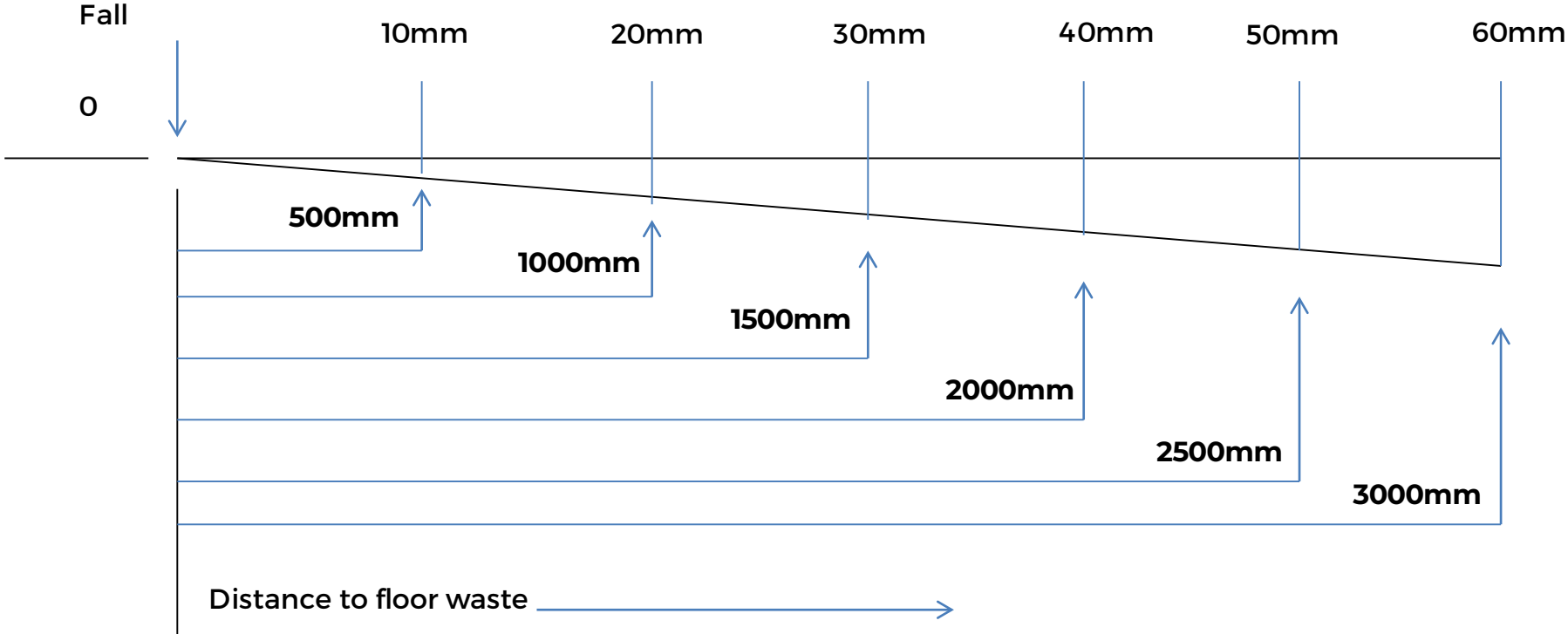
INTRODUCTION & STANDARDS

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Working with Falls 1:40

i.e. External Deck or Terrace

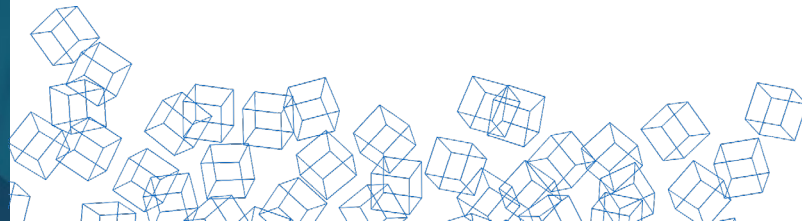
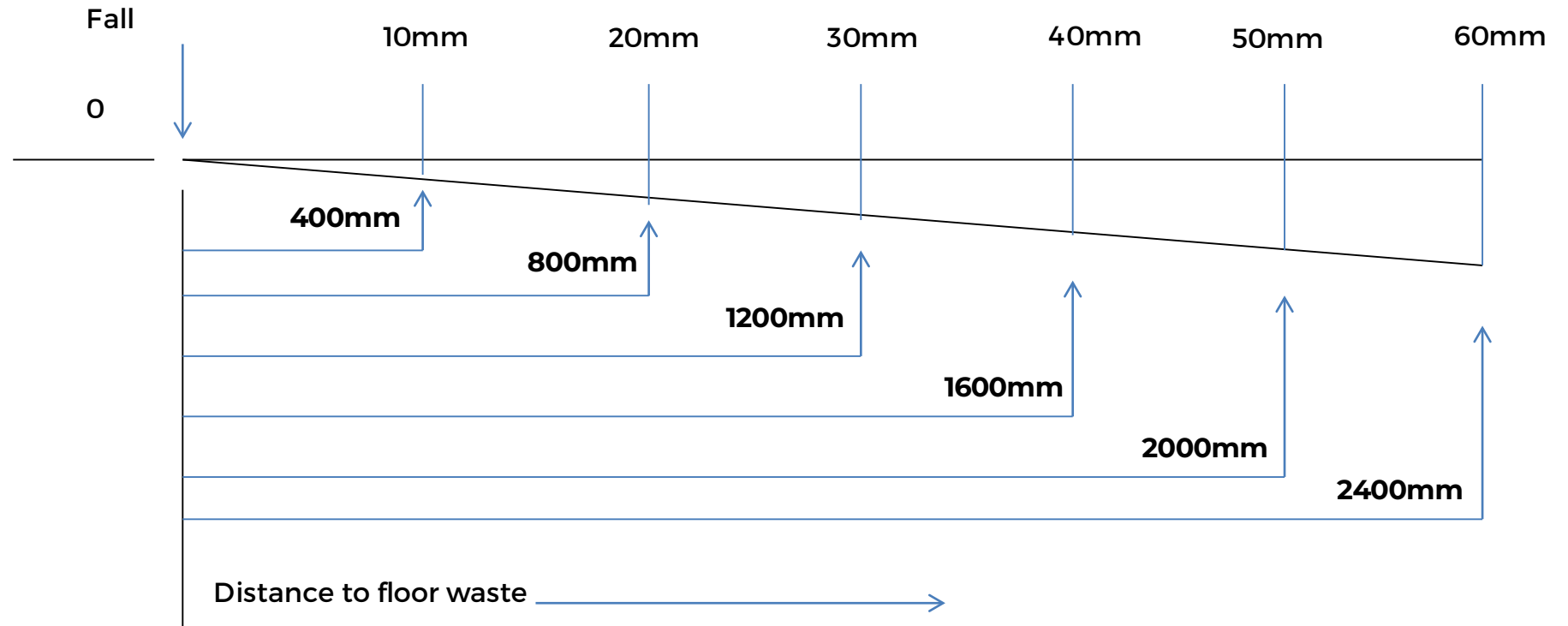
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Working with Falls 1:30

i.e. External Balcony Over Habitable Space

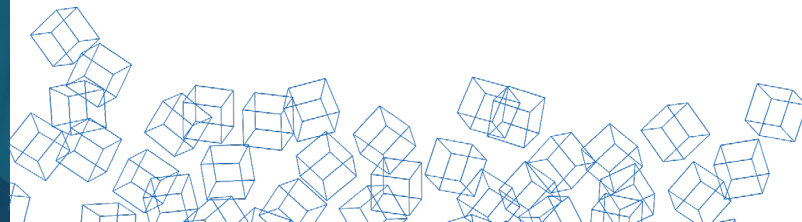
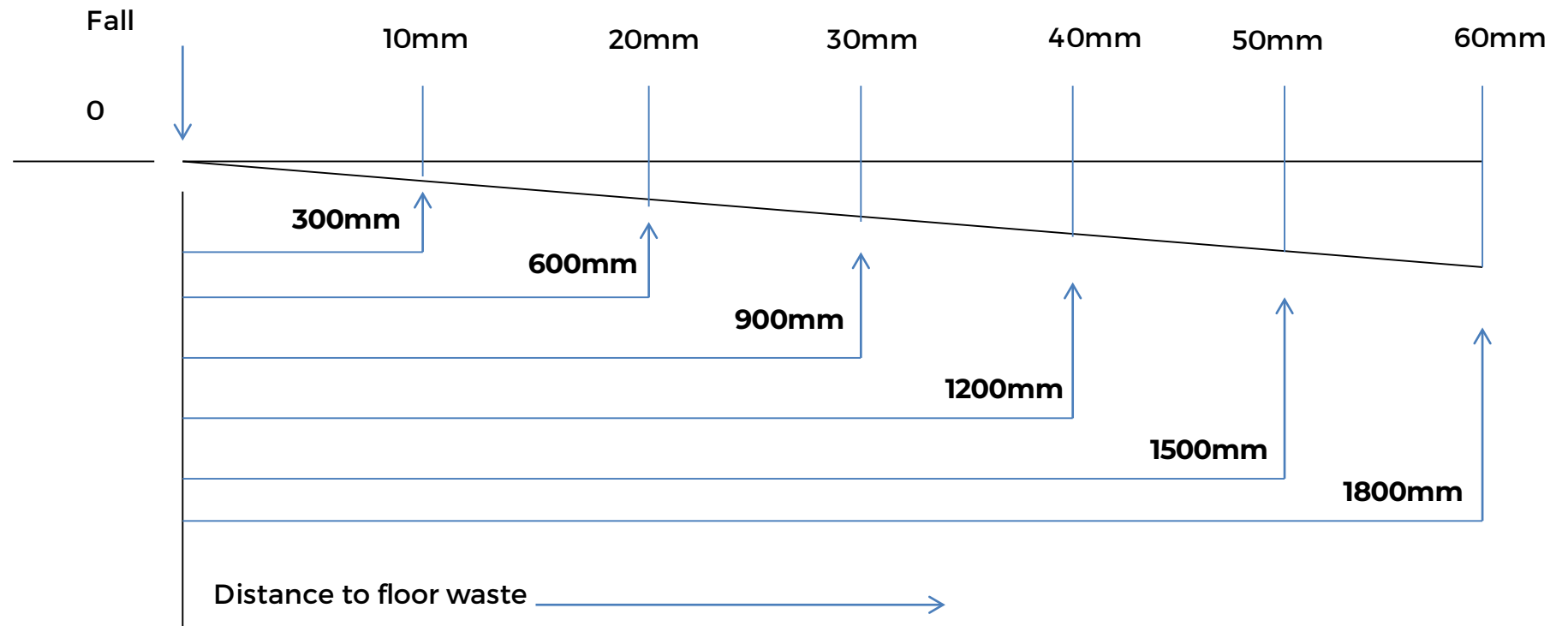
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End of PART 2
Answer questions 5 to 13



PART 3: DETAILING

PREPARING DETAILS

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Membrane Class	Elongation at break	Minimum bond breaker to bridge up to 5mm
Class 1 - <i>Mapelastic</i>	10 - 59%	75mm with backing rod
Class 2 - <i>Mapelastic Smart, Mapegum WPS</i>	60% to 299%	35mm
Class 3 - <i>Mapelastic AquaDefense</i>	≥ 300%	12mm

- Using **MAPEBAND**, **MAPEBAND PE120** & **MAPEBAND SA** eliminates the need for a neutral cure sealant fillet or a bond breaker.
- MAPEBAND** tapes are completely impervious to water and do not require a liquid waterproof membrane applied to them. They are not suitable for permanent UV exposure.
- For a Class 2 membrane a 35mm wide bond breaker should be applied over a joint to accommodate the joint opening up by up to 5mm.

*Note: Table available in AS/NZS 4858:2004, section 5, Table 5.1

BOND BREAKER vs MAPEBAND TAPES

INTRODUCTION & STANDARDS

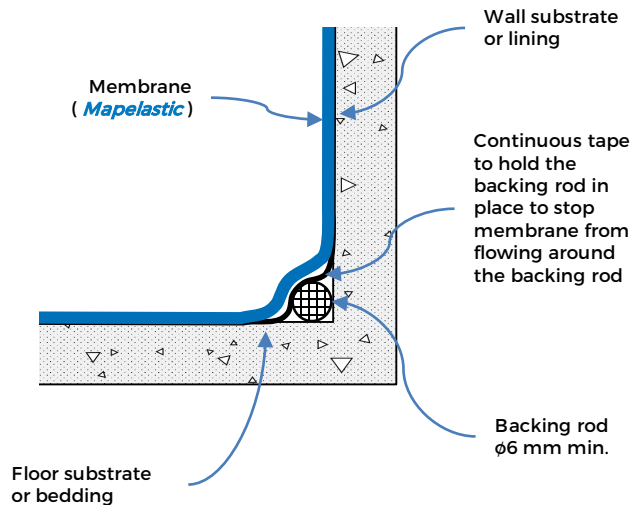
SUBSTRATE PREPARATION

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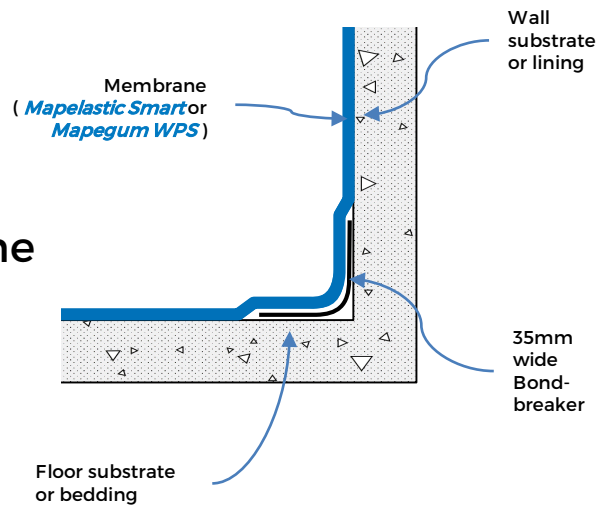
MAPEI PRODUCT SELECTION

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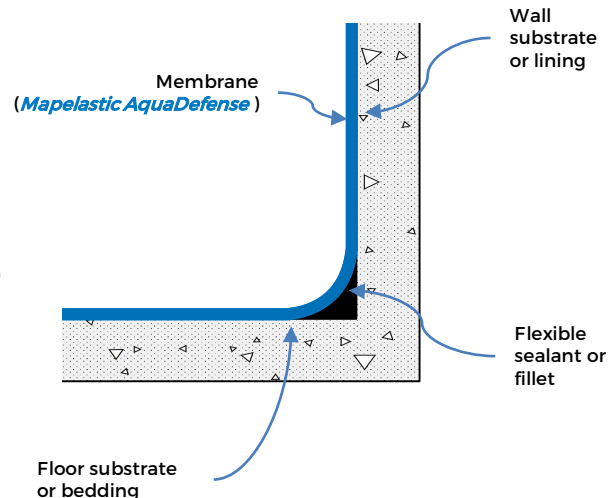
Class 1 Membrane



Class 2 Membrane



Class 3 Membrane



PREPARING DETAILS

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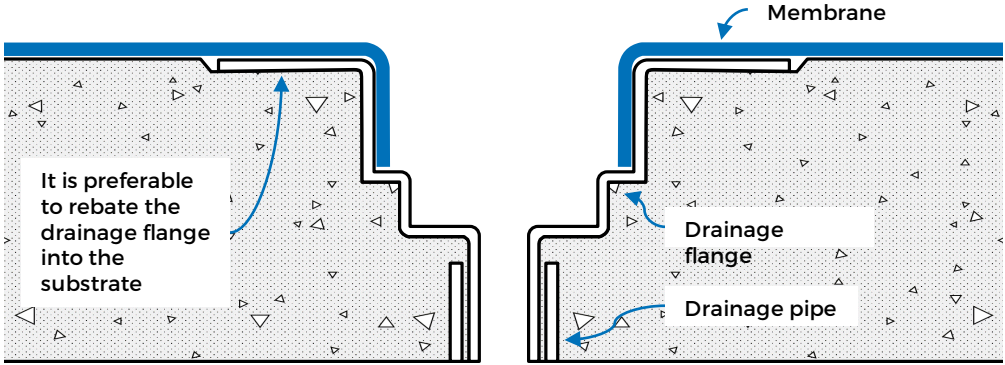
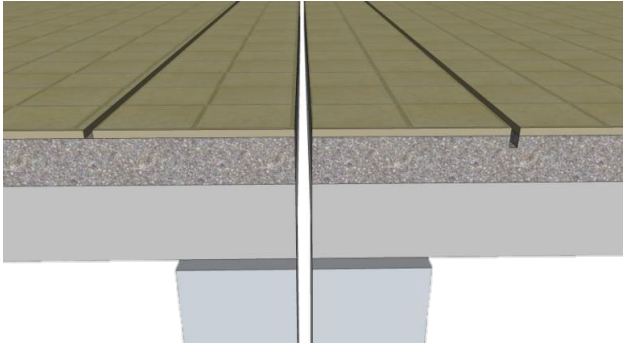
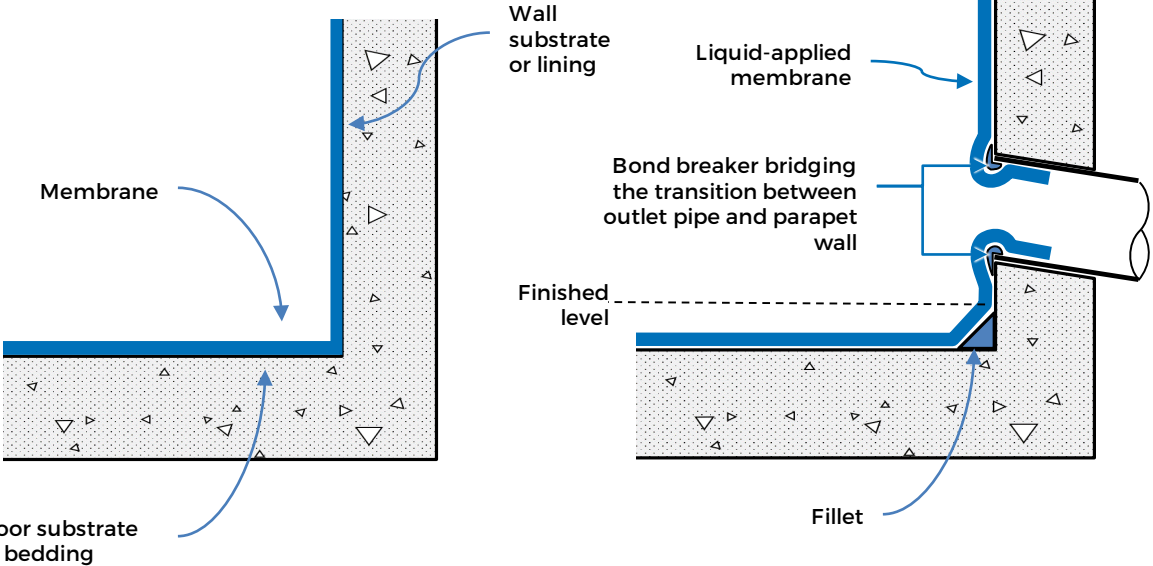
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Special attention must be given to:

- 1. Junctions or Changes in plane
- 2. Penetrations
- 3. Drains
- 4. Expansion and Construction Joints



Junctions

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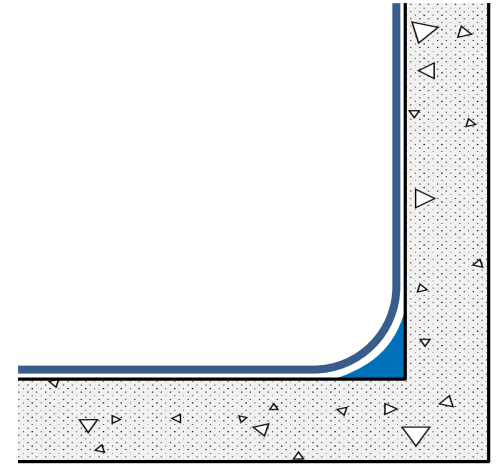
DOCUMENTATION & WARRANTIES

Mapeflex PU45FT 'bond breaker' system **The Minimum Standard - AS/NZS 4858**

1. Installing a 12mm cove of ***Mapeflex PU45FT*** sealant into the corner.
2. Reinforce the membrane using ***Mapetex Sel*** to increase strength and durability

Downsides of 'bond breaker' systems:

- Higher reliance on good workmanship.
- Must wait for the Mapeflex PU45FT to cure.
- Applying the correct thickness to the corner can be difficult. Often too thin or too thick.



Mapeflex
PU45FT



Mapetex
SEL

Junctions

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MAPEI recommended treatment: Mapeband SA

- 👉 Butyl rubber, fast track peel and stick – no sealant required
- 👉 Suitable for use with all MAPEI liquid applied membranes
- 👉 Bonds to itself
- 👉 Membrane can adhere directly to the fabric face of the bandage
- 👉 Excellent adhesion to most substrates used in the building industry
- 👉 Do not apply over damp substrates or use in full immersion



Internal wet areas

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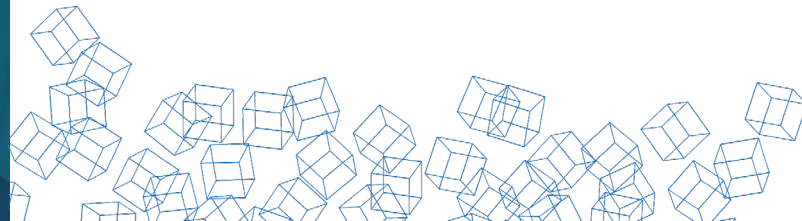
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Central Drain Details and Wall and Floor Penetrations The Minimum Standard - AS/NZS 4858

1. Prime the PVC or metal pipe or drain flanges with ***Eco Prim Grip***
2. Install a 12mm covered bondbreaker with ***Mapeflex PU45FT*** at the junction
3. Apply membrane and reinforce first coat with ***Mapetex Sel***
4. Apply 2nd coat of membrane to recommended thickness



Internal wet areas

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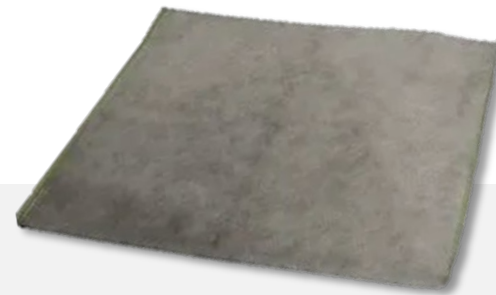
MAPEI PRODUCT SELECTION

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Central Drain Details and Wall and Floor Penetrations

MAPEI Recommended treatment

1. Clean and prepare PVC or Metal pipes or drain flanges
2. Apply preformed ***Mapeband SA Gasket*** directly and apply membrane as recommended



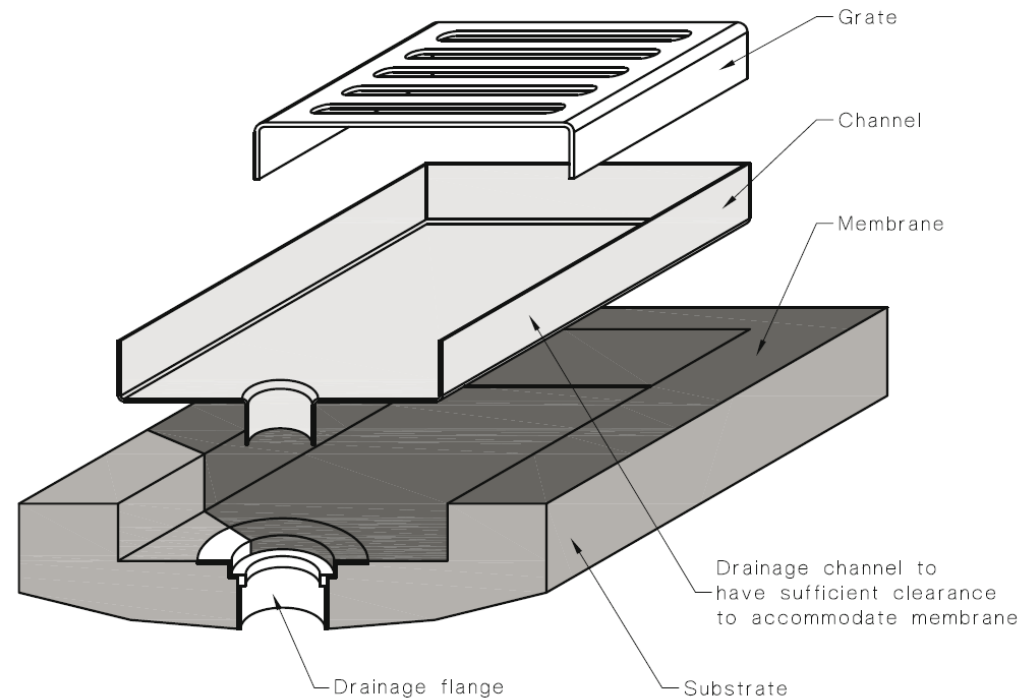
Mapeband SA Gasket



Internal wet areas

Channel Drain Treatment

Make sure the waterproofing is applied **beneath** the channel



TYPICAL MEMBRANE TERMINATION AT DRAINAGE CHANNEL

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PREPARING DETAILS: Joints

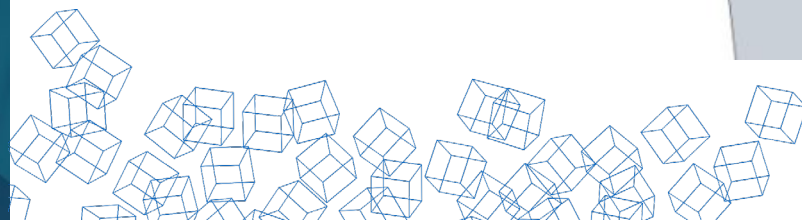
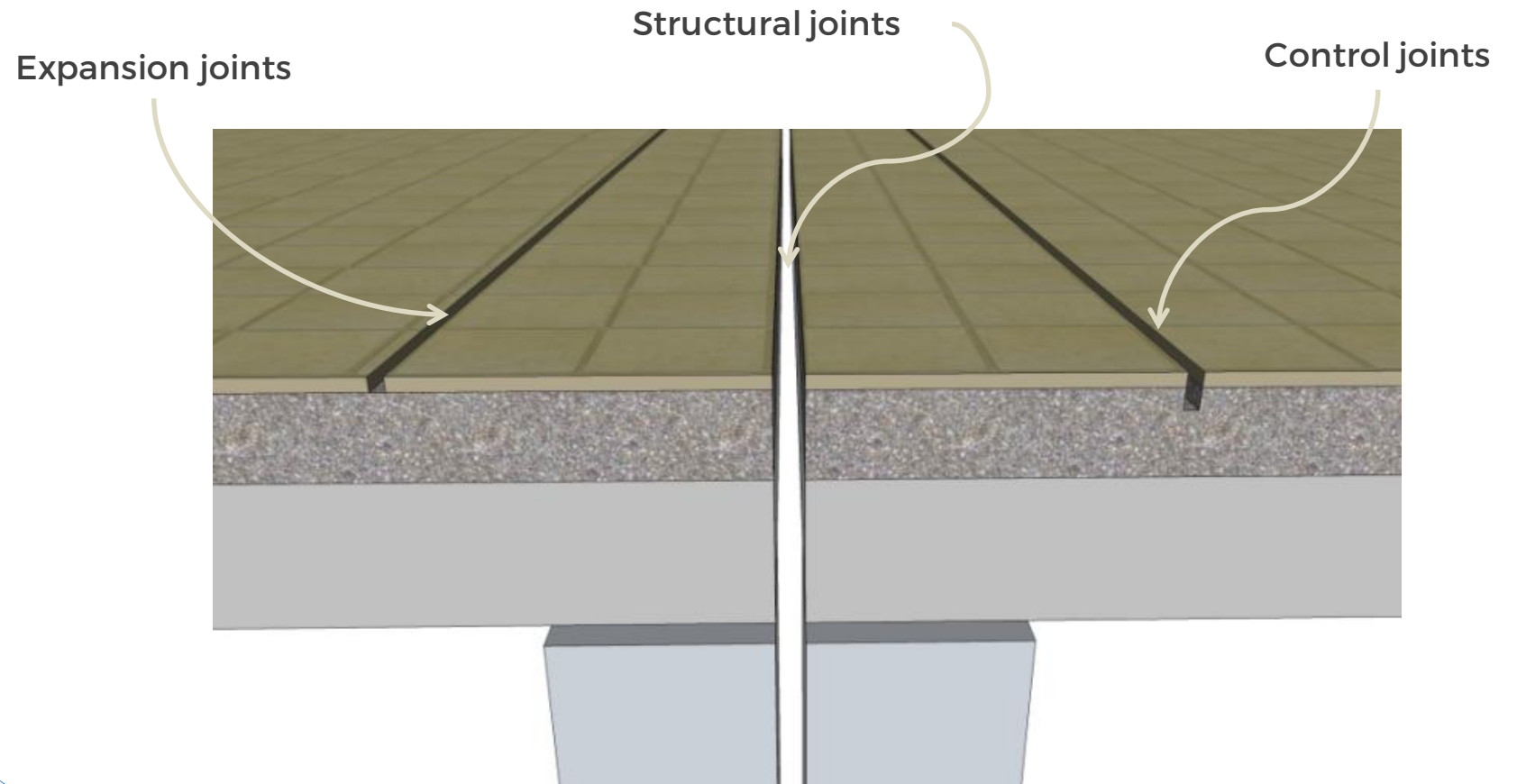
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Control Joints

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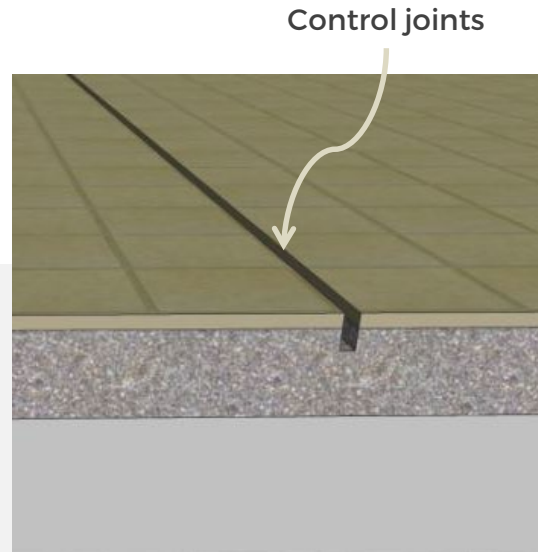
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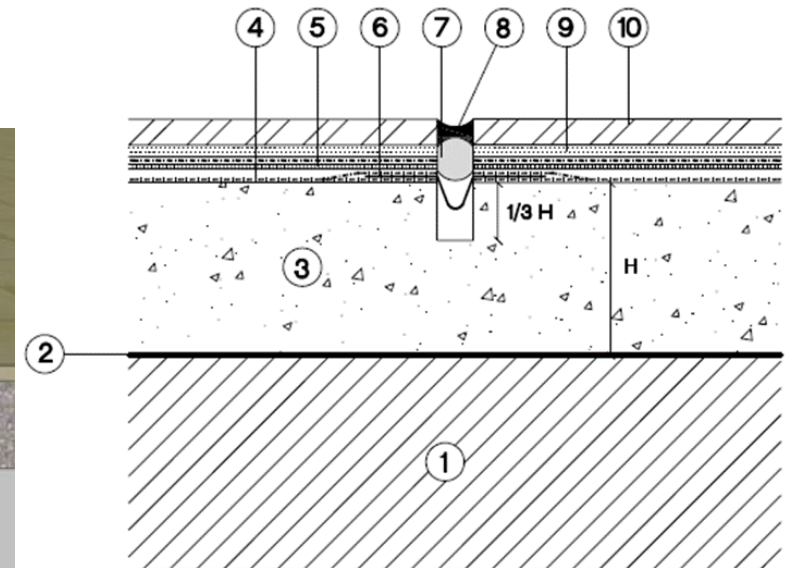
DOCUMENTATION & WARRANTIES

Control joints (aka expansion joints) are installed to induce cracking in specific locations.

Use *Mapeband* or *Mapeband Easy* for control joints.



- ① Reinforced concrete substrate
- ② Bonding slurry (PLANICRETE+TOPCEM+water)
- ③ TOPCEM PRONTO
- ④ MAPELASTIC
- ⑤ MAPENET 150
- ⑥ MAPEBAND
- ⑦ MAPEFOAM
- ⑧ MAPEFIL AC
- ⑨ KERAFLEX MAXI S1/ELASTORAPID
- ⑩ Balcony flooring grouted with ULTRACOLOR PLUS



Control Joints

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Control Joints

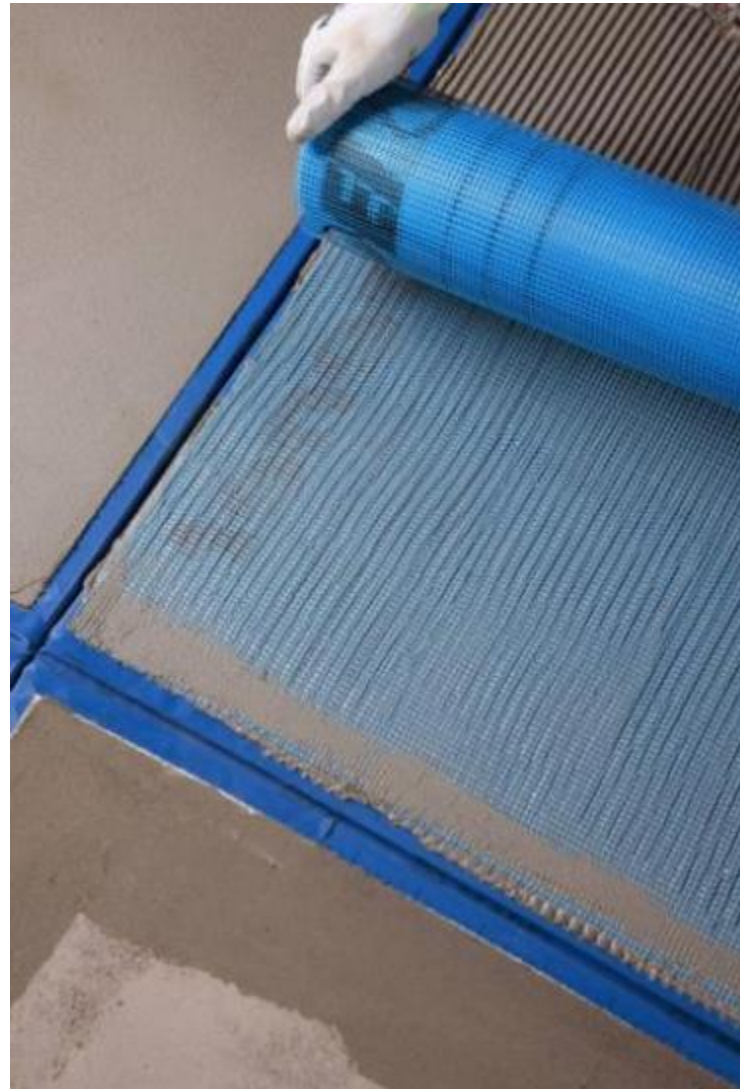
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Structural Joints

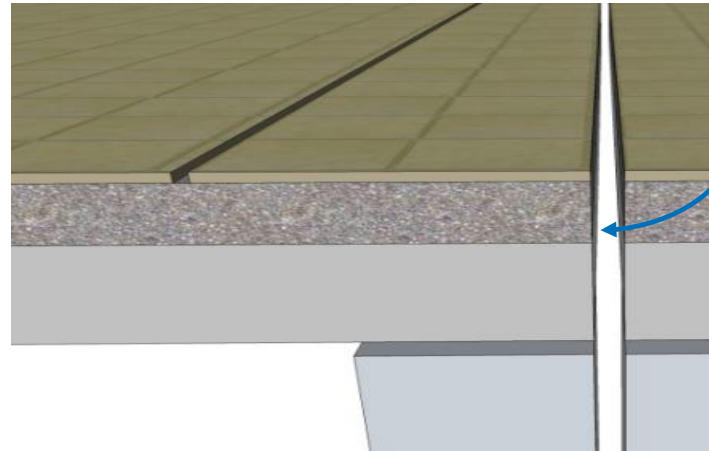
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Structural joints allow for expansion and contraction of the structure.

Only **Mapeband TPE** has the strength and durability for this joint.



Control Joints

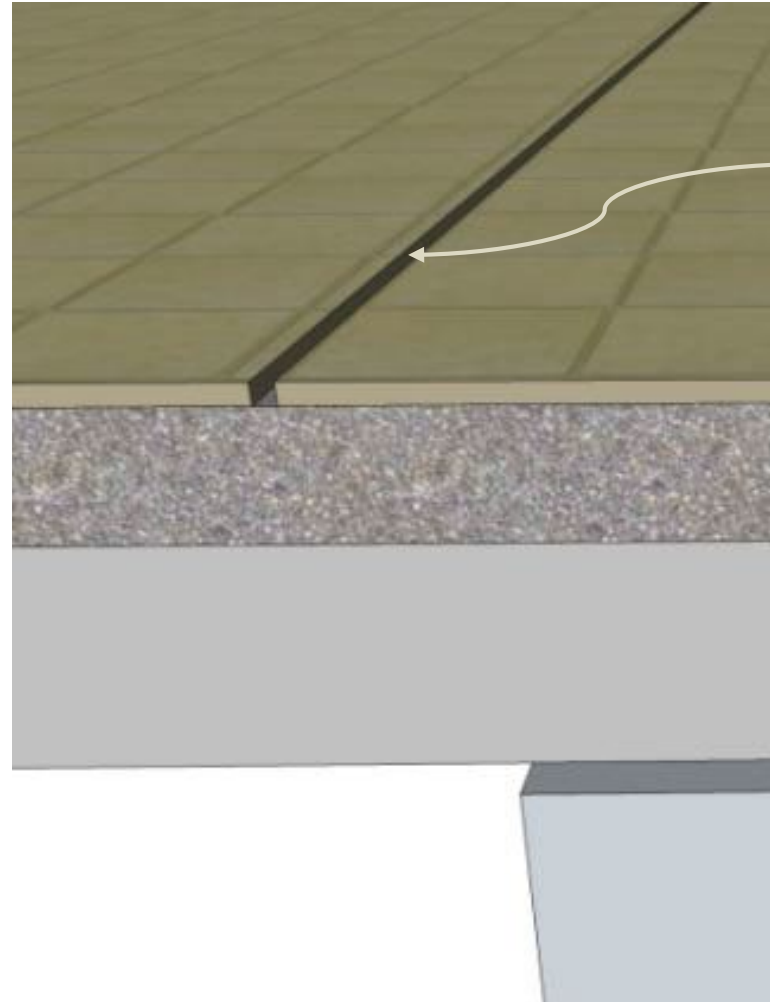
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Control joints (aka expansion joints) allow for thermal expansion and contraction movement of the tiles.

Mapesil AC or **Mapesil LM** being highly flexible seals this joint and allows for movement.



**Mapesil
LM**

**Mapesil
AC**



APPLY THE MEMBRANE:

Always 2 Coats

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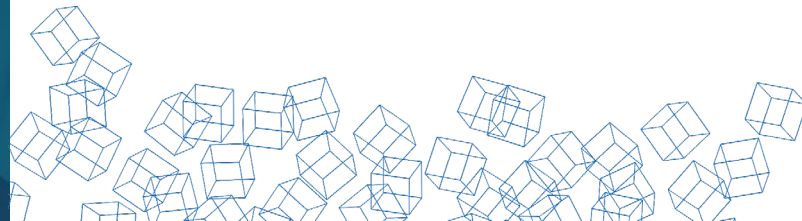
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REMEMBER:

We always apply membrane in 2 coats:

- 🔄 Prime the substrate to help stop pinholing of membrane
- 🔄 One thick coat would take a very long time to dry.
- 🔄 A single coat can develop pinholes.
- 🔄 2 coats reduces the chances of thin spots.



APPLY THE MEMBRANE:

Apply the Correct Thickness

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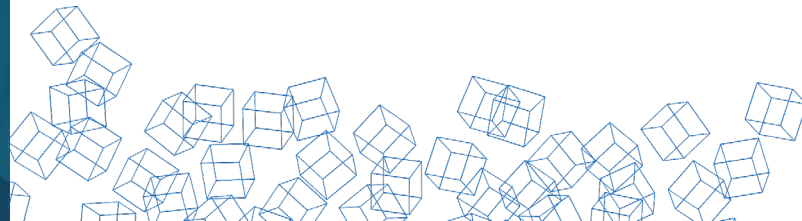
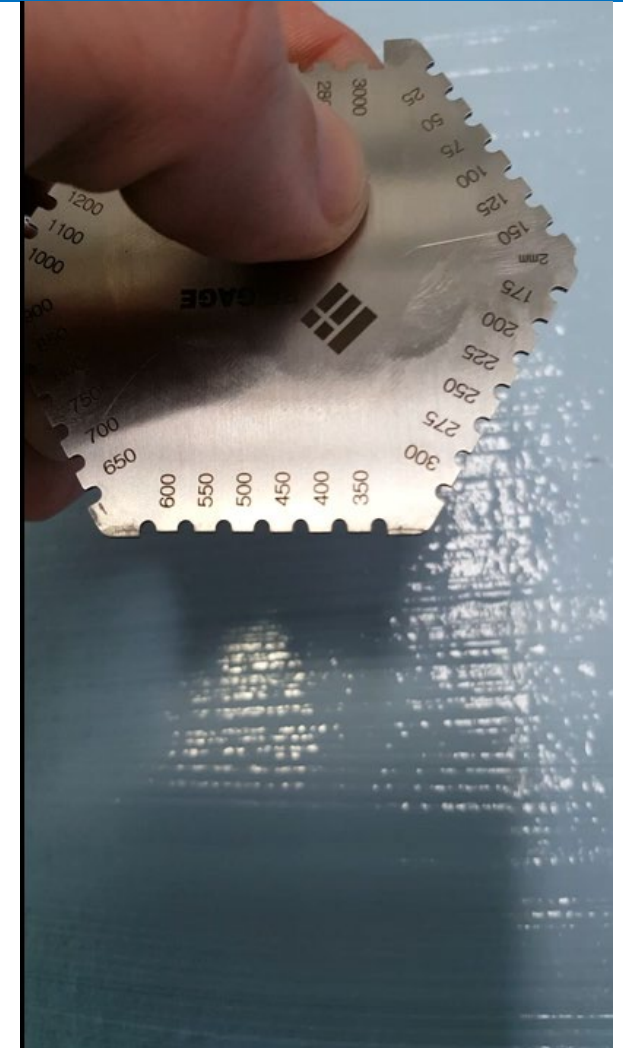
Membranes need to achieve a certain thickness in order to function as per the product TDS and to block water.

Measure via:

- 🔄 Consumption calculation from technical data sheet
- 🔄 Use a wet film thickness (WFT) gauge

CONSUMPTION

Application by trowel or roller:
Approx. 1.6 kg/m² per mm of thickness.



Demonstration of Liquid-applied Membrane Application with MAPELASTIC AQUADEFENSE

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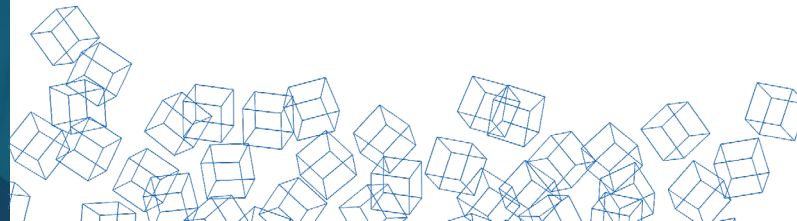
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Click image to play video





End of PART 3
Answer questions 14 and 15



PART 4:

MAPEI PRODUCT SELECTION

MAPEI Waterproofing Products

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Mapenet



A roll of blue waterproofing material, likely a membrane, standing upright.

Mapetex Sel



A roll of light blue waterproofing material, likely a membrane, partially unrolled to show its texture.

Mapeband



Two boxes of Mapeband waterproofing tape. One is blue and white, the other is white and blue. Both feature the MAPEI logo and product name.

Mapeband Easy



A box of Mapeband Easy waterproofing tape, white with blue and red accents, featuring the MAPEI logo.

Mapeband PE 120



A box of Mapeband PE 120 waterproofing tape, white with blue and red accents, featuring the MAPEI logo.

Mapeband SA



A roll of blue Mapeband SA waterproofing tape with perforations, partially unrolled.

Mapegum WPS



Two buckets of Mapegum WPS. The left one is white with a blue lid, and the right one is white with a blue lid. Both feature the MAPEI logo and product name.

Mapelastic Aquadefense



Two buckets of Mapelastic Aquadefense. The left one is white with a blue lid, and the right one is white with a blue lid. Both feature the MAPEI logo and product name. Two red 'X' marks with the text 'BRANZ Appraised' are placed below the buckets.



Primer 3296



An acrylic primer with strong penetrating action for consolidating porous surfaces and screeds.

Where to use:

- With *Mapelastic Smart / Mapegum WPS / Mapelastic AquaDefense*. Plaster Board, Fibre Cement Sheeting, Concrete and concrete block.
- **DO NOT USE AS A PRIMER ON PLYWOOD**

Primer S



Primer S is a waterproof sealing primer

Where to use:

- Plywood and timber (diluted 1/1 with water)
- *Mapeband Blue* with *Mapelastic/Smart* where the membrane is required to bond to the face of the *Mapeband Blue*

ECO Prim Grip



Is a once component fast drying bond enhancing primer for use over existing ceramic and stone tile finishes and other non-porous substrates. Suitable for internal and external installations..

Where to use:

- Internally with *Mapegum WPS / Mapelastic AquaDefense / Mapelastic Smart*: Existing tiles, polished concrete, pre-cast elements and PVC floor waste flanges.
- Externally with *Mapelastic Smart*: Existing tiles, polished concrete, pre-cast elements and PVC floor waste flanges.

Planiseal MR



Two component (1:1 by volume ratio), water-based, light grey coloured, epoxy primer.

In a single coat:

- General primer for improved adhesion.
- Primer for green substrates prior to applying membranes.
- In two coats - A moisture Barrier for rising damp

Adesilex LP



Is a contact adhesive for welding high-pressure pipes in PVC and for *Mapeband & Mapeband PE120*.

Where to use:

- Bonding *Mapeband to Mapeband and Mapeband corners*.
- Bonding *Mapeband gaskets* to PVC floor waste flanges.
- Bonding rigid PVC water drainage pipes and PVC gutters for residential and industrial use.

Mapeband Blue



Is a rubber-coated alkali resistant polyester tape with an elongation of over 300% for waterproofing details used in conjunction with *Mapeband gaskets*.

Available as a tape 120mm wide 10 and 50m long. Also in ready-made internal and external corners (90 and 270 degrees) and pipe gaskets 118x118mm, 400x400mm & Profiles in 'T' and crosses.

Where to use:

- Waterproofing corners between adjacent walls and between walls and floors.
- Flexible waterproofing of expansion joints in terraces and balconies. Suitable for use in full immersion
- Sealing pipes and drains with a combination of *Mapeband Gaskets*.
- Sealing expansion joints in pre-fabricated panels.
- Use Adesilex LP to join the Mapeband Blue

Mapeband Blue



Mapeband PE120



Is a PVC waterproof tape with an elongation of over 135% for internal installations to be used only with *Mapegum WPS* or *Mapelastic AquaDefense*. (not alkali resistant).

- Available as a tape 120mm wide in 10 or 50m long rolls.

Where to Use :

- **INTERNAL USE ONLY**
- For waterproofing expansion joints, corners between adjacent walls and walls & floors.
- Mapeband PE 120 joins are adhered using Adesilex LP

Mapeband SA



Is a Self-adhesive, alkali resistant tape, with non-woven fabric with an elongation of over 480%

- To be used in combination with elastic waterproofing systems such as *Mapelastic Smart*, *Mapegum WPS* and *Mapelastic AquaDefense*.
- Available as a tape 100mm wide in 25m long rolls.

Where to use:

- Waterproofing corners between adjacent walls and between walls and floors.
- Flexible waterproofing of expansion joints in terraces and balconies.
- Sealing pipes and drains with a combination of *Mapeband Gaskets*.
- Not for use in full immersion applications such as swimming pools

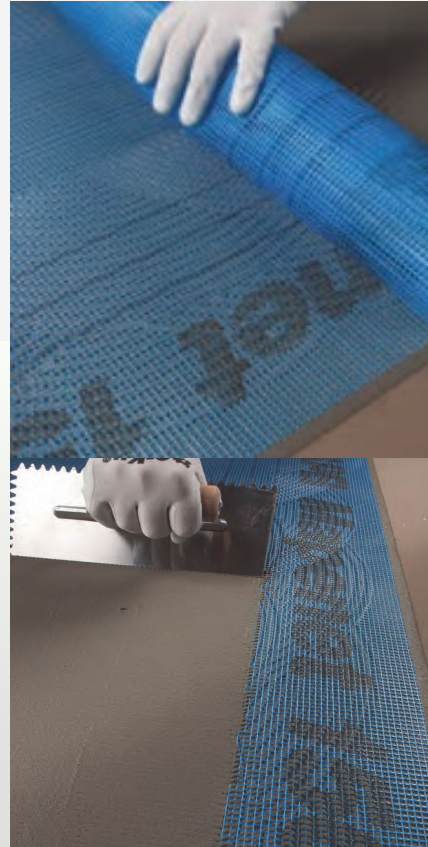
Mapeband Easy



Next generation of Mapeband. Alkali resistant Rubber tape with elongation over 300% (like the original Mapeband) sandwiched between two layers of non-woven polypropylene fabric. Can be joined with membrane rather than solvent adhesive.

Can be used with all MAPEI liquid applied membranes for interior and exterior applications including full immersion applications such as swimming pools

Mapenet 150



Is an alkali-resistant fiberglass mesh of 4 x 4.5mm size weighting 157 g/m².

- Available in rolls 1000mm wide x 50m long.

Where to use:

- Reinforcing:
When waterproofing over timber substrates, fibre cement sheets and acoustic underlays. With *Mapelastick Smart* applied over cement - based surfaces with hair line cracks
- Thickness gauging:
To allow the applicator to accurately estimate the approximate final thickness of the *Mapelastick Smart* membrane application.

Mapetex Sel



Mapetex Sel is an alkali resistant non-woven polypropylene fabric that can be used as a reinforcement with *Mapelastic AquaDefense*, *Mapegum WPS* or *Mapelastic Smart* for internal waterproofing applications and *Mapelastic Smart* for external applications. It is used to add durability and strength to the membranes.

- It may also be used with all **MAPEI** waterproofing membranes as a **crack suppressant providing crack bridging of up to 3mm**

Where to use:

- Bathrooms and shower areas
- Retaining walls
- Balconies and decks including full immersion
- Concrete surfaces subject to shrinkage cracking
- Available in 100mm, 200mm and 1 meter wide rolls

Mapegum WPS



BRANZ Appraised

Is a solvent free one-part, ready to use, fast drying, flexible liquid applied synthetic resin in water dispersion Class 2 membrane with an elongation of up to 180%, supplied in 5 and 25kg buckets.

Applied in 2 x 1mm coats to achieve a final dry film thickness of no less than 1mm

Where to use:

- **Waterproofing interior floors & walls** including shower stalls,.
- Mapegum WPS is not suitable for continuous immersion in water or to rising damp.

See (BRANZ Appraisal #484 Internal)

Important Note:

- Installation should not be carried out at temperatures **below 5°C or exceeding 35°C**

Mapelastic Aquadefense



BRANZ Appraised



Is a solvent free, one part, ready-to-use, fast-drying, liquid applied Class 3 synthetic resin in water dispersion membrane with an elongation of over 300% for waterproofing internal surfaces.

- **Ready for tile installation in as little as 4 hours**
Available in 15kg drums.
- Applied in 2 x 0.5mm coats to achieve a finished dry film thickness of 0.8mm

Where to use:

- Waterproofing interior floor & wall surfaces including shower stalls, providing they are not subject to continuous immersion in water or to rising damp. **See BRANZ Appraisal #484 Internal)**
- **Important Note:** Installation should not be carried out at temperatures **below 5°C or exceeding 35°C**

Mapelastic Smart




Is a two-part, flexible, cementitious **Class 2** liquid applied membrane, with an elongation of up to 120%

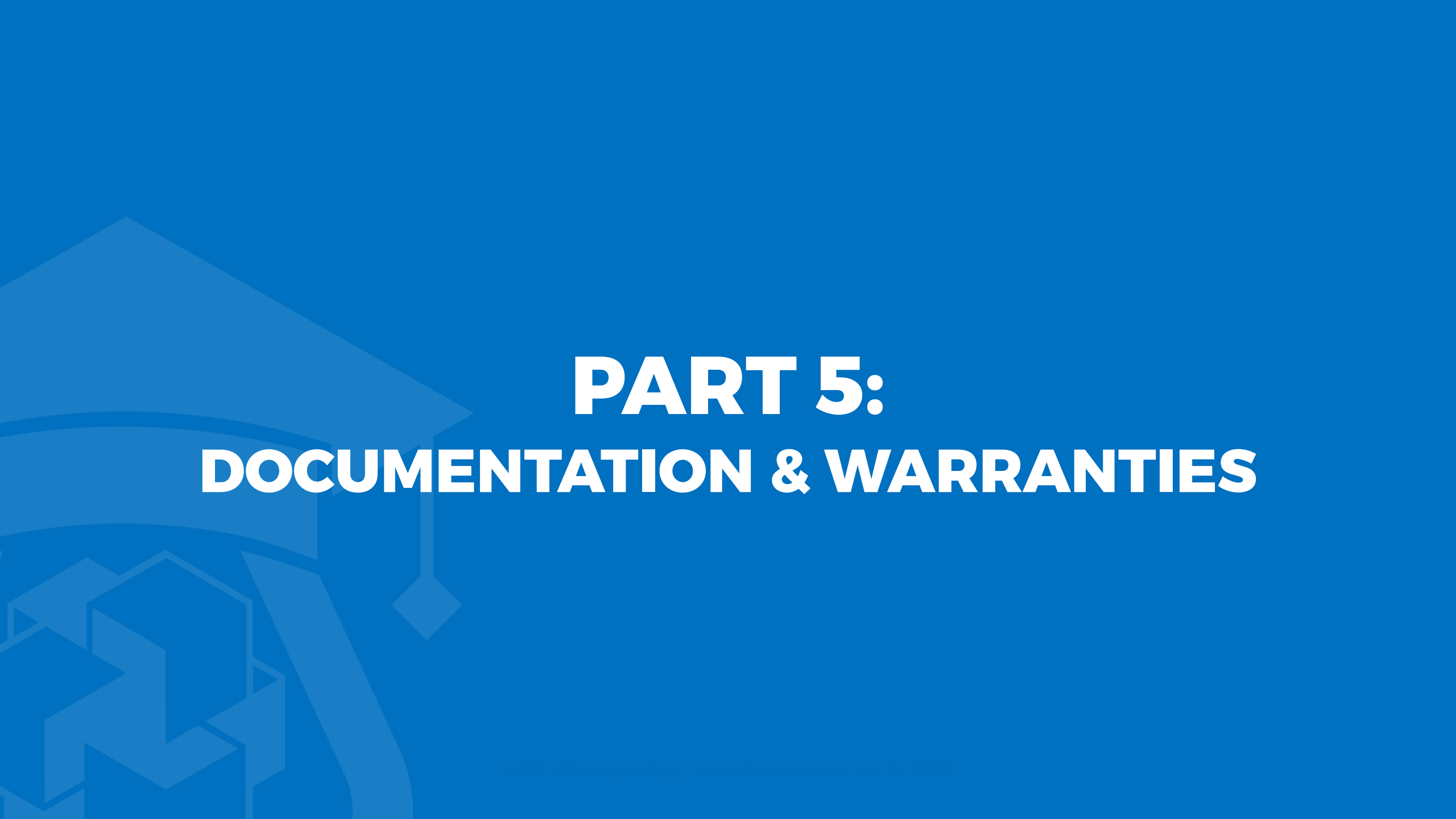
- For **internal and external use**.
- A complete kit is made up of **Part A powder in 20kg bags** and **Part B liquid in a 10kg plastic container**.
- **Mapelastic Smart must be mixed in the quantities supplied and part mixes must have the A and B components weighed.**
- Applied in 2 x 1mm coats to achieve a final dry film thickness of 2mm

Where to Use:

- Concrete basins for containing water, also drinking water.
- Bathrooms, showers, balconies, terraces etc.
- Protective coverings for retaining walls.
- Flexible protection of small section concrete structures, subject to deformation under load (e.g. pre-cast structures)
- Protective coatings for concrete surfaces subject to water and chemical attack, e.g. de-icing salts, sulphates, carbon dioxide etc.
- Permeable to water vapour



End of PART 4
Answer questions 16 to 19

The background features a solid blue color with faint, abstract geometric shapes in a lighter shade of blue. These shapes include a large triangle on the left, a curved line, and several overlapping rectangular and hexagonal forms, creating a modern, architectural feel.

PART 5:

DOCUMENTATION & WARRANTIES

BRANZ Appraised Waterproofing Systems

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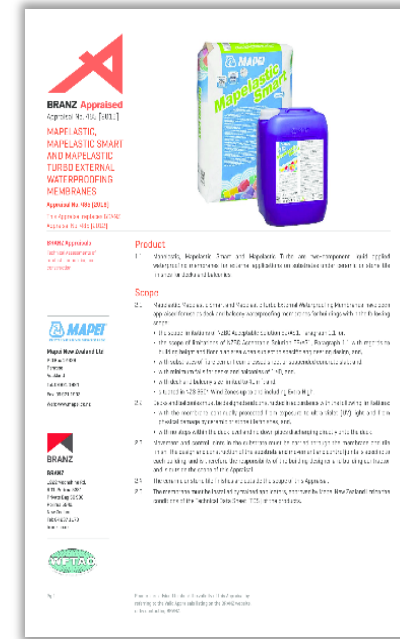
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For E3 - BRANZ Appraisal NO. 484
Mapegum WPS, Mapelastic AquaDefense premixed and Mapelastic Smart wet area membranes are liquid applied waterproofing membranes for use under ceramic or stone tile finishes on **Internal Wet Areas - E3 Internal**.



For E2 - BRANZ Appraisal NO. 485
Mapelastic Smart wet area membranes are liquid applied waterproofing membranes for use under ceramic or stone tile finishes on **External Decks and Balconies - E2 External**.

Product Performance Warranty

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When installed to a MAPEI specification and as per the information in the most current Product Technical Data Sheet

- MAPEI NEW ZEALAND LTD will provide a product performance warranty for its liquid applied waterproofing products.
- Mapelastic Smart, Mapegum WPS & Mapelastic AquaDefense are all warranted for 15 years if the system is applied by a MAPEI Trained Applicator. All MAPEI trained applicators are issued with the applicator number and a Photo ID applicator Card.
- MAPEI Product Performance Warranties are applied for on line on the following link
<https://www.mapei.com/nz/en/warranties>
- For external waterproofing, it is recommended that the applicators be LBP certified to meet the new requirement's from MBIE



The Importance of Tank Testing

INTRODUCTION & STANDARDS

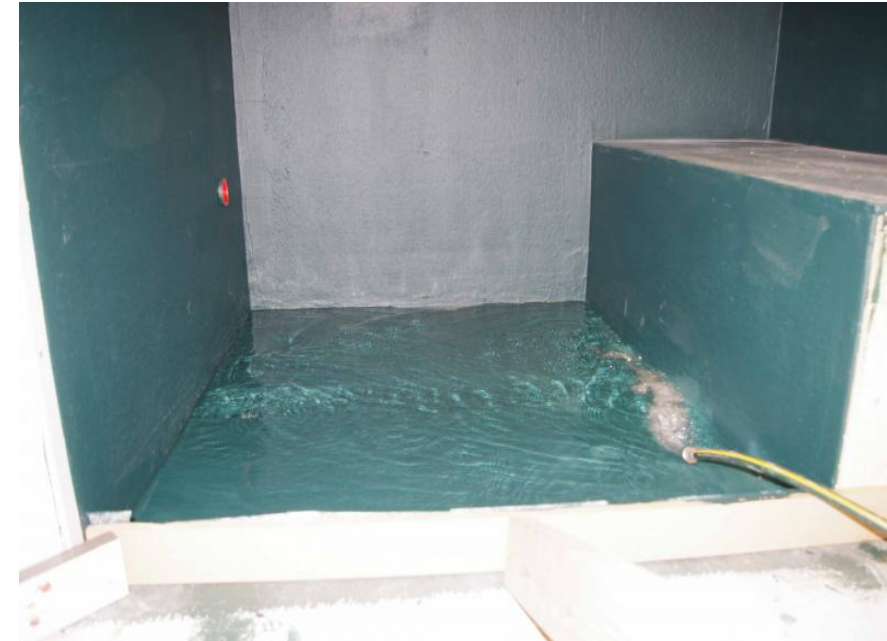
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- 🚫 The greatest concern to all parties involved is: **Will it leak after installation!**
- 🚫 The most common error is a lack of Tank Testing as the only way to know if it won't leak before tiling is to complete a Tank Test.
- 🚫 The most important requirement for tank testing is to make sure that **the membrane been allowed to cure properly prior to the tank test being carried out**



*** MAPEI NZ Ltd. Highly Recommends Tank Testing**

Summary

- 🛠️ A basic understanding of the NZ Building Code and the Standards is required for internal and external waterproofing application
- 🛠️ Substrate consideration and preparation is paramount where waterproofing is to be installed.
- 🛠️ Recognition of where to waterproof in wet areas and attention to detailing is critical.
- 🛠️ Anyone can waterproof - not everyone does it well - **The Skill is in the Detail**
- 🛠️ The overall primary concern for all parties is still : **Will it Leak?**
- 🛠️ Building legislation has become clearer and Councils are asking for a Producer Statement (PS3) from the Applicator for installation work completed.

MAPEI recommends a **system based approach** for **waterproofing** and **tiling installations**.

MAPEI offers **complete installation systems** for **all** your **waterproofing** and **tiling** requirements.

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Work Method Statements

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SUBSTRATE PREPARATION

DETAILING

MAPEI PRODUCT SELECTION

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MAPEI installations systems for waterproofing are detailed in our Work Method Statements

End of the course
Answer question number 20

THANK YOU



Jennifer Price
Product Manager
Mapei New Zealand