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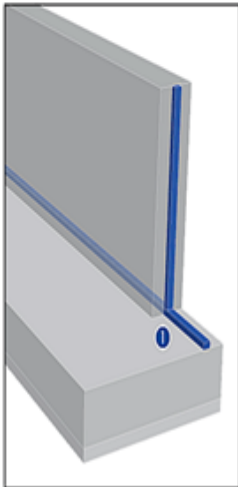
- **WATER PROOFING**
- **REPAIR**
- **CONCRETE PROTECTION**

**Quality Needs Quality**

- Construction joints
- Expansion joints subjected to negative water pressure
- Expansion joints subjected to positive water pressure
- Below ground concrete wall and slap –external waterproofing
- Below ground concrete wall and slap –internal waterproofing
- Below ground concrete block wall and slap –external waterproofing
- Below ground concrete block wall and slap –internal waterproofing
- Multi story car park
- Lift pit
- Planter
- Diaphragm wall
- Tunnel-refurbishment
- Retaining wall
- Swimming pool –new construction
- Swimming pool –new construction refurbishment
- Swimming pool-new construction with tiles
- Pipe inlets –new construction
- Pipe inlets –remedial work
- Shutter tie holes
- Plugging water leaks

# Construction joints

**A New Construction**



**B New Construction**



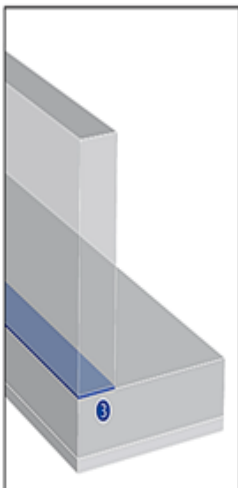
1) BENTOKEM

2) FLEXITAPE bonded with KEMSEAL F,  
1kg/Linear meter

3) CRYSTAL SEAL 1.5Kg/m<sup>2</sup>

4) Reglet 30\*30 mm and  
fillet pointed with KEMREPAIR

**C New Construction**



**D Existing Structure - Repair**



## Application Instructions:

### Solution A, New Construction:

1) **(BENTOKEM)** water bars are glued to the joint surface with **(PROFIX)** or mechanically fixed with nails (approx. 4-5 nails per linear meter). Ensure that the BENTOKEM is in firm contact with the surface of the substrate.

### Solution B, New Construction:

2) - The damp substrate must be sound, open-textured, clean and free from oil and grease.  
 - Apply a first coat of **(KEMSEAL F)** (0.6 kg/linear meter), at least 1 cm beyond the tape.  
 - Place and embed the VANDEX CONSTRUCTION JOINT TAPE in the **(KEMSEAL F)** coat.  
 - Overcoat the **(FLEXITAPE)** with a second coat of **(KEMSEAL F)** (0.4 kg/linear meter).

### Solution C, New Construction:

3) Apply one coat of **(CRYSTAL SEAL )** at the rate of 1.5 kg/m<sup>2</sup> to joint surface just prior to casting the wall.

### Solution D, Existing Structure - Repair

4) Rout out a reglet approx. 30 × 30 mm along construction joints. Point the reglet and form a fillet with **(KEMREPAIR)**.

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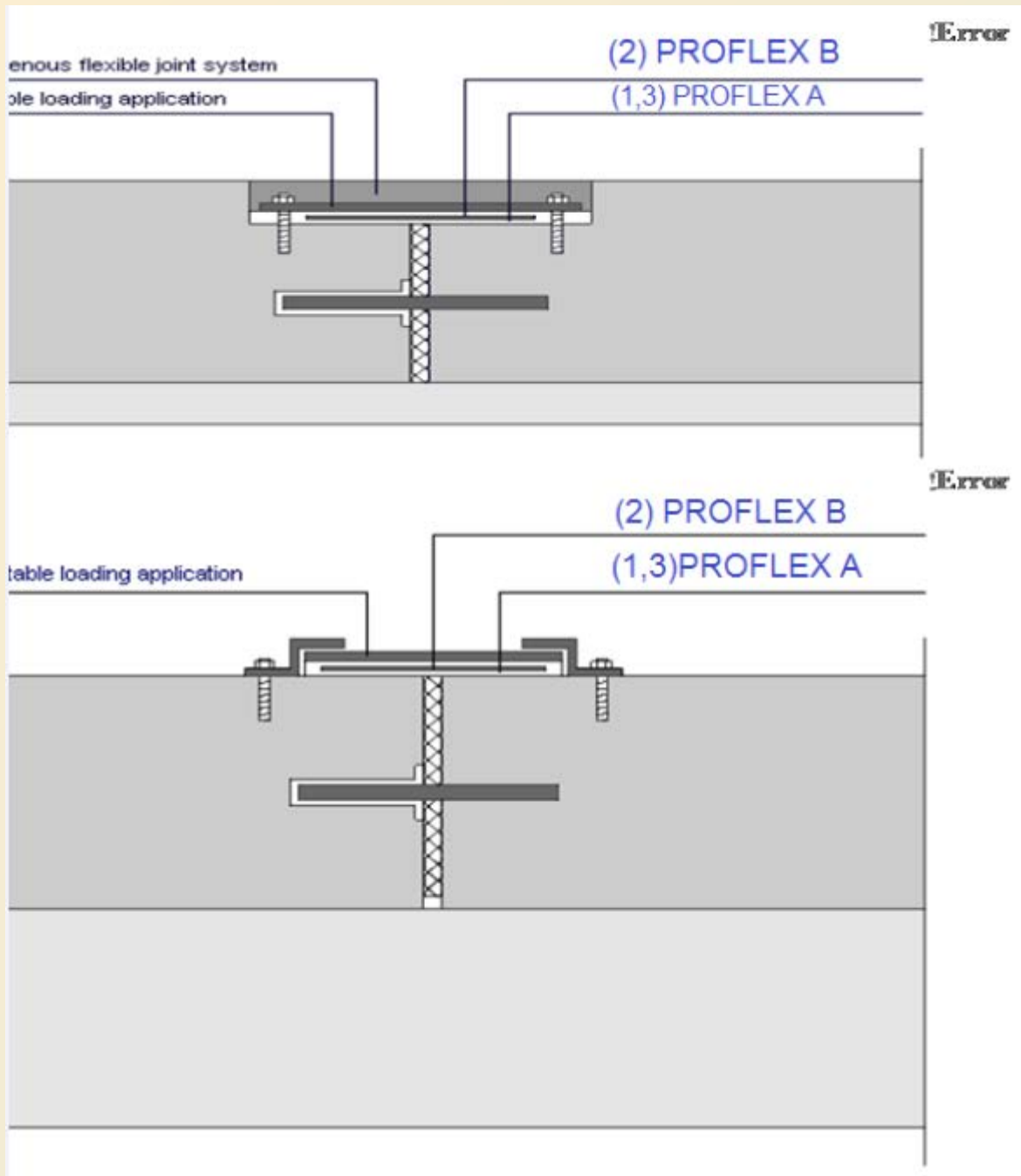
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# Expansion Joint s subjected to negative water pressure



## Application Instructions

- 1) Apply first coat of **(PROFLEX A)** to the prepared concrete substrate.
- 2) Place the **(PROFLEX B)** into the VANDEX UNIFLEX NV whilst still plastic.
- 3) Apply second coat of **(PROFLEX A)**  
Provide appropriate mechanical
- 4) protection for the **(PROFLEX B)** system.
- 5) Apply appropriate bituminous flexible system.

The recommended product types and consumptions in PROKEM specifications, data sheets and application guidelines may vary in different markets due to local requirements and conditions .

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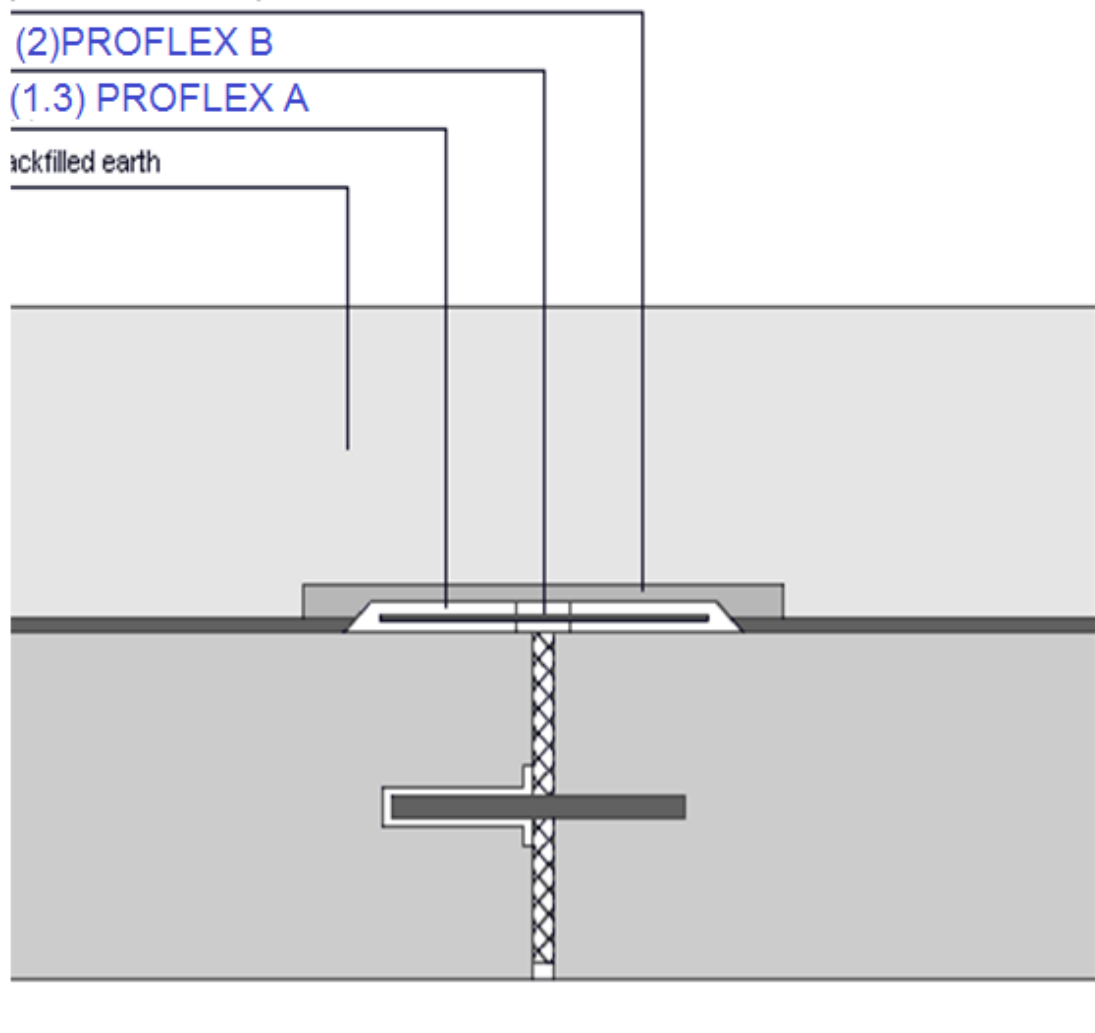
# Expansion joints subjected to positive water pressure

) Suitable mechanical protection

(2) PROFLEX B

(1.3) PROFLEX A

backfilled earth





## • Application Instructions

- 1) Apply first coat of **(PROFLEX A)** to the prepared concrete substrate.
- 2) Place the **(PROFLEX B)** into the **(PROFLEX A)** whilst still plastic.
- 3) Apply second coat of. **(PROFLEX A)**
- 4) Provide appropriate mechanical protection to the **(PROFLEX B)** system.

The recommended product types and consumptions in PROKEM specifications, data sheets and application guidelines may vary in different markets due to local requirements and conditions.

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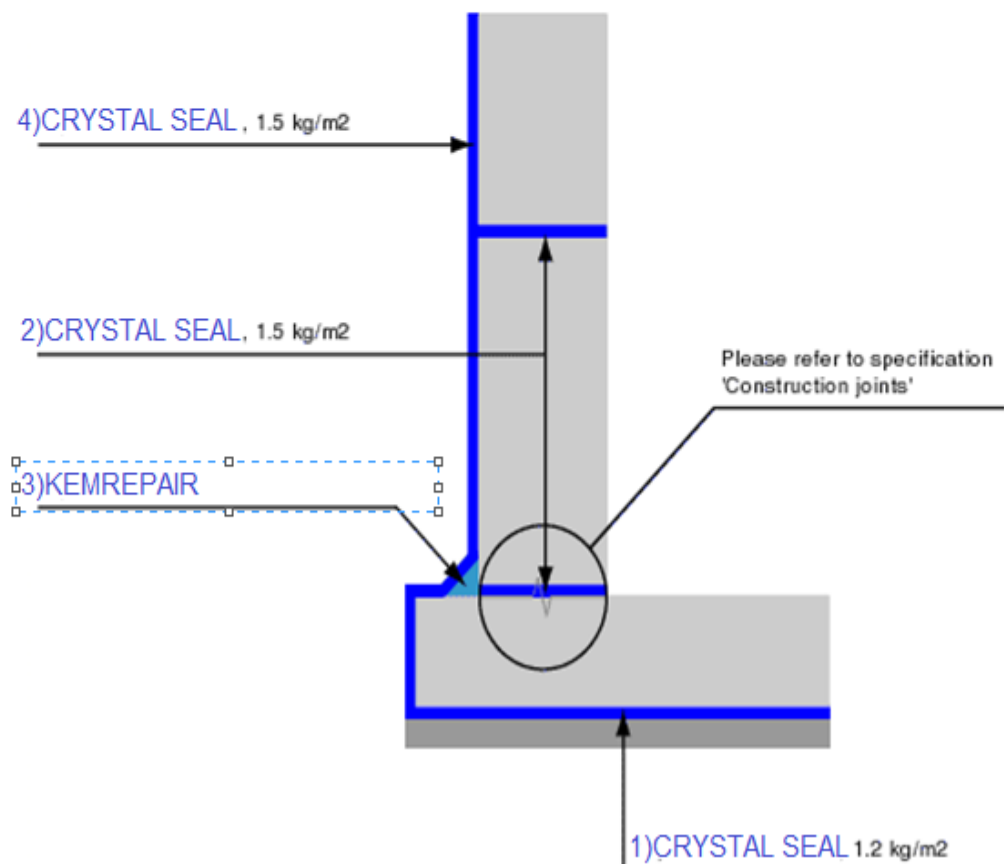




# Below ground concrete wall and slab - external waterproofing

## Scope:

External waterproofing of below ground wall and slab structures subject to ground moisture or hydrostatic pressure.



## • Application Instructions

- 1) Apply one coat of **(CRYSTALSEAL)** at the rate of 1.2 kg/m<sup>2</sup> to the prewatered blinding concrete just prior to the concrete pour.
- 2) Apply one slurry coat of **(CRYSTALSEAL)** at the rate of 1.5 kg/m<sup>2</sup> to all construction joint surfaces.  
Please refer to specification for details or alternatives.
- 3) Apply a coved fillet of **(KEMREPAIR)** at wall/floor junction.
- 4) To the vertical surfaces and over the fillet apply two coats of **(CRYSTALSEAL)** at the rate of 0.75 kg/m<sup>2</sup> each .

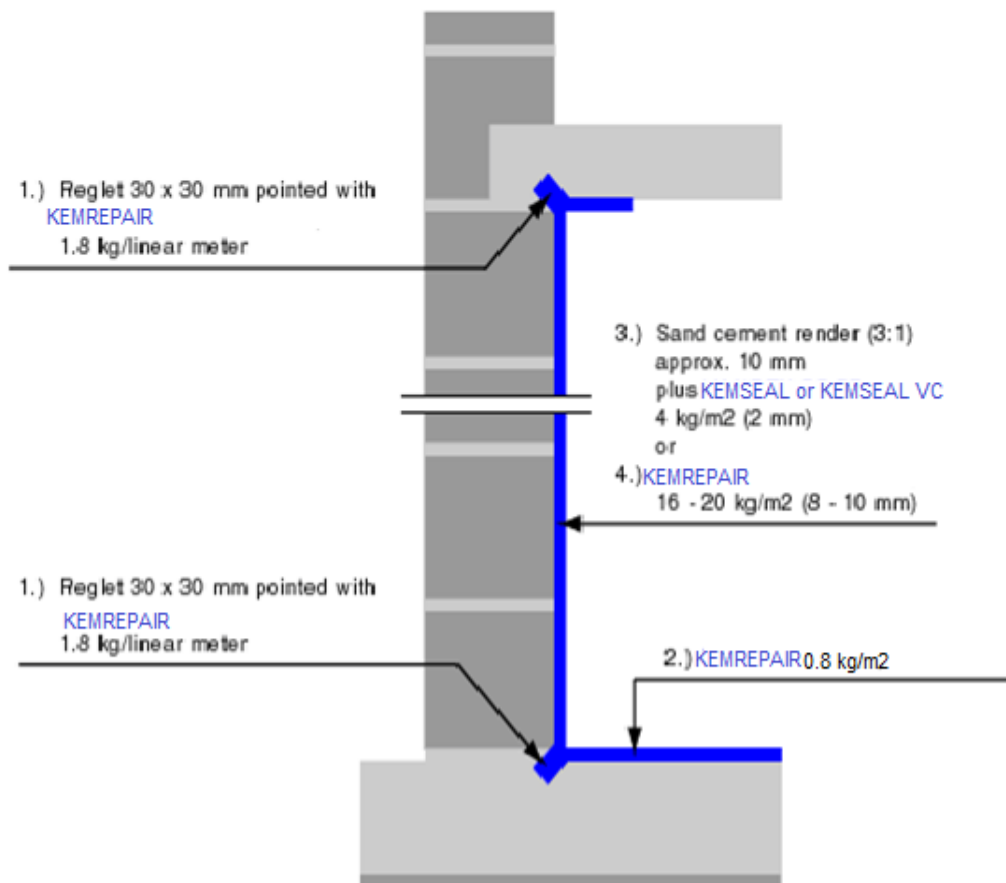
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# Below ground concrete block wall and slab - internal waterproofing

## Scope:

Internal waterproofing of new or existing concrete block wall/brick wall and slab structures not subject to hydrostatic pressure.



- **Application Instructions**

1) Chase out a reglet approx. 30 x 30 mm along the construction joints. Fill the cleaned reglet with **(KEMREPAIR)** at the rate of approx. 1.8 kg/linear meter, such that it finishes flush with the internal surface.

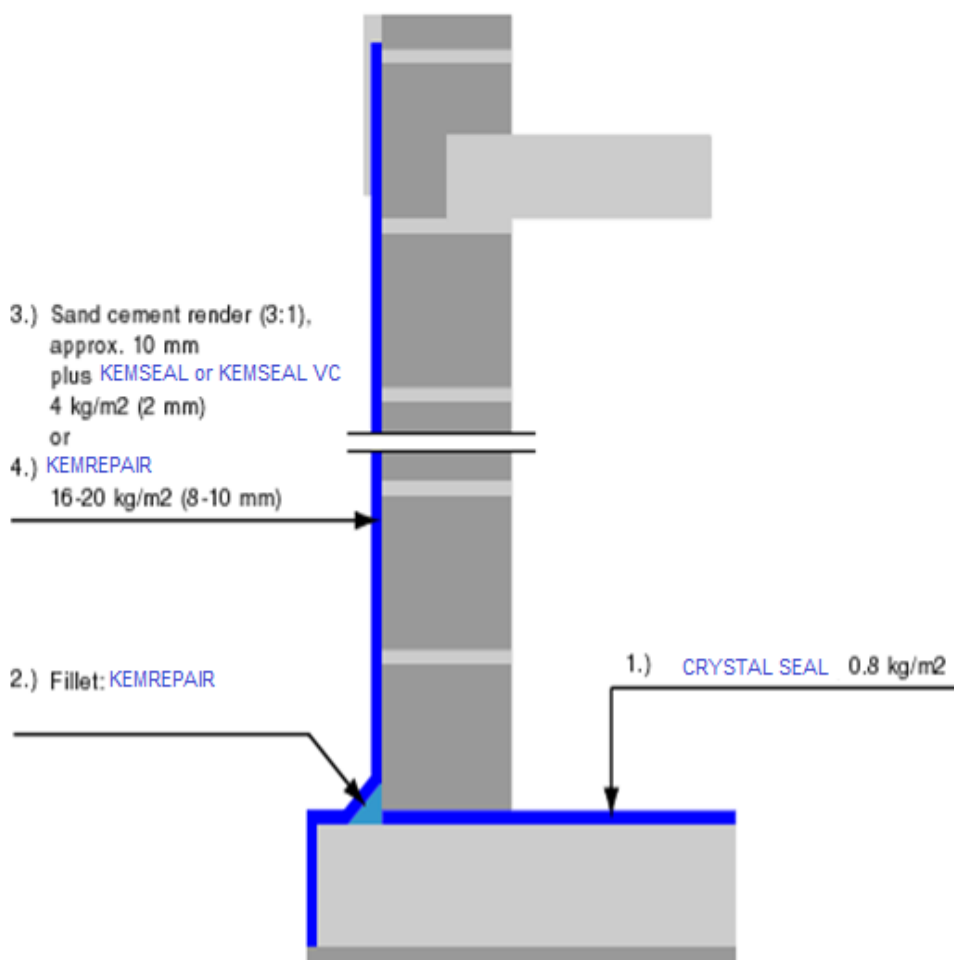
2) Apply one coat of **(CRYSTALSEAL)** at the rate of 1.2 kg/m<sup>2</sup> to slab surface.

3) To the interior wall surface apply two coats of **(CRYSTALSEAL)** at the rate of 0.75 kg/m<sup>2</sup> each .

# Below ground concrete block wall and slab - external waterproofing

## Scope:

External waterproofing of concrete block wall/brick wall and slab structures not subject to hydrostatic pressure.



**Quality Needs Quality**

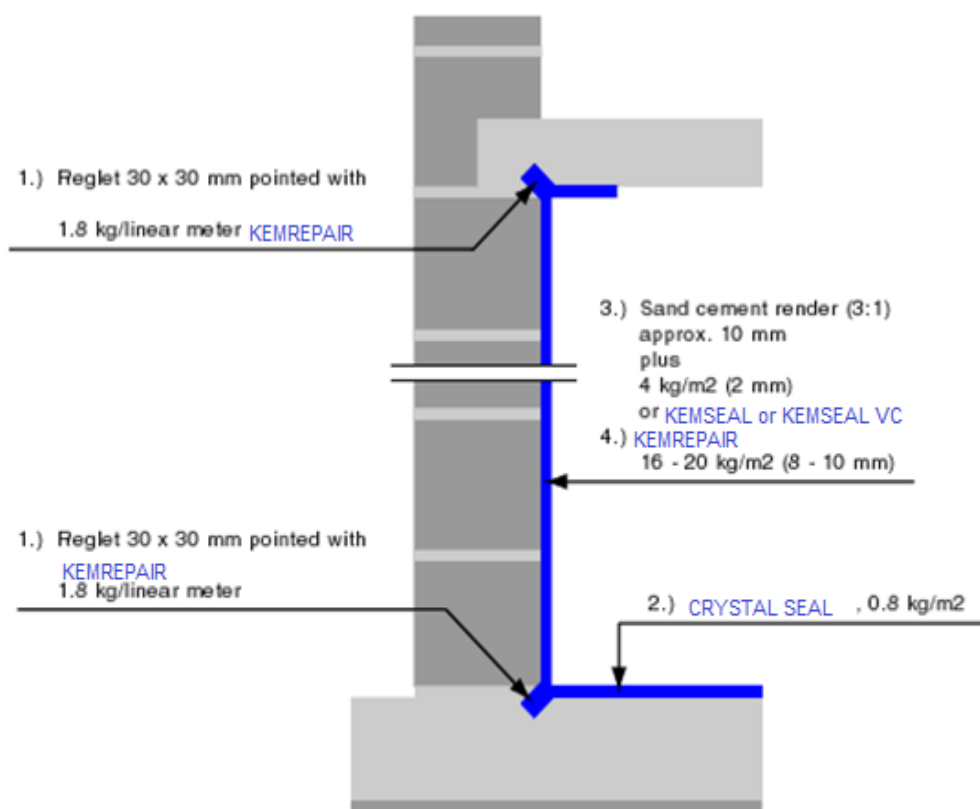
## • Application Instructions

- 1) Apply one coat of **(CRYSTALSEAL)** , at a rate of 0.8 kg/m<sup>2</sup>, to the slab surface.
- 2) Apply a cove fillet of **(KEMREPAIR)** at the slab/wall junction.
- 3) To the vertical surface apply a sand-cement render (3:1) to a thickness of approx. 10 mm. On top of the roughened surface apply one coat of **(KEMSEAL OR KEMSEAL VC)** , at a rate of 4 kg/m<sup>2</sup> (2 mm).  
or
- 4) Apply a single layer **(KEMREPAIR)** at a rate of 16 - 20 kg/m<sup>2</sup> (8 – 10 mm) .

# Below ground concrete block wall and slab - internal waterproofing

## Scope:

Internal waterproofing of new or existing concrete block wall/brick wall and slab structures not subject to hydrostatic pressure.





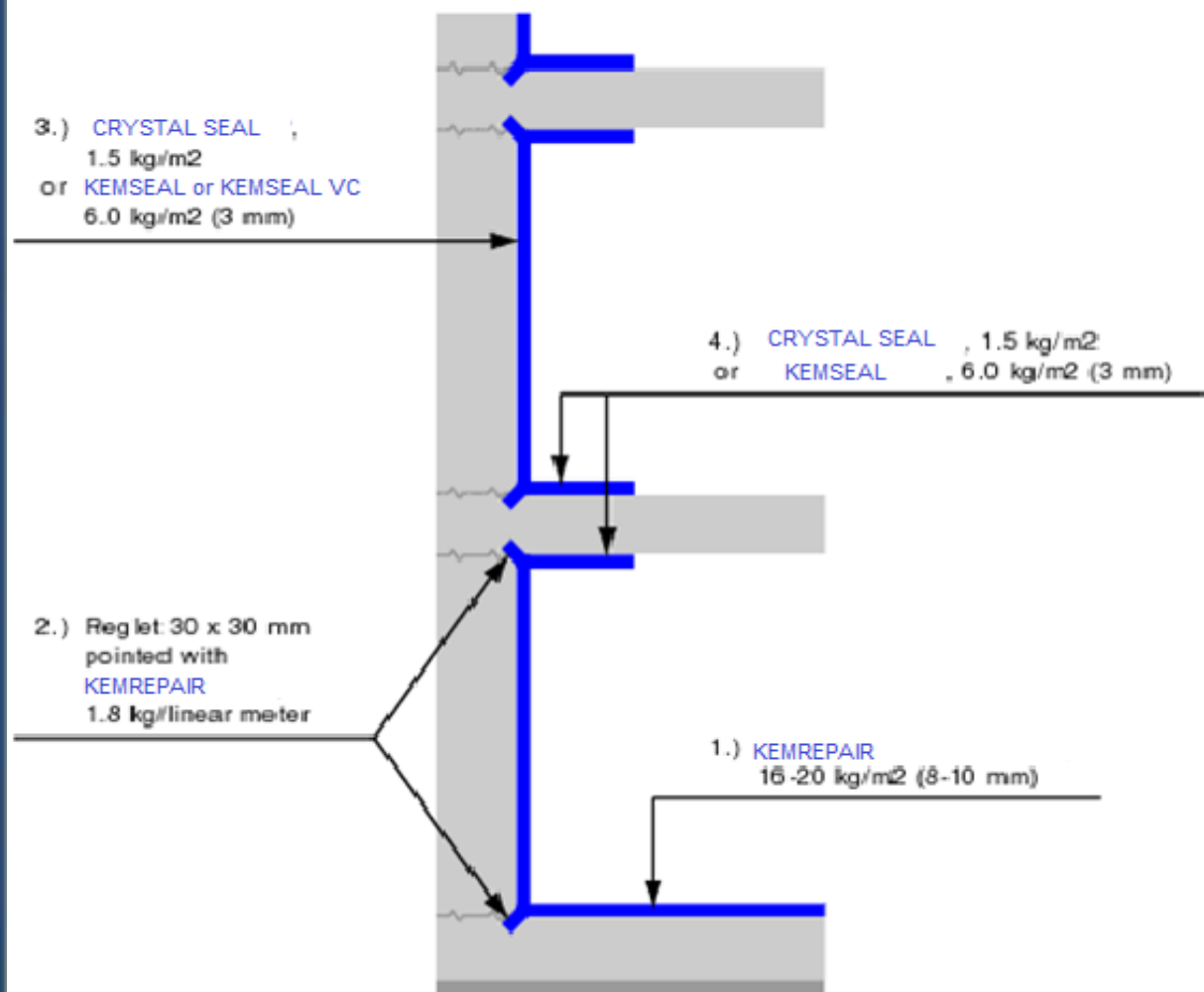
## • Application Instructions

- 1) Apply a coved fillet of **(KEMREPAIR)** at the wall / floor junction.
- 2) Apply one coat of **(CRYSTALSEAL)** at the rate of 0.8 kg/m<sup>2</sup> to the slab surface and footing.
- 3) To the vertical surface apply a sand cement render (3:1) to a thickness of approx. 10 mm. On top of the roughened surface apply one coat of **(KEMSEAL OR KEMSEAL VC)** at the rate of 4 kg/m<sup>2</sup> (2 mm.)

Or

- 4) Apply a single layer **(KEMREPAIR)** at the rate of 16 - 20 kg/m<sup>2</sup> (8-10 mm).

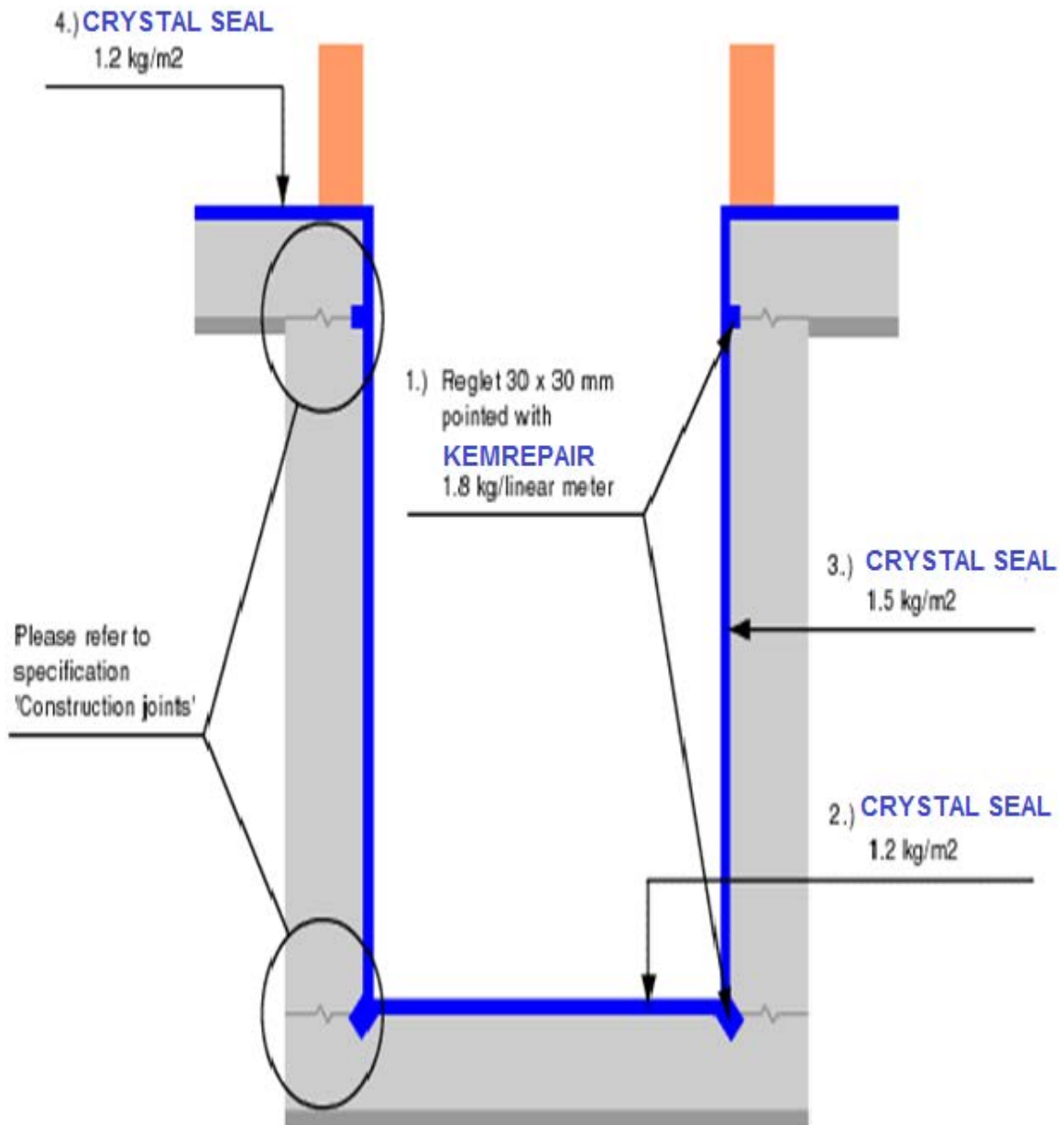
# Multi story car park



## • Application Instructions

- 1) Apply a waterproof screed of - 16 ,  
 $20 \text{ kg/m}^2$  (8 - 10 mm) to the base slab.
- 2) Chase out a reglet approx. 30 x 30 mm along the construction joints. Fill the cleaned reglet with **(KEMREPAIR)** such that it is flush with the surface, at the rate of approx. 1.8 kg/linear meter.
- 3) To the interior wall surfaces apply two coats of **(CRYSTALSEAL)** at the total rate of  $1.5 \text{ kg/m}^2$ . Alternatively: Two coats of **(KEMSEAL OR KEMSEAL VC)** at the total rate of  $6 \text{ kg/m}^2$  (3 mm). Apply the second coat whilst the first is still green.
- 4) To the perimeter of the floor surfaces, apply two coats of **(CRYSTALSEAL)** or **(KEMSEAL OR KEMSEAL VC)** in a stripe approximately 0.6 m wide, at the same rate as 3.) above .

# Lift pit



## • Application Instructions

- 1) Chase out a reglet approx. 30 x 30 mm along the construction joints. Fill the reglet with, **(KEMREPAIR)** such that it flush with the surface, at a rate of approx. 1.8 kg/linear meter.
- 2) Apply one coat of **(CRYSTALSEAL)** 1.2 kg/m<sup>2</sup> to the slab surface.
- 3) To the interior wall surfaces apply two coats of **(CRYSTALSEAL)** at the total rate of 1.5 kg/m<sup>2</sup>.
- 4) Apply one coat of **(CRYSTALSEAL)** at the rate of 1.2 kg/m<sup>2</sup>, to main slab surface.

Note:

Where a better aesthetic appearance of the waterproofing treatment is desired, use equivalent amounts of **(CRYSTALSEAL WHITE)** in steps 2 and 3 .

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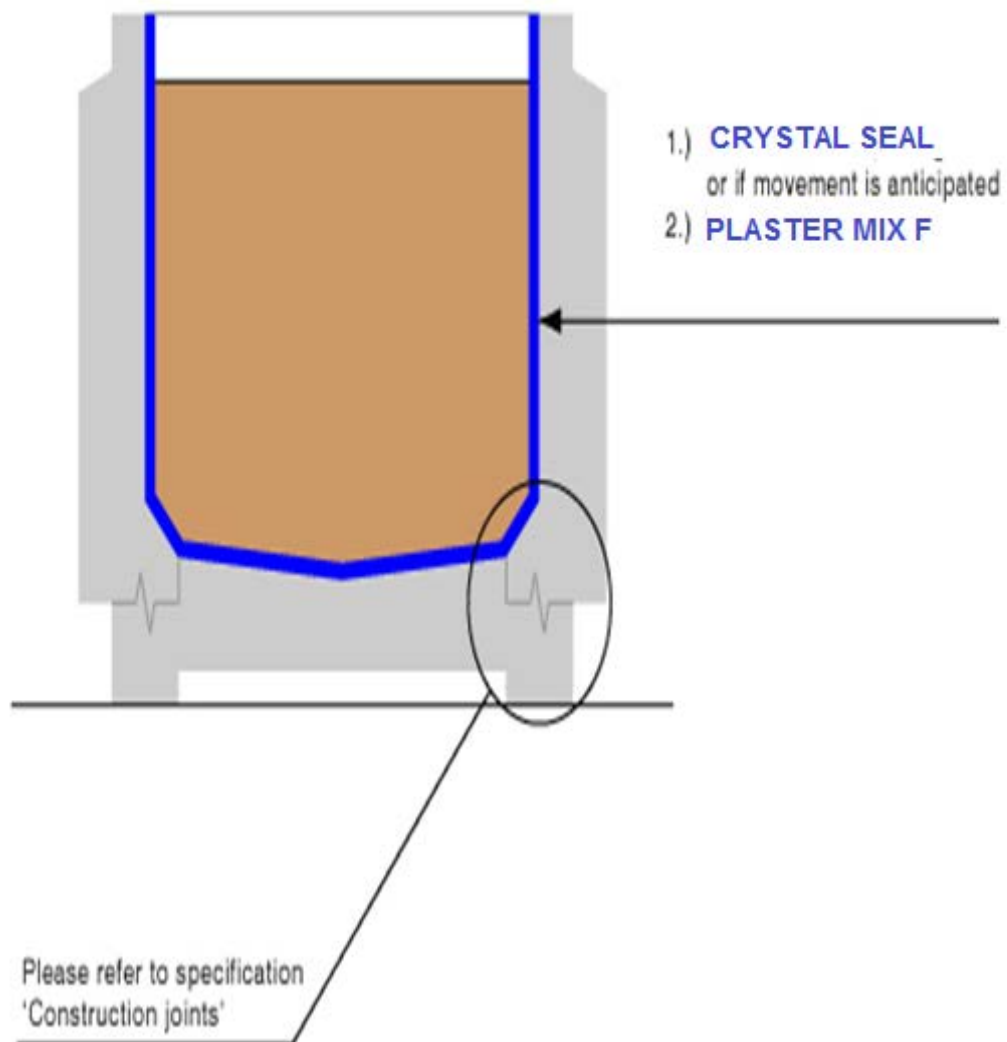
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# Planter



## • Application Instructions

1) Apply two coats of **(CRYSTALSEAL)** at the total rate of 1.5 kg/m<sup>2</sup>, to the interior wall and floor surfaces.

Or

2) Where movement is expected because of temperature fluctuations, etc. apply two coats of **(PLASTER MIX F)**

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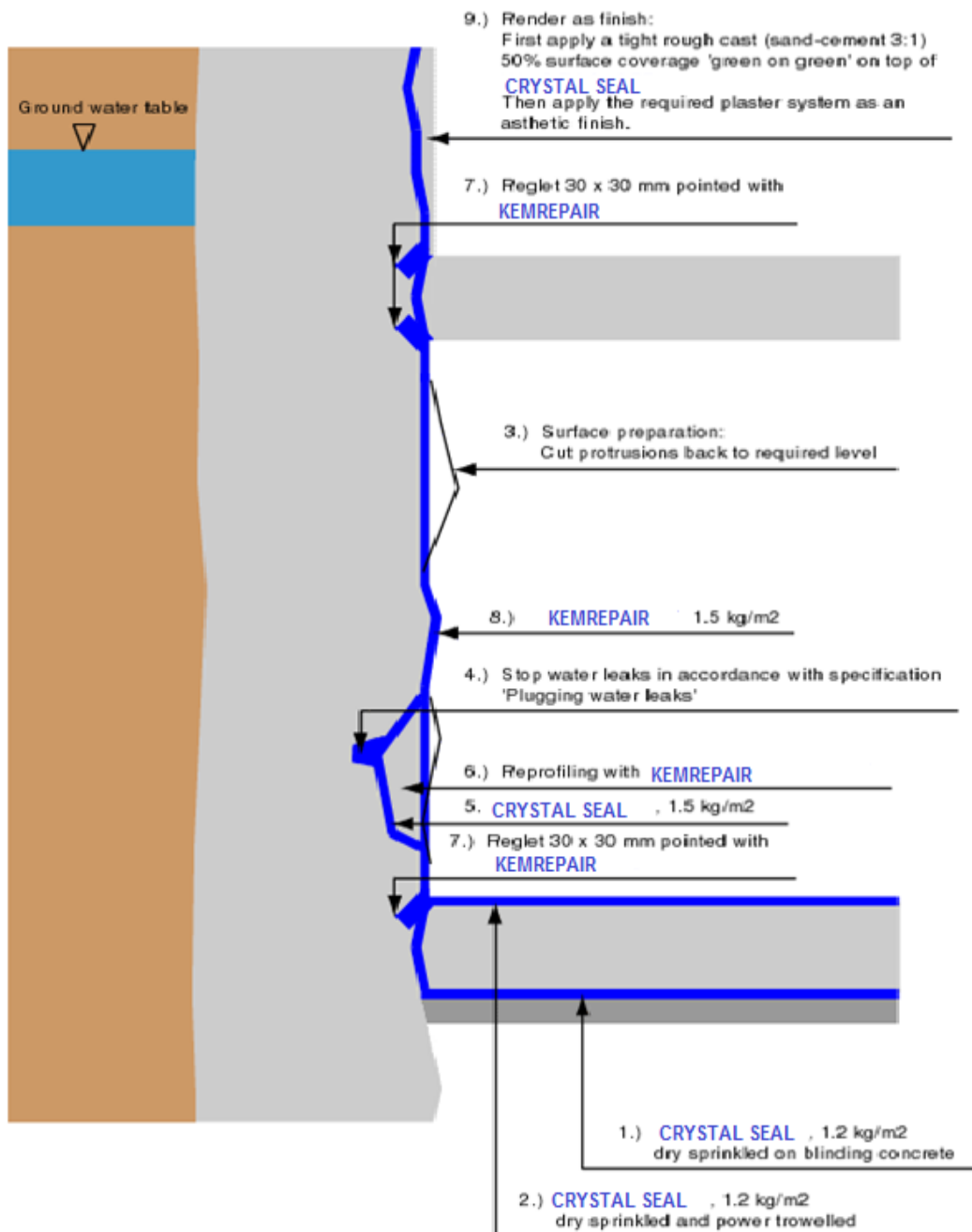
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# Diaphragm wall



## • Application Instructions

- 1) Dry sprinkle **(CRYSTALSEAL)** at the rate of 1.2 kg/m<sup>2</sup> to the prewatered blinding, just before pouring the concrete.
- 2) Apply one coat of **(CRYSTALSEAL)** at the rate of 1.2 kg/m<sup>2</sup> to the floor by dry sprinkling, followed by power toweling.
- 3) Remove all cement laitance, loose particles and any foreign substances by appropriate means. The concrete must have an open capillary system to ensure chemical penetration and maximum bonding.  
Where appropriate cut back protrusions to required level.
- 4) Stop water leaks in accordance with the specification ['Plugging water leaks.'](#)
- 5) Apply a slurry coat of **(CRYSTALSEAL)** at the rate of 1.5 kg/m<sup>2</sup>, to the remaining part of the cavity.
- 6) Reprofile the cut out area with **(KEMREPAIR)** in layers, the numbers depending on the total layer thickness.
- 7) Chase out a reglet approx. 30 x 30 mm along the construction joints. Fill the reglet with **(KEMREPAIR)** at the rate of approx. 1.8 kg/linear meter.
- 8) Apply two coats of **(CRYSTALSEAL)** at the total rate of 1.5 kg/m<sup>2</sup> to the vertical surfaces.
- 9) If render is required:  
First apply a tight rough cast of sand cement mortar (3:1) covering approx. 50 % of surface on top of the green **(CRYSTALSEAL)**  
Apply a final plaster finish, according to requirements

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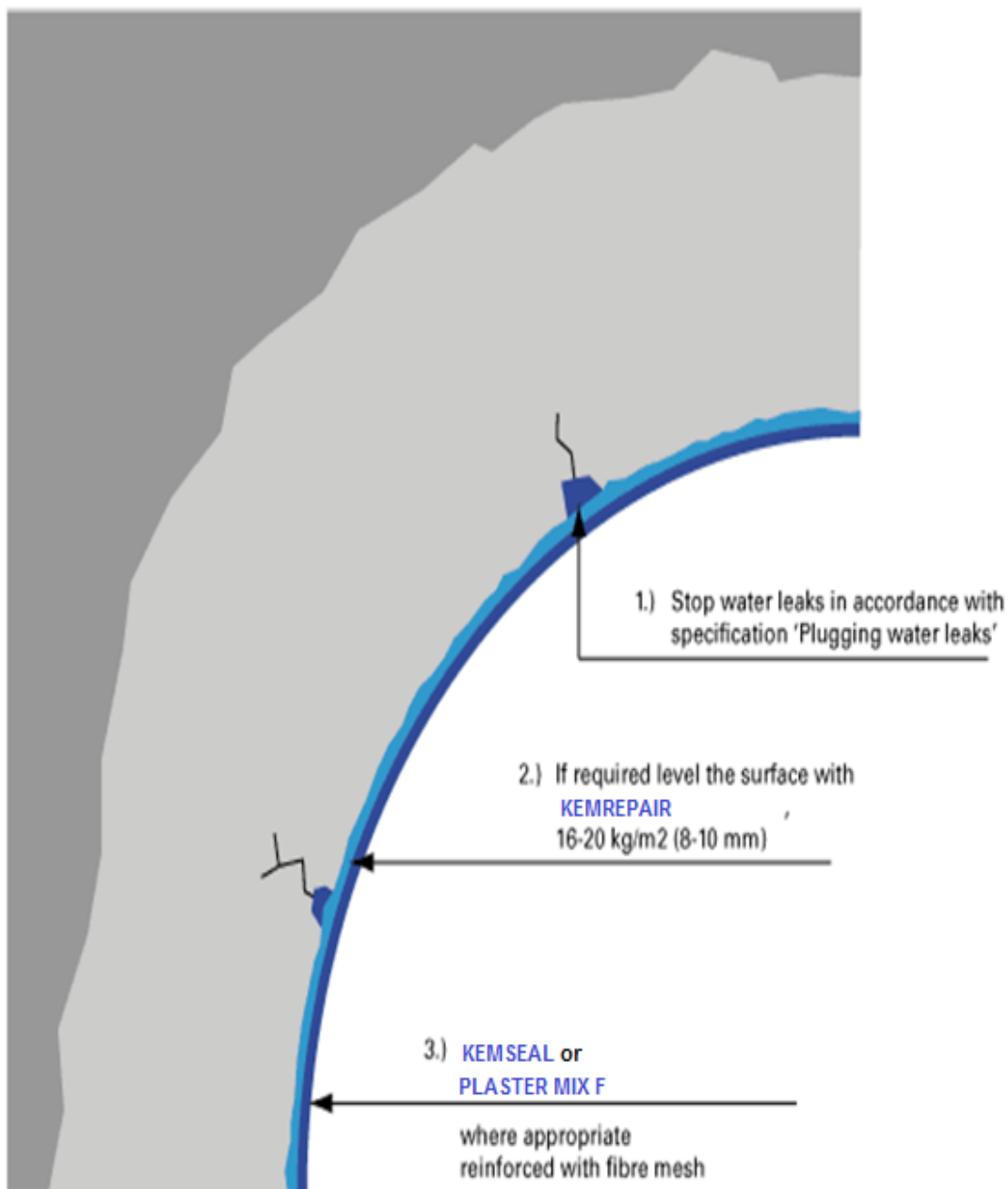
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# Tunnel - refurbishment



## • Application Instructions

- 1) Stop water leaks in accordance with the specification
- 2) Apply **(KEMREPAIR)** at the rate of 16-20 kg/m<sup>2</sup> (8 - 10 mm), as a levelling and waterproofing repair mortar.
- 4) Apply **(KEMSEAL F)** where appropriate reinforced with a fibre mesh, as a crack bridging surface waterproofer.

Or

- 4) Apply **(PLASTER MIX F)** where appropriate reinforced with a fibre mesh, for concrete protection (carbonation and chloride barrier).

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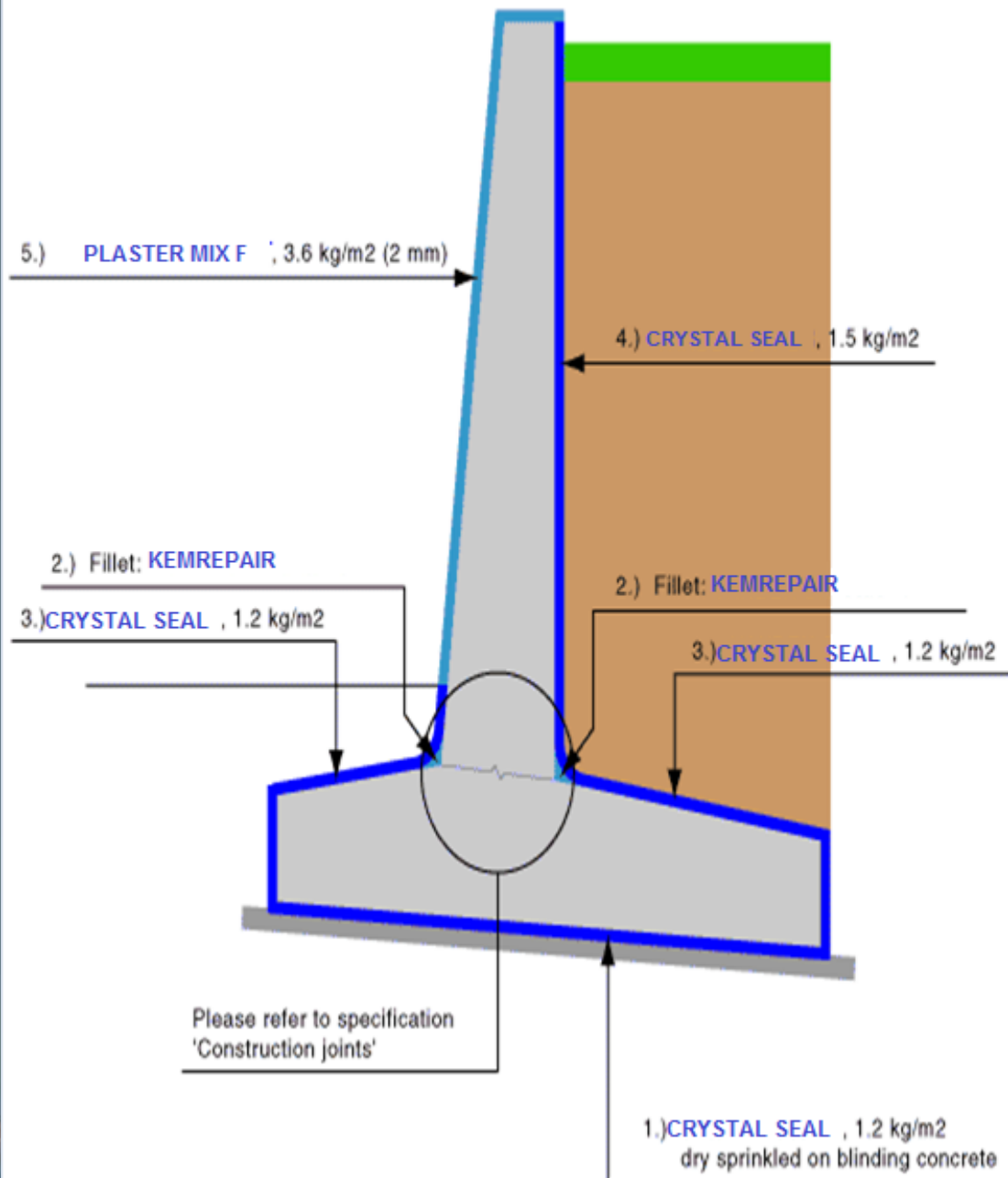
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# Retaining Wall



**Quality Needs Quality**

## • Application Instructions

- 1) Apply one coat of **(CRYSTALSEAL)** at the rate of 1.2 kg/m<sup>2</sup> to the prewatered blinding concrete, just prior to pouring the concrete.
- 2) Apply a coved fillet of **(KEMREPAIR)** at the base slab and wall junction.
- 3) To the horizontal areas apply one coat of **(CRYSTALSEAL)** at the rate of 1.2 kg/m<sup>2</sup>.
- 4) Apply two coats of **(CRYSTALSEAL)** at the total rate of 1.5 kg/m<sup>2</sup> to the vertical surface.
- 5) Apply two coats of **(PLASTER MIX F)** at the total rate of 3.6 kg/m<sup>2</sup> (2 mm), for surface protection .

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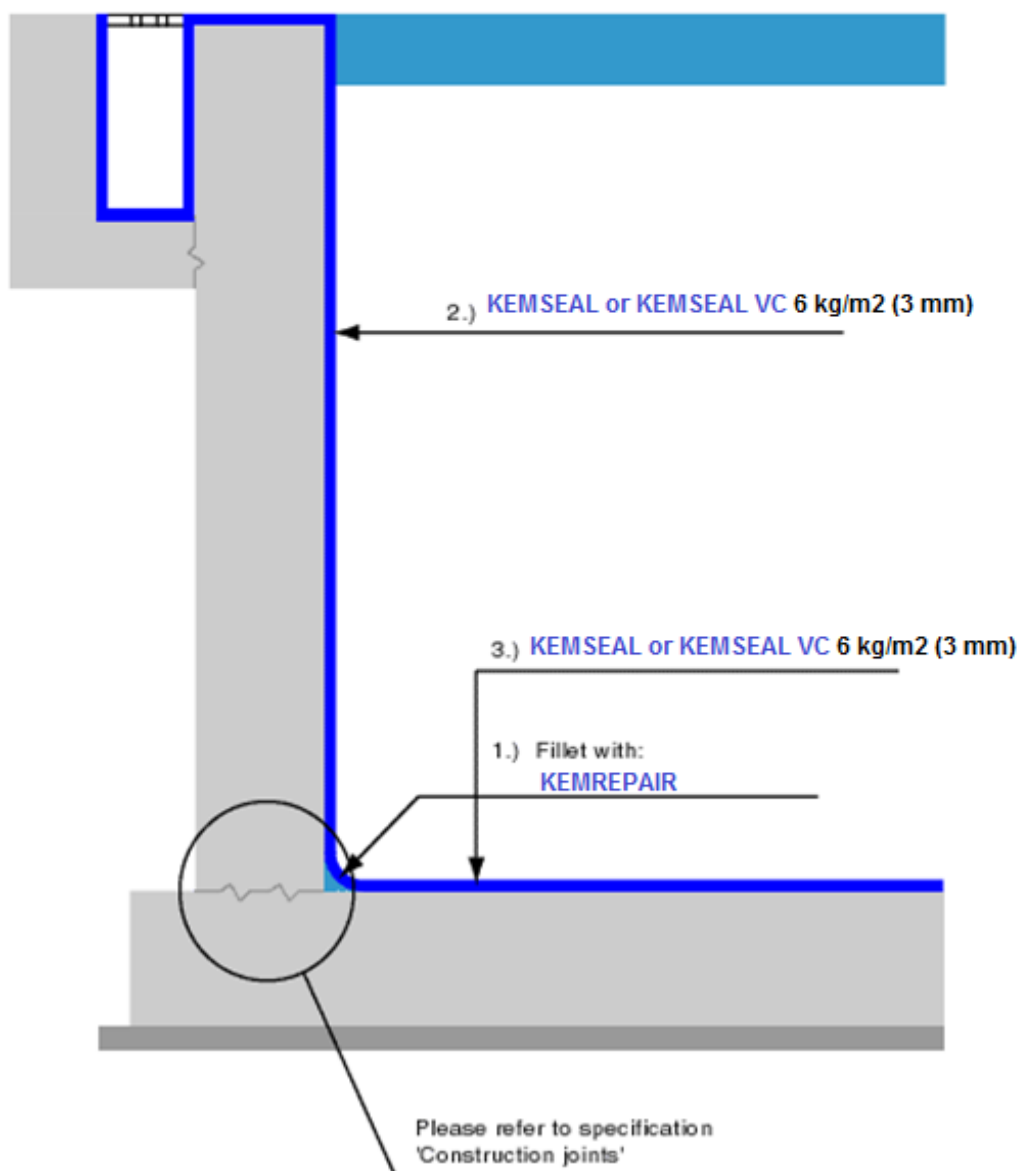
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# Swimming pool - new construction





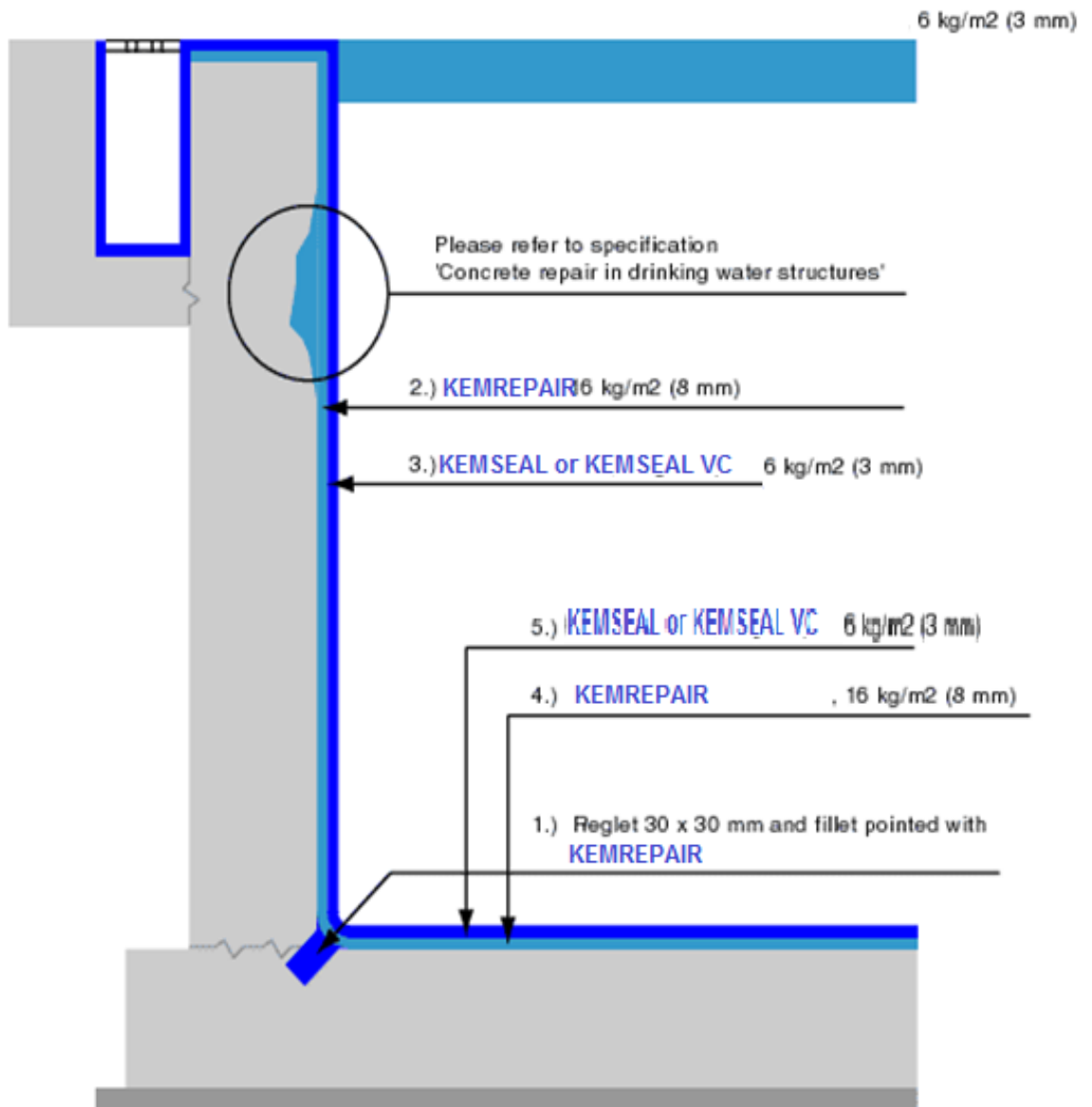
## • Application Instructions

- 1) Apply a coved fillet of **(KEMREPAIR)** at the slab/wall junction.
- 2) Apply two coats of **(KEMSEAL OR KEMSEAL VC)** at the total rate of total of 6 kg/m<sup>2</sup> (3 mm), to the vertical surfaces.
- 3) Apply two coats of **(KEMSEAL OR KEMSEAL VC)** at the total rate of 6 kg/m<sup>2</sup> (3 mm), to the horizontal surfaces.

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# Swimming pool - refurbishment



## • Application Instructions

- 1) Chase out a reglet (approx. 30 x 30 mm) along the construction joints. Point the cleaned reglet and form a coved fillet with **(KEMREPAIR)** at the slab and wall junction.
- 2) Apply one coat of **(KEMREPAIR)** at the rate of 16 kg/m<sup>2</sup> (8 mm), to the vertical surfaces as a levelling mortar and to increase concrete cover to the reinforcement.
- 3) Apply two coats of **(KEMSEAL OR KEMSEAL VC)** , at the total rate of 6 kg/m<sup>2</sup> (3 mm), as a final coat.
- 4) Apply one coat of **(KEMREPAIR)** at the rate of 16 kg/m<sup>2</sup> (8 mm), to the basement slab as a levelling mortar and to increase concrete cover to the reinforcement.
- 5) Apply in two coats of **(KEMSEAL OR KEMSEAL VC)** , at the total rate of 6 kg/m<sup>2</sup> (3 mm), as a final coat .

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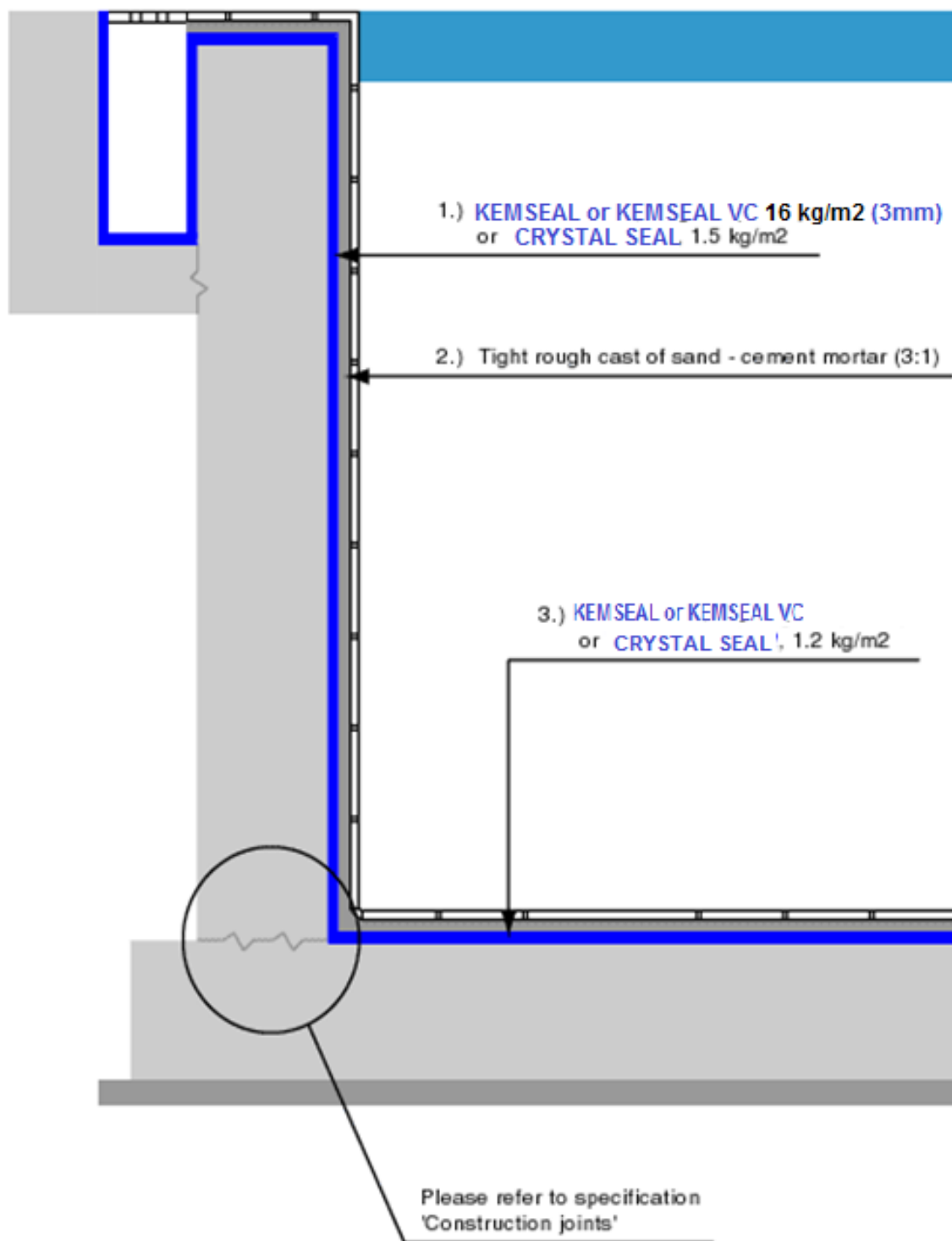
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# Swimming pool - new construction with tiles



## • Application Instructions

- 1) Apply two coats of **(KEMSEAL OR KEMSEAL VC)** at the total rate of 6 kg/m<sup>2</sup> (3 mm) or two coats of **(CRYSTAL SEAL)** at the total rate of 1.5 kg/m<sup>2</sup>, to the vertical surfaces.
- 2) Onto the vertical surface apply a tight rough cast of sand and cement mortar (3:1) covering approx. 50 % of surface, applied 'green on green' to the Vandex treatment.
- 3) To horizontal surfaces, apply two coats of **(KEMSEAL OR KEMSEAL VC)** at the total rate of 6 kg/m<sup>2</sup> (3 mm) or one coat of **(CRYSTAL SEAL)** at the rate of 1.2 kg/m<sup>2</sup>.

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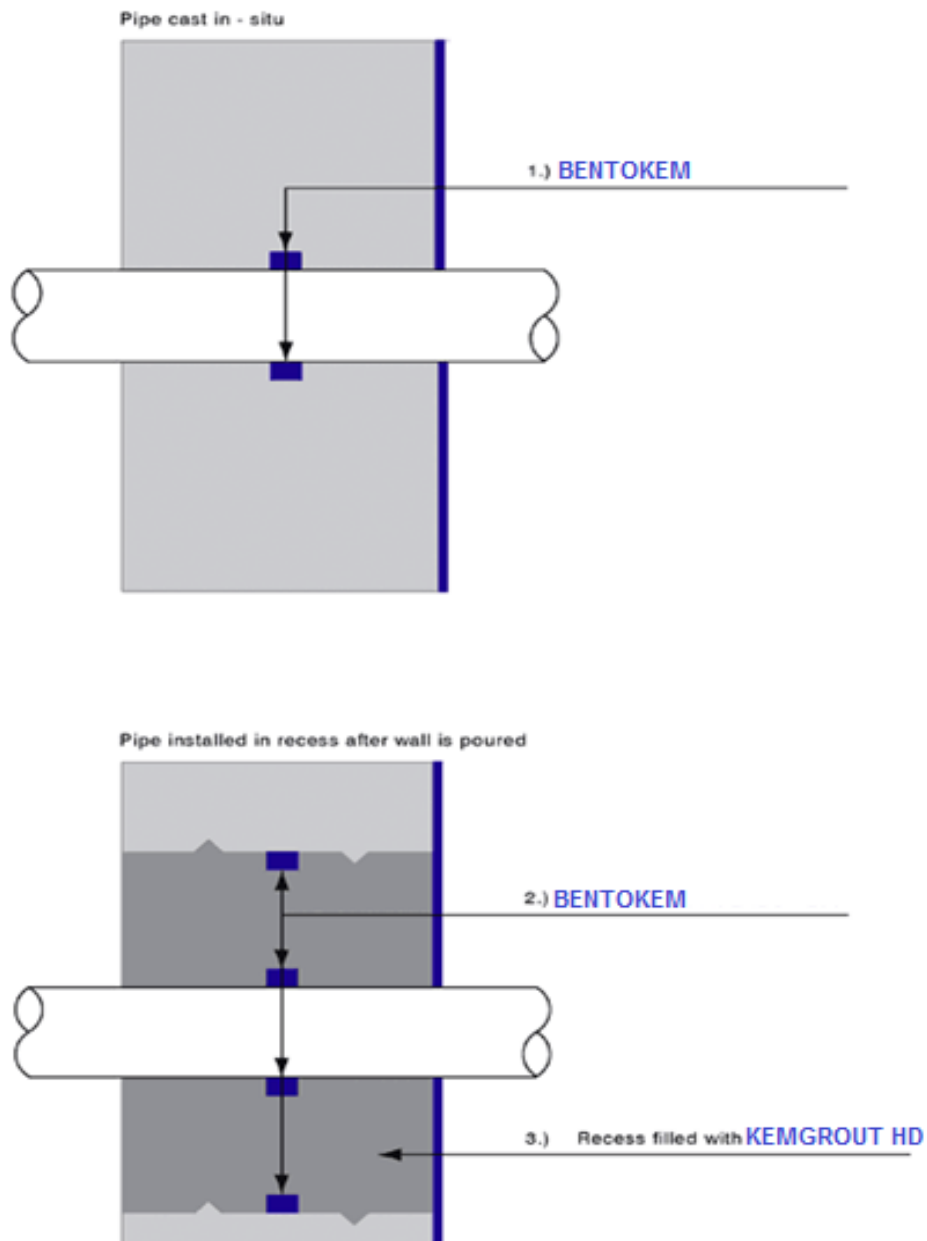
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# Pipe inlets - new construction



## • Application Instructions

- 1) Fix **(BENTOKEM)** with **(PROFIX)** around the pipe such that it is in the middle of the wall, before closing the formwork.  
Ensure that the **(BENTOKEM)** is in firm contact with surface of the pipe.
- 2) Fix **(BENTOKEM)** with **(PROFIX)** around the pipe such that it is in the middle of the wall. Fix the **(BENTOKEM)** with **(PROFIX)** in the middle of the wall on concrete surfaces in the recess.
- 3) Fill the recess with **(KEMGROUT HD)** depending on the size. The surface of the pipe must be clean and free of any foreign substances .

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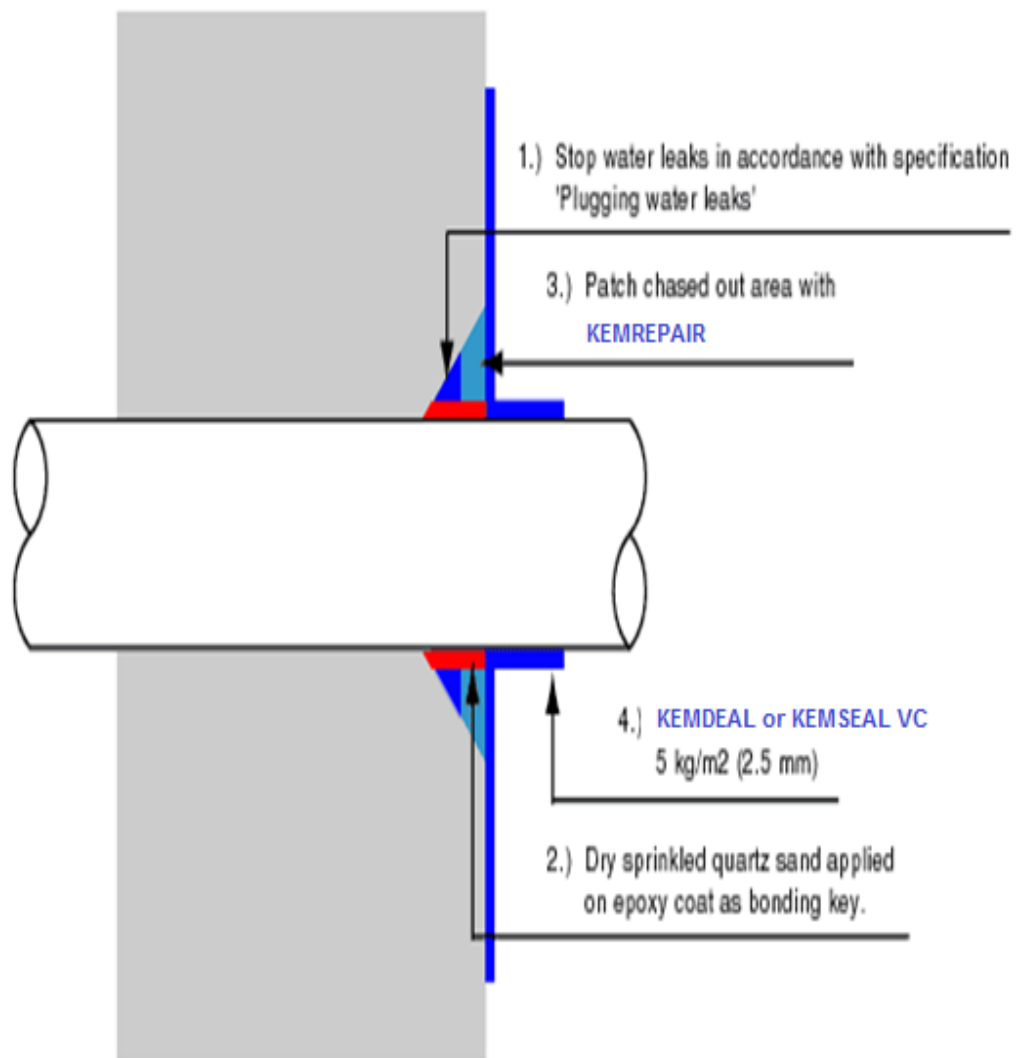
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# Pipe inlets - remedial work



## • Application Instructions

- 1) Fix **(BENTOKEM)** with **(PROFIX)** around the pipe such that it is in the middle of the wall, before closing the formwork.  
Ensure that the **(BENTOKEM)** is in firm contact with surface of the pipe.
- 2) Fix **(BENTOKEM)** with **(PROFIX)** around the pipe such that it is in the middle of the wall. Fix the **(BENTOKEM)** with **(PROFIX)** in the middle of the wall on concrete surfaces in the recess.
- 3) Fill the recess with **(KEMGROUT HD)** depending on the size. The surface of the pipe must be clean and free of any foreign substances .

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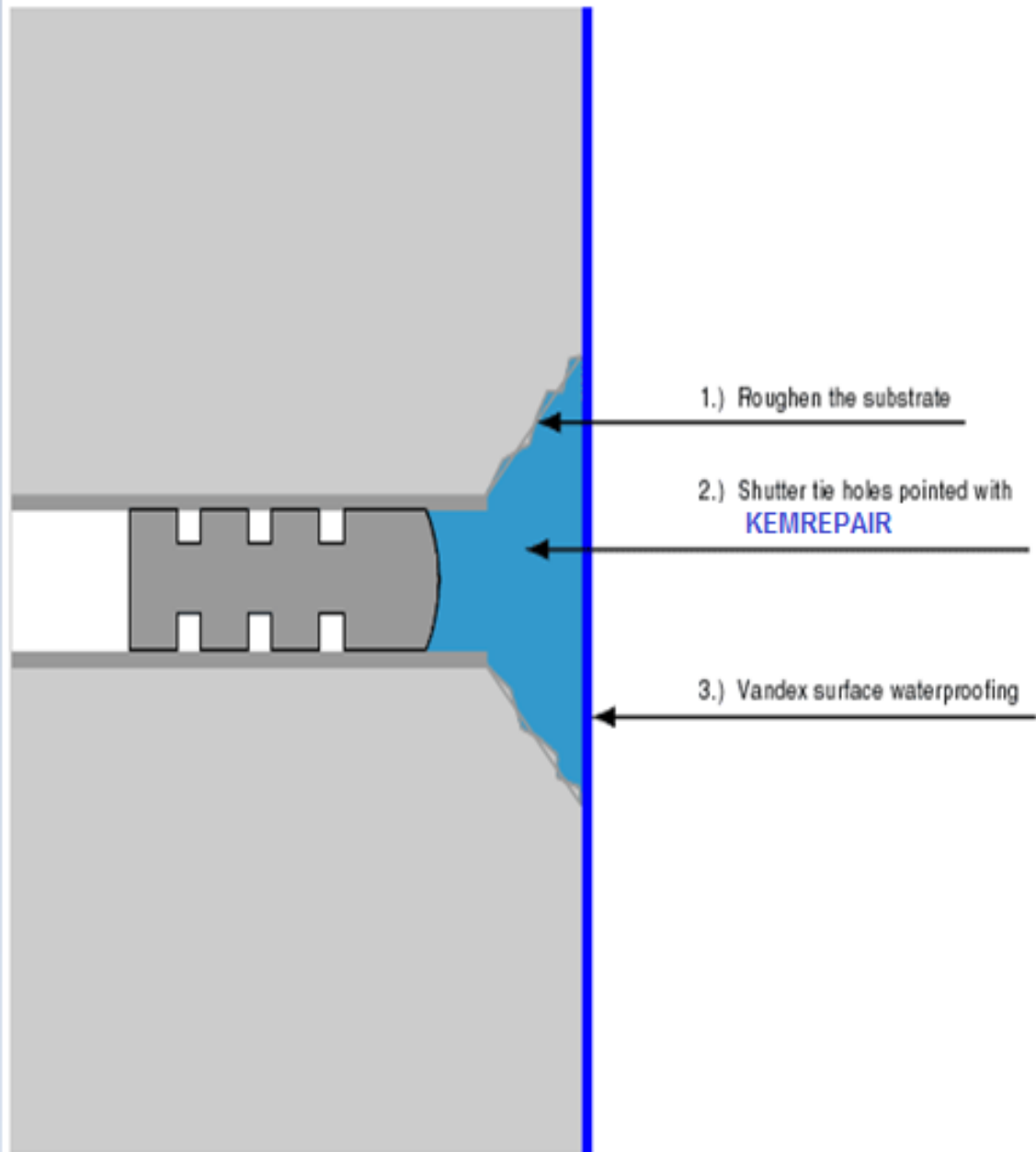
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# Shutter tie holes



## • Application Instructions

- 1) The smooth concrete surfaces left after the shutter tie cones have been removed must be roughened by appropriate means.
- 2) Point the conical holes with **(KEMREPAIR)** flush with the surface.
- 3) When the mortar has set, apply Vandex surface waterproofing treatment in accordance with the relevant specification.

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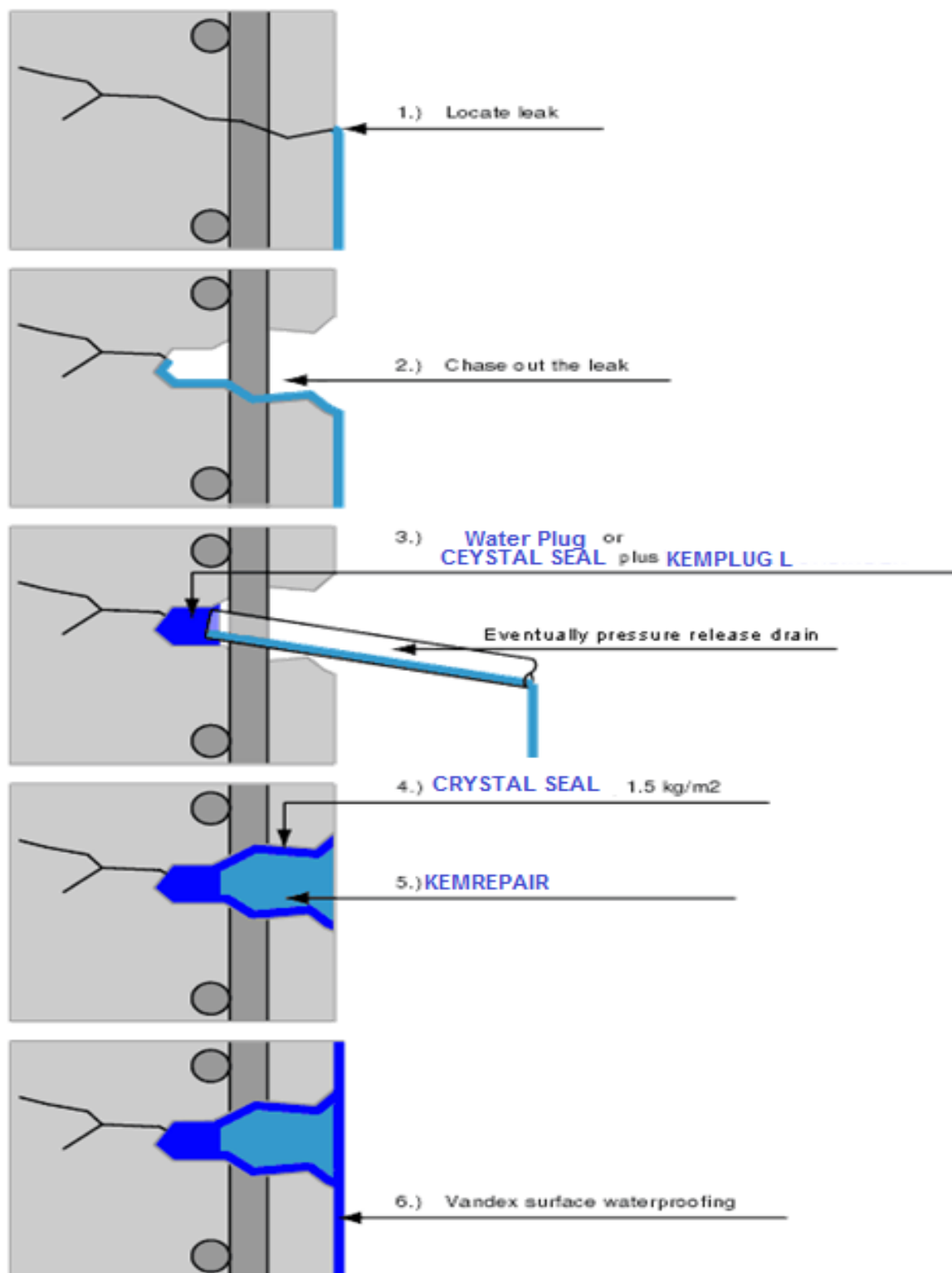
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# Plugging water leaks



## • Application Instructions

- 1) Locate leak in the concrete.
- 2) Cut out the leak to sound concrete - min. depth of 10 cm and of such a diameter that for instance a hammer handle will easily enter (note the conical shape of the cavity). Carefully clean and wash out the cavity.
- 3) Form a plug made of **(WATERPLUG)** or **(CRYSTALSEAL)** mixed with **(KEMPLUG L)** according to relevant data sheets. Press the plug into the hole and maintain pressure until setting has taken place.
- 4) Slurry coat the remaining part of the cavity with VANDEX SUPER **(CRYSTALSEAL)** 1.5kg/m<sup>2</sup>.
- 5) Before the **(CRYSTALSEAL)** coat is completely set fill the rest of the cavity with **(KEMREPAIR)**
- 6) When the mortar has set apply Vandex surface waterproofing treatment according to relevant Vandex Specification.

Remark:

For severe leaks use plugging method with drain according to relevant data sheet) **L**).

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