

DURABLE CONCRETE STARTS WITH



SIMPLE CONCRETE REPAIR SOLUTIONS WITH PENETRON

REMEDICATION

Penetron founded in 1970 and
present in over 100 countries



Presenter:

Hacene Baleh

National Technical Manager
B.E, M. Eng, C.Mgmt, MIEAust

hacene@penetron.com.au

0427 286 998



PRODUCT RANGE

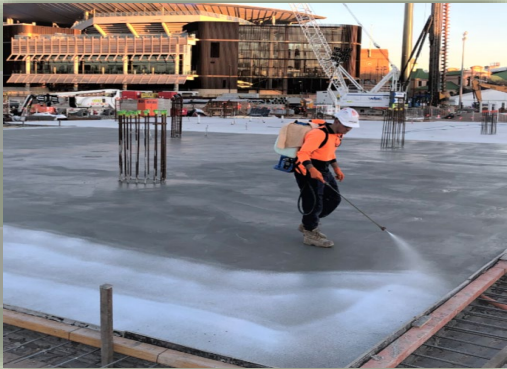
Proven Performance

| ADMIXTURES | WATERSTOPS | REPAIR PRODUCTS | SEALANTS |
|-------------------|------------------------|----------------------|------------------|
| PENETRON ADMIX SB | PENEBAR SW-55 | PENETRON COATING | PENESEAL PRO RTU |
| PENETRON BIOMIC | PENEBAR SW-45 | PENEPLUG | PENESEAL FH PS |
| | PENEBAR PRIMER | PENECRETE MORTAR | PENEGUARD |
| | STD PVC HYDROSTOPS | WATERPLUG | SUPERCURE HR |
| | SPECIAL PVC HYDROSTOPS | BLOCKSEAL MEMBRANE | SUPERCURE HR-30 |
| | | INDUSTRIAL SELF-LEV | SUPERFILM AA |
| | | INDUSTRIAL SL PRIMER | |
| | | PENETRON V/O PATCH | |
| | | PENETRON CR-90 | |
| | | UPLUG | |
| | | PENETRON ARC | |
| | | | |

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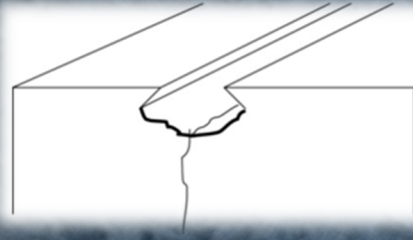


TYPICAL OF DRY CRACK REPAIR

1



2



1. Crack is $> 0.5\text{mm}$.
($> 0.2\text{mm}$ for infrastructure projects)

2. Cut a $25 \times 25\text{mm}$ key in a dove-tail shape along the crack.

3. Pre-wetting the rebate.

4. Apply Penetron Coating in the rebate.

3



4



EXAMPLE 1

TYPICAL OF DRY CRACK REPAIR



5. Fill the rebate with
PENECRETE MORTAR.

6. Finish it with
PENETRON coating
over either the
repaired area or the
entire wall depending
on the purpose.

NOTE 1: If the crack is $< 0.5\text{mm}$, you only
need to brush 2 coats of PENETRON coating.
For infrastructure projects, that's $< 0.2\text{mm}$.

EXAMPLE 1

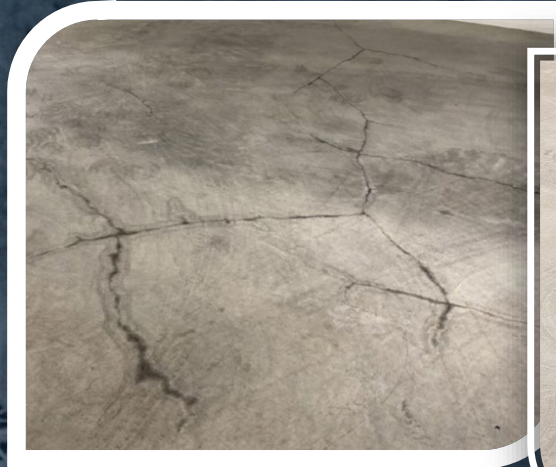
TYPICAL OF WET CRACK REPAIR

EXAMPLE 2

STEPS

1. Repair the dry & damp cracks first, then move to the wet ones.
2. Cut 20W x 35D key minimum in a dove-tail shape along the cracks.
3. Apply 15mm **PENEPLUG** to stop the water leak within 30 seconds.
4. Brush **PENETRON** slurry over PENEPLUG and the inside of the key.
5. Fill the rest of the key with **PENECRETE MORTAR**.
6. Finish the repair with one coat of **PENETRON** slurry.

NOTE: For dry cracks, no need to use **PENEPLUG**.



DAMPNESS AND DURABILITY REPAIR

STEPS

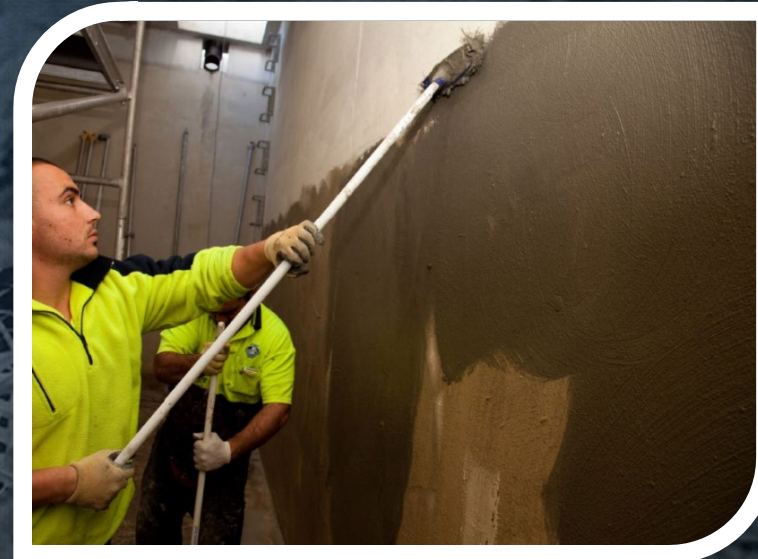
1. If there are any cracks, remediate them first following the steps in the previous slide.

2. Clean the wall or slab with high pressure water.

3. Mix **PENETRON** powder with water, just enough to apply within 20min.

4. Brush 2 coats of **PENETRON** slurry over the entire wall or slab on damp substrate.

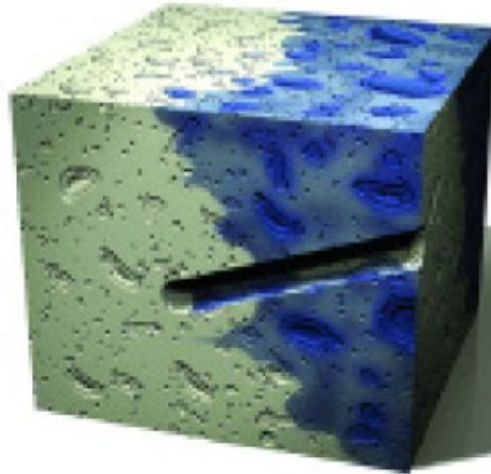
5. Apply water for 2 weeks to accelerate the growth of the crystals within the concrete.



ACCELERATE THE CRYSTALLINE ACTIVITY IN DEPTH

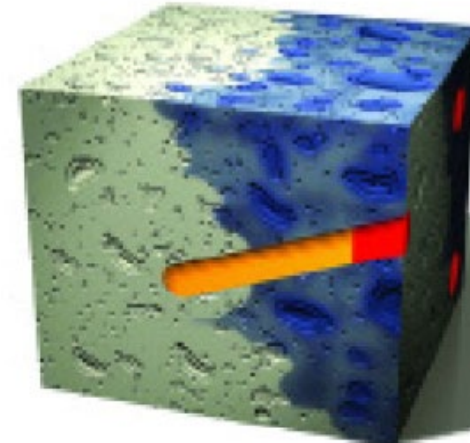
1

Drill 2.0-2.5cm holes at 40-80° angle up to 3/4 way through the wall.



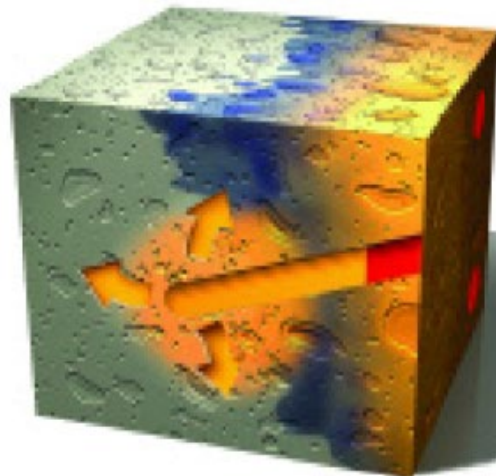
2

Fill the drilled cavity with Penetron slurry and seal with Penecrete mortar. Repeat as necessary using an on-center pattern.



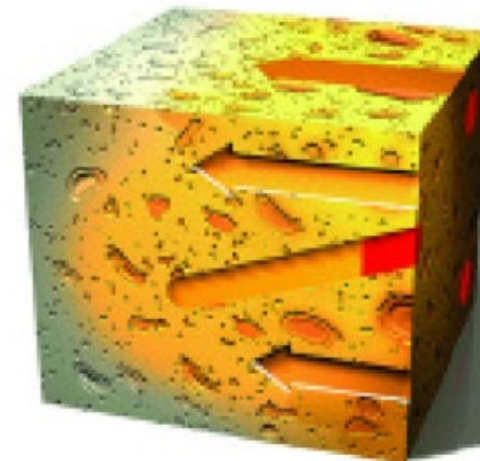
3

Coat the outer surface with Penetron. Crystals will begin to penetrate from both inside and outside of the wall.

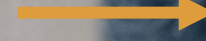
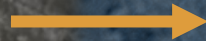


4

Penetron will continue to spread, providing strength and protection to interior and exterior of the concrete.

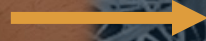
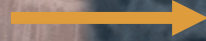


CONCRETE REMEDIATION – BLOCKWORK



FROM NEGATIVE SIDE

1. Repair all leaks using the Penetron wet crack repair method.
2. Apply 2 coats of **BLOCKSEAL PRIMER MC**.
3. Apply 2 coats of **BLOCKSEAL** cementitious membrane.



FROM POSITIVE SIDE

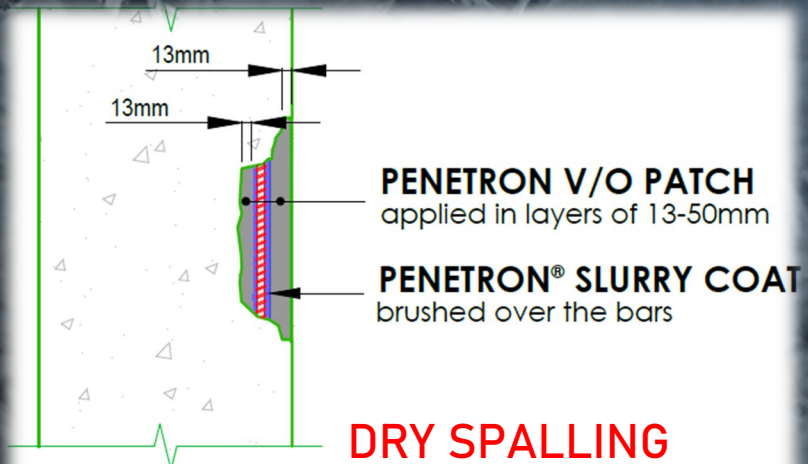
BLOCKSEAL PRIMER MC is optional unless the wall is subject to high hydrostatic pressure.

CONCRETE REMEDIATION – SPALLING

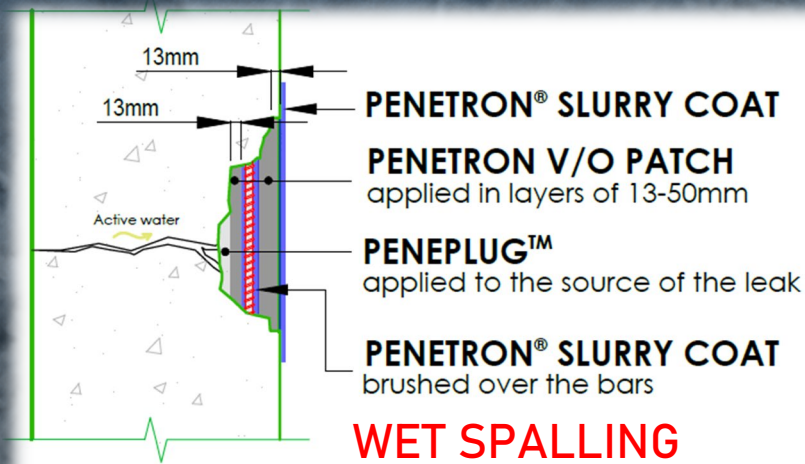


DRY SPALLING REPAIR

1. Jackhammer 13mm behind the bars and 50mm in sound concrete along the bars.
2. Apply **PENETRON** coating in the entire area including reo.
3. Patch accordingly using **PENETRON V/O PATCH**.



NOTE: JACK HAMMER THE AFFECTED AREA TO GET TO SOUND CONCRETE



NOTE: JACK HAMMER THE AFFECTED AREA TO GET TO SOUND CONCRETE

WET SPALLING REPAIR

Repair as above after stopping the water with **PENEPLUG** then patch with **PENECRETE MORTAR** or **V/O PATCH** depending on the severity of the leak

CONCRETE REMEDIATION – HONEYCOMBING



SEVERE HONEYCOMBING

1. Jackhammer and break off the affected areas to get to sound concrete.
2. Patch with self priming and high build **PENETRON V/O PATCH** (13 to 50mm).
3. Alternatively, patch with **INDUSTRIAL SELF LEVELLING** for horizontal repairs.



LIGHT HONEYCOMBING

Patch and bag with **PENETRON CR-90** (0 to 13m).

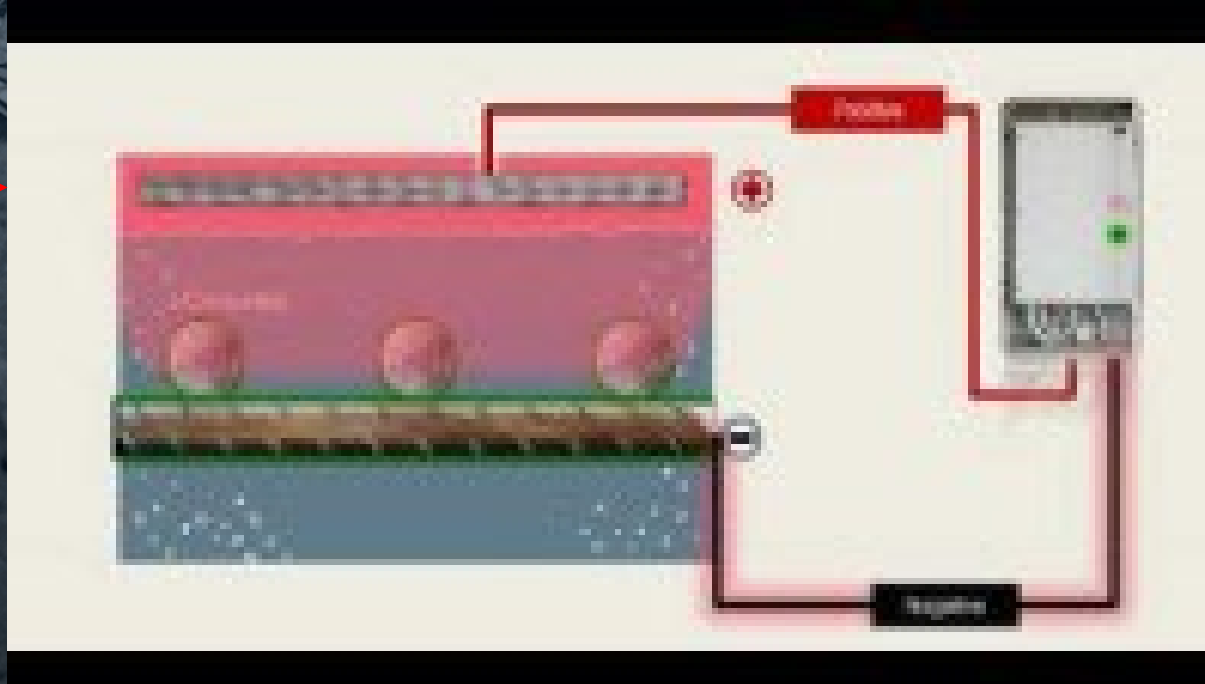
CONCRETE REMEDIATION – CARBONATED



LIGHTLY CARBONATED

1. Open the pores in depth with water blasting.
2. Apply **PENETRON** coating in the entire area.
3. Keep the area wet/damp for a minimum of 4 weeks.

Alkaline electrolyte,
ex. Sodium
Carbonate
solution



SEVERELY CARBONATED

The IRON OXIDE film Fe_2O_3 (Passivation) is broken down.

1. Realkalisation using the Cathodic Protection method, or
2. Desalination: Chloride extraction

CONCRETE REMEDIATION – PENEBAR APPLICATION

SECANT PILES

1. Apply one coat of **PENETRON** to the secant piles at the slab level.
2. Patch the corner with **PENECRETE MORTAR** (50 – 100mm).
3. Install **PENEBAR SW** waterstops continuously.

BOTTOM AND TOP CJ

1. Jackhammer or grind off excess concrete, or
2. Build up holes and honeycombing with **PENECRETE MORTAR**.



CONCRETE REMEDIATION – FLOOR HARDENING



On fresh concrete

1. Apply one coat of **PENESEAL FH PS** right after the concrete finishing.
2. Reduce abrasion and cover loss.
3. Seal and protect the top layer (30mm).



On hardened concrete

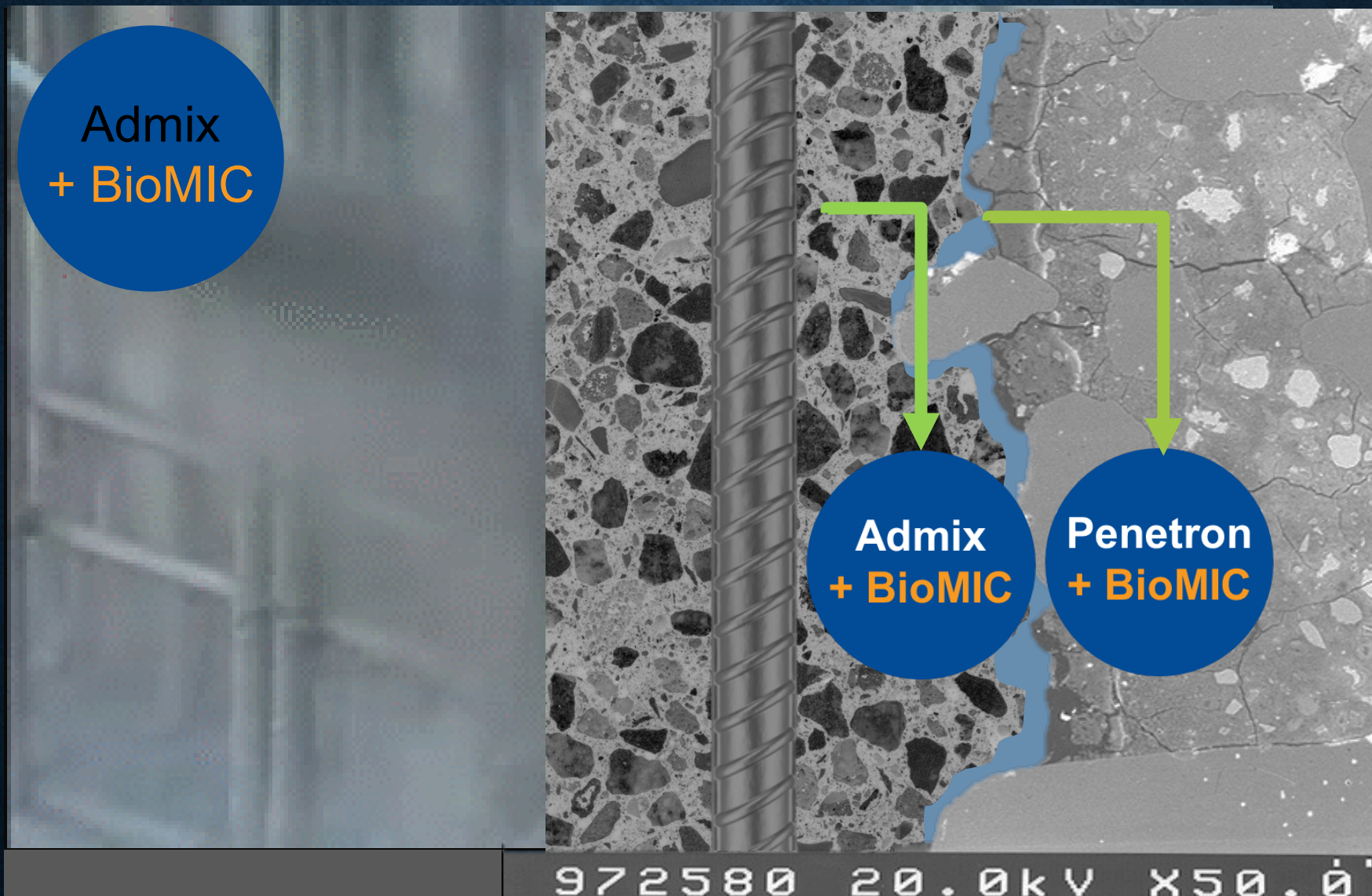
1. Open concrete pores.
2. Apply **PENESEAL FH PS**.
3. Burnish floor for more appealing looks if needed.

CONCRETE REMEDIATION – PENETRATING GEL



ROOFTOPS, BALCONIES, SWIMMING POOLS, WALKWAYS

Penetron Admix + BioMIC Shotcrete Application



GET PENETRON INVOLVED

At the Design Stage

Help you draft new details

Note:

If no admix in slab, coat the construction joint with Penetron slurry additionally.

We will work with you
right from the start

Specify the Penetron
products for your projects

Help you mark-up drawings

WALLS

BLOCKSEAL
ALL.

DETAIL C - PVC

1X LAYER OF PENEBAR SW, PVC
& PENETRON ADMIX IN SLAB

1. Cast Penetron Admix SB. in Mix.
2. Cast Surface Sealer (Penesal Pro RTU)
3. Cast waterstop (2x layers of
Penebar SW-55)

MASTER PENETRON DOCUMENTS

We do the thinking for you

PENETRON
TOTAL CONCRETE PROTECTION

PENETRON AUSTRALIA
ABN 84 123 958 252
Head Office: PO BOX 354
Moorebank NSW 1875
T: 1800PENETRON
E: office@penetron.com.au
www.penetron.com.au

Master Penetron Specifications



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Master Penetron Shotcrete Recommendations



The proven power of the
Penetron Admix® SB on site.

PENETRON
TOTAL CONCRETE PROTECTION

PENETRON ADMIX®
WATERTIGHT CONCRETE SYSTEM




- ✓ Permanent Waterproofing
- ✓ Anticorrosion Protection
- ✓ Chemical Resistance
- ✓ Self Healing Effect

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TYPICAL PENETRON SPECIFICATIONS FOR PERMAFORM




| | |
|--|---|
| 1. Scope | 2 |
| 2. Details | 2 |
| 3. Quality Assurance | 2 |
| 4. Product and Application Requirements | 2 |
| 5. Disclaimer | 2 |
| 6. Products Proposed | 3 |
| 6.1 PENETRON ADMIX® SB * | 3 |
| 6.2 PENERBAR SW-55™ Water-stop | 3 |
| 6.3 PENETRON | 3 |
| 6.4 PENECRETE MORTAR | 3 |
| 6.5 SUPERCURE HR | 3 |
| 6.6 BLOCKSEAL | 3 |
| 7. Penetron waterproofing system on PERMAFORM walls | 3 |
| 7.1 Lift Pits and retaining walls with PERMAFORM - Against the ground | 4 |
| 7.2 PERMAFORM walls in basements with the shoring system - No back access provided | 4 |
| 7.3 PERMAFORM walls in basements with the shoring system - Back access provided | 6 |
| 7.4 PERMAFORM walls supporting post-tensioned slab | 6 |

Page 1 of 11

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Moorebank NSW 1875
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E: office@penetron.com.au
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TYPICAL PENETRON SPECIFICATIONS FOR DINCEL



DINCEL


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Page 1 of 11

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TYPICAL PENETRON SPECIFICATIONS FOR afs rediwall



afs rediwall

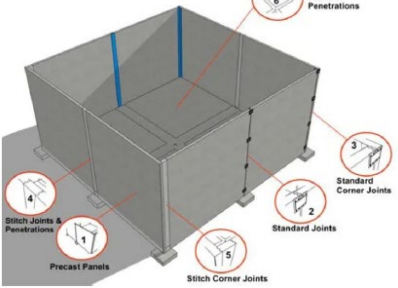
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| 6.3 PENETRON | 3 |

Page 1 of 11

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Moorebank NSW 1875
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E: office@penetron.com.au
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TYPICAL PENETRON SPECIFICATIONS FOR PRECAST STRUCTURES



Slab, Slab Joints & Penetrations

Standard Corner Joints

Standard Joints

Stitch Joints & Penetrations

Precast Panels

Stitch Corner Joints

| | |
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| 6.1 PENETRON ADMIX® SB * | 3 |

Page 1 of 11

THANK YOU

Any questions?



Let Penetron assist you
on your next project

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Presented to:

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10 November 2022

