

Denso HB80 High Strength Mortar

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Denso HB80 is a high strength; high build shrinkage compensated structural repair mortar.

Denso HB80 is designed to be used for vertical or horizontal applications.

The specially selected cements and polymers contained in Denso HB80 provide a mortar with strong adhesion to concrete and masonry on vertical and horizontal substrates with negligible shrinkage. Denso HB80 requires the addition of water only.

AS/NZS 4020:2018 compliant when exposed to area to volume ratio of 15,000 mm²/L.

Uses

- High build repairs for vertical, overhead and horizontal repairs.
- Repairs requiring high compressive strength.
- Repairing damaged concrete panels where structural strength is required.
- High build repair applications 5 mm to 80 mm for vertical surfaces.
- May be applied to verticals up to 160 mm in small pockets or with the aid of foamwork.
- Repairs to spalled or deteriorated concrete caused by corrosion of steel reinforcements.
- Repairs requiring low permeability and high resistance to chlorides and carbon dioxide.
- Can be applied up to 180 mm in horizontal surfaces.

Benefits

- High ultimate compressive strength.
- High build repairs achievable in a single application.
- Low permeability providing protection from chloride attack carbonation.
- High Strength and high abrasion resistance.
- Shrinkage compensated and dimensionally stable.
- Excellent workability.
- Can be applied by dry or wet process, achieving high build with exceptional compaction and enhanced performance.
- Excellent bond strength to concrete substrates.

Yield data for Denso HB80 High Strength Mortar

Consistency	Mortar
Water per 20 kg bag (L)	2.6
Yield per bag (L)	10.5
Fresh water density (kg/m ³)	2200
Bags required per (m ³)	209

Test Data

Compressive Strength

(AS 1478.2-2005 @20°C and 50% RH)

1 Day	22 MPa
7 Days	68 MPa
28 Days	80 MPa

Flexural Strength

(AS 1012-11-2000)

1 Day	5.5 MPa
7 Days	7.5 MPa
28 Days	9.5 MPa

Set Time @ 20°C

(AS 1012.18)

Mortar	Initial	Final
	3.0 hours	5.0 hours

Drying Shrinkage (AS 1012.13)

7 Days	< 100 microstrain
28 Days	< 350 microstrain
56 Days	< 450 microstrain

Abrasion Resistance (ASTM CS01 - 1984, Tested Abrasion)

28 days	120 Wear Index
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Application

Surface Preparation: The substrate must be clean and sound, free of all foreign material, including, laitance or other surface contaminants that will inhibit the bond. All loose material must be removed. Any cracked or weakened surface should be removed and repaired to provide a solid foundation.

It is recommended that for large areas a minimum depth of 5 mm be prepared to avoid excessive feather edging or skim coating. Break out the repair area to a minimum of 5 mm up to the saw cut edge. Scabbing or high pressure blasting should be used to remove laitance and provide a mechanical key.

Steel surfaces, such as reinforcement bars, should be grit blasted or scabbed to remove any corrosion deposits.

Priming: Concrete/masonry: priming is necessary. The substrate should be pre-soaked with water and excess water removed prior to application of Denso HB80 Primer. Denso HB80 Primer must be tacky, NOT DRY, prior to the application of HB80.

Refer to Denso HB80 Primer Product Data Sheet for detailed application instructions.

Mixing: Mix 2.6 - 2.9 L of water per 20 kg bag. Always add the powder to pre-measured water. Mix using a mechanical forced action mixer with a high shear spiral mixing paddle. Mix until a homogeneous mix is obtained which is lump free. Mixing normally takes 3 - 5 minutes.

DO NOT USE FREE FALL MIXERS. DO NOT MIX BY HAND.

Application: Apply the mixed material to the prepared surface using a trowel or gloved hand. Thoroughly compact the mortar into the prepared substrate and around exposed steel reinforcement and re-bars. A smooth surface can be obtained using a steel trowel.

DO NOT OVERWORK THE SURFACE.

Spray Application: Denso High HB80 Strength Repair Mortar can be applied using wet application technique. The mortar is pre-mixed with the required water quantity and then pumped through a spray gun with a suitable nozzle.

Application Instruction	Horizontal	Vertical
Maximum	180 mm	100 mm
Minimum	10 mm	5 mm
Young's Modulus	26 GPa (approx)	
Coefficient of Thermal Expansion	7-10 x 10 ⁶ /°C	

Recommended Temperatures

Application: 5°C to 35°C

Do not apply at temperatures below 5°C. The use of warm water is recommended if application must occur at temperatures below 5°C.

Do not apply at temperatures above 35°C as initial set will commence early and the product will be difficult to apply. The use of cold/chilled water is recommended if mixing at high temperature.

Limitations/Precautions

Do not exceed the recommended mix water quantity. Additional water will reduce ultimate strength and extend the drying time of the product.

Only mix the quantity of material that can be used within the set time of material. Discard partially set or hardened material. Do not mix part bags.

If the substrate into which the Denso HB80 High Strength Repair Mortar is applied to moves or cracks, reflective cracking may occur in the mortar.

Ensure existing concrete surfaces/substrates are at least 21 days old prior to application of Denso HB80 High Strength Repair Mortar.

Do not apply Denso HB80 High Strength Repair Mortar in areas less than 5 mm thick. Occasional thickness less than 5 mm is acceptable only in very localised areas.

Ensure Denso HB80 High Strength Repair Mortar does not come into contact with water/rain for a minimum of 24 h.

Packaging

20 kg bags.

Shelf Life/Storage

Shelf life of ≥ 9 months when stored in unopened bags. Large temperature differentials or high humidity can shorten shelf life. Store in a cool, dry area and away from heat and direct sunlight.



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