
MICRO CONCRETE HW401

Product Description

Hard Worker Micro Concrete – HW401 is a flowable, ready-to-mix repair mortar designed for restoration of damaged concrete sections. It compacts under its own weight, requires no vibration, and provides high strength with minimal shrinkage. When mixed with water and coarse aggregates, it forms a dense and durable concrete that bonds strongly with the substrate.

Specification

- Self-compacting; no vibration required
- Excellent bonding with existing concrete
- High final compressive and flexural strength
- Controlled shrinkage
- Free-flowing with smooth consistency
- Designed for jacketing, encasement and structural repairs
- Available in 40 MPa, 60 MPa and 80 MPa grades

Application Areas

Ideal for structural repairs where concrete has deteriorated due to corrosion, cracks, or age.

Typical applications include:

- Beam and column jacketing
- Concrete encasement
- Restoring cover over reinforcements
- Strengthening foundations or pile caps

Recommended pour depth: not more than 100 mm without aggregate addition.

Surface Preparation

Remove loose particles, dust, oils, grease, rust, and weak concrete. Use mechanical methods such as grit blasting, high-pressure water jet, or breakers.

Thoroughly saturate absorbent surfaces before application but ensure no standing water is left.

Steel reinforcements must be clean and protected with anti-corrosion coating.

Use bonding agent (e.g., HW Bonding Agent SBR or Epoxy) on dense or smooth substrates to ensure adhesion.

Mixing Instructions

Collect 3 – 3.5 L of water for a 25 Kg bag.

Initially add 80–90% of this collected water into a suitable drum.

Gradually add one 25 Kg bag of HW401 while mixing.

Add the remaining water and 6–12 mm graded clean aggregates (if required) to adjust flow.

Mix for at least 3 minutes using a blender until a smooth, uniform consistency is achieved.

Use immediately after mixing.

Technical Specification

Property	Typical Result
Colour	Grey
Dry Density	1200–1300 Kg/m ³
Water Addition	12-14%
Flow Concrete slump cone Method	(600mm+)
Shrinkage IS1727-1967 (Reaffirmed-2004)	0.025–0.040%
Initial Setting Time IS4031 Part 5	145 minutes
Final Setting Time IS4031 Part 5	450 minutes
Coefficient of Thermal Expansion ASTM C 531 - 2018	10x10 ⁻⁶
Flexural Strength @ 28 Days (ASTM C 580 - 2018)	
M40	10 – 11 MPa
M60	12 – 13 MPa
M80	15 – 16 MPa
Compressive Strength ASTM C 109-2020 @ 28 days	
M40	45–50 MPa
M60	65–70 MPa
M80	85–90 MPa
Rebar Pull-out Bond Strength (20 mm dia) IS2770 (Part 1 – 1967) (Reaffirmed 2004)	
M40	120 – 130kN
M60	130 – 140kN
M80	150 – 160kN
Yield (Without aggregate)	13 litres per 25 Kg bag
Yield (With 30% aggregate)	15 litres per 25 Kg bag

All values tested under standard lab conditions.

Packaging & Shelf Life

Available in 25 Kg bags.
Shelf life: 6 months from date of manufacture in sealed, undamaged packaging.
Store in dry conditions between +5°C and +50°C. Avoid moisture, direct sun, and frost.

Precautions

Avoid skin and eye contact. Wear gloves, goggles, and use in ventilated areas. Clean tools with water before the material sets. Once hardened, removal is only possible mechanically.

Important Note

Do not pour in layers thicker than 100 mm without aggregate addition. Do not add extra water after mixing. Avoid use in unprepared or weak substrates.

Technical Support

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