



HYDROBLOC MC

High Strength Non-Shrink Micro-Concrete & Precision Grout

Product Description:

HYDROBLOC MC is a ready-to-use, high performance, non-shrink, cementitious micro-concrete and precision grout designed for structural repair, heavy-duty grouting, machine foundations, and high-thickness void filling applications.

The product consists of specially graded silica aggregates, Portland cement, microsilica, shrinkage-compensating binders, and high-range water-reducing additives. It requires only the addition of clean water to produce a high-strength, free-flowing, dimensionally stable grout or pourable micro-concrete, suitable for placement in confined or heavily reinforced sections..

Key Features & Benefits:

- Non-shrink performance with dual expansion compensation system
- Free-flowing consistency with excellent pumpability
- High early and ultimate compressive strength
- Suitable for thick section pours (20–300 mm in a single application)
- Excellent adhesion to concrete and steel substrates
- Low permeability and high abrasion resistance
- Excellent dimensional stability with low bleeding characteristics
- Chloride free and sulfate resistant
- Excellent durability in harsh environments
- Can be poured or pumped — suitable for internal and external applications

Areas Of Application:

- Machine foundation and base plate grouting
- Crane rail bedding and bridge bearing grouting
- Turbine and generator foundations
- Structural column and beam repairs
- Jacketing, section enlargement, and thick section concrete repairs
- Void filling and cavity grouting
- Precast panel joint filling
- Industrial flooring repairs
- Anchor bolt grouting
- High-thickness bedding and padding applications



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Surface Preparation:

All substrates must be structurally sound, clean, and uncontaminated — free from dust, grease, oil, laitance, curing compounds, and loose materials.

- Mechanically prepare concrete surfaces to obtain a roughened surface profile equivalent to CSP 3–5
- Remove all loose or deteriorated concrete prior to application
- Steel reinforcement must be cleaned by grit blasting or mechanical preparation, free from rust, scale, and contaminants
- Where corrosion protection is required, apply an approved anti-corrosion primer before placement
- Pre-soak all concrete substrates with clean water for a minimum of 4 hours prior to application
- Remove all standing water before placement — substrate must be in Saturated Surface Dry (SSD) condition

Mixing Instructions:

Equipment

- Forced action mixer, slow-speed drill with grout paddle, or colloidal grout mixer for large pours
- Do not mix manually

Procedure

- Add the measured clean water (3.5–3.9 L per 25 kg bag) into the mixing vessel
- Slowly add HYDROBLOC® MC while mixing continuously
- Mix for 3–5 minutes until homogeneous and lump-free
- Do not add excess water beyond the recommended dosage
- Do not retemper partially hardened material

Pot life: 35–45 minutes at 25°C. Yield: approximately 13.0 litres per 25 kg bag.

Application Guidelines:

As Precision Grout / Padding (20–100 mm)

- Ensure formwork is rigid and watertight
- Maintain a continuous grout head during pouring
- Pour from one side only to prevent air entrapment
- Use straps or rods where necessary to release trapped air
- Maintain uninterrupted placement until complete
- For large base plates, maintain sufficient hydrostatic head pressure



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As Micro-Concrete (40–300 mm)

- Use shuttering for vertical or deep repairs
- Place continuously to avoid cold joints
- Compact lightly using rods or low-intensity vibration — avoid excessive vibration
- For deep sections exceeding 150 mm, staged placement may be recommended depending on ambient temperature

Pump Application

- HYDROBLOC® MC may be pumped using suitable grout or mortar pumps
- Maintain continuous pumping pressure and avoid interruption during placement

Application temperature: +5°C to +40°C.

Coverage/ Consumption:

Application Thickness	Approximate Consumption
10 mm	Approx. 23 kg/m ²
25 mm	Approx. 57 kg/m ²
50 mm	Approx. 115 kg/m ²
100 mm	Approx. 230 kg/m ²

Note: Consumption figures are approximate. Actual usage may vary with substrate profile, application method, and site conditions.

Curing & Protection:

- Immediately after finishing, cover exposed surfaces with wet hessian or polyethylene sheeting, or apply an approved curing compound
- Minimum curing period: 3 days
- Protect from rapid drying, wind, direct sunlight, frost, and heavy rain throughout the curing period
- Clean all equipment immediately with water after use — hardened material can only be removed mechanically

Packaging:

25 kg moisture-resistant bags

Storage & Shelf life:

- Store in cool, dry conditions, protected from humidity, water ingress, and direct sunlight
- Store off the ground in original, unopened, moisture-resistant packaging



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- Store off the ground in original, unopened, moisture-resistant packaging
- Shelf life: 12 months from date of manufacture in unopened packaging

Health & Safety:

- Avoid inhalation of dust during mixing — use appropriate respiratory protection in dusty conditions
- Wear suitable gloves and eye protection during handling and application
- Avoid skin and eye contact — wash thoroughly with water after handling
- Contains Portland cement — contact with wet product may cause skin irritation or burns
- Refer to the product Material Safety Data Sheet (MSDS) for full safety and handling information

Technical Data:

Property	Value
Appearance	Grey free-flowing powder
Wet Density	2.25 – 2.35 kg/L
Water Addition	3.5 – 3.9 L per 25 kg
Yield	Approx. 13.0 L per 25 kg
Flow Consistency	18 – 24 sec (CRD-C cone)
Pot Life @ 25°C	35 – 45 minutes
Initial Set	3 – 4 hours
Final Set	5 – 6 hours
Expansion Characteristics	Dual expansion
Bleeding	Nil
Chloride Content	Nil
Application Thickness	20 – 300 mm
Modulus of Elasticity	> 30 GPa
Coeff. of Thermal Expansion	10×10^{-6} mm/mm/°C
Application Temperature	+5°C to +40°C

Compressive Strength

Age	Typical Compressive Strength
24 Hours	18 – 22 MPa
3 Days	42 – 50 MPa
7 Days	55 – 65 MPa
28 Days	72 – 82 MPa





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Flexural Strength

Age	Typical Flexural Strength
1 Day	7 – 8 MPa
7 Days	10 – 12 MPa
28 Days	13 – 15 MPa

Bond Strength

Test	Typical Result
Concrete Bond Strength (ASTM C882)	> 2.0 MPa

Standards Compliance:

- ASTM C1107 — Standard Specification for Packaged Dry, Hydraulic-Cement Grout
- CRD-C 621 — Corps of Engineers Specification for Non-Shrink Grout
- ASTM C882 — Bond Strength by Slant Shear
- ASTM C827 — Change in Height at Early Ages

Limitations:

- Do not apply below +5°C or above +40°C
- Do not exceed recommended water dosage
- Do not use in moving or dynamic joints
- Protect freshly placed material from rapid moisture loss
- For sections exceeding 300 mm, consult the Hydrobloc technical department