

# PRODUCT DATA SHEET

## M-BED NON-SHRINK GROUT

VER 1.0 MAR 2024



M-Bed Non-Shrink Grout is a high-strength, Class A structural grout designed with shrinkage compensation, self-leveling properties, and a formulation that enables the attainment of high early strengths with minimal water addition.

### Product Uses:

<ul style="list-style-type: none"> <li>Designed for securing anchor bolts.</li> </ul>	<ul style="list-style-type: none"> <li>Appropriate for machine foundation applications.</li> </ul>
<ul style="list-style-type: none"> <li>Suitable for filling cavities, gaps, and recesses.</li> </ul>	<ul style="list-style-type: none"> <li>Well-suited for use with bridge bearings and ideal for rail beds.</li> </ul>
<ul style="list-style-type: none"> <li>Possesses high-strength characteristics.</li> </ul>	<ul style="list-style-type: none"> <li>Reliable for reinforcing columns in precast construction.</li> </ul>

### Product Advantages:

<ul style="list-style-type: none"> <li>Offers high compressive and flexural strength with adjustable consistency.</li> </ul>	<ul style="list-style-type: none"> <li>Resistant to impact and vibration.</li> </ul>
<ul style="list-style-type: none"> <li>Maintains good dimensional stability and demonstrates outstanding flowability.</li> </ul>	<ul style="list-style-type: none"> <li>Considered non-toxic and non-corrosive. Does not exhibit bleeding.</li> </ul>
<ul style="list-style-type: none"> <li>Plastic state is shrinkage compensated and the controlled expansion guarantees thorough contact and effective load transfer.</li> </ul>	<ul style="list-style-type: none"> <li>Reaches minimum 60MPa after 7 days for quick return to service of heavy machinery.</li> </ul>

### Product Data:

Form/Colour	Powder / Grey
Packaging	20kg bags
Composition	Cement, selected aggregates, and special additives
Shelf life	12 months if stored properly in unopened, original packaging
Storage conditions	Dry, cool, shaded place
Density	1.60 kg/ltr (bulk density of powder) 2.20 kg/ltr (density of fresh grout)
Maximum grain size	Dmax: 1.00mm



<b>Soluble chloride ion content</b>	≤ 0.005%
<b>Mixing ratio</b>	Water addition per 20 kg bag (Litre/s) @23degC &50%R.H Stiff                      Plastic                      Flowable 2.5L+/-1%              3.0L+/-1%              4.0L+/-1% These mix ratios are a guide and preliminary trials at local temperatures/humidity conditions are recommended.
<b>Yield (Litres of Mixed material)</b>	Dry - 10.3L, Plastic - 10.96L, Flowable -11.63L
<b>Layer thickness</b>	min. 10 mm / max. 100 mm
<b>Flowability</b>	250 - 320mm (Flow table spread) (ASTM C230-90, no strokes)
<b>Ambient air temperature</b>	+5 °C minimum; +35 °C maximum
<b>Substrate temperature</b>	+5 °C minimum; +35 °C maximum
<b>Pot Life</b>	30 minutes at +20°C

## Technical Data:

Description				Results		
Test Method	Standard	Consistency	Water Addition	1 Day	7 Days	28 Days
Compressive Strength (Mpa)	AS1478.2 Appendix A	Dry	2.5L	41	84	107
		Plastic	3L	37	70	75
		Flowable	4L	27	56	71
Dimension Change (Micro Strain)	AS1478.2 Appendix B	Dry	2.5L	-	1300	1590
		Plastic	3L	-	1130	1590
		Flowable	4L	-	1470	2110
Flexural Strength (Mpa)	ASTM C348	Plastic	3L	-	5	8
Workability - Flow Cone	AS1478.2 Appendix C	Flowable	4L	53s		
Consistency - Flow Trough	AS1478.2 Appendix D	Flowable	4L	510mm		
Fluidity	ASTM C939	Flowable	4L	53.2s		
Expansion	ASTM C940	Flowable	4L	<0.2%		
Final Bleed	ASTM C940	Flowable	4L	<0.2%		
Setting Time	ASTM C403	Plastic	3L	3.5hrs -Initial set 4hrs -Final set		

**Note:** The typical properties given above are derived from laboratory testing. Test results obtained will vary if carried out to an alternative standard or sample dimensions or temperature/humidity conditions.



## Application Instructions:

<b>Surface Preparation Instructions</b>	For concrete surfaces to be suitable, they must be devoid of dirt, damage, and any traces of oil, grease, or loose particles. When it comes to metal surfaces like iron and steel, they should be free of rust, scale, as well as any oil or grease. If the substrate is absorbent, it should be fully saturated 2 hours before application, but there shouldn't be any standing water. Edges of any concrete substrate to be grouted must be saw-cut to a minimum depth of 10mm to ensure a strong and level bond.
<b>Mixing Instructions</b>	<p>Add the powder to the pre-measured water (starting with the minimum water amount) to achieve the desired consistency. Mechanically blend the mixture for a minimum of 3 minutes using a low-speed electric drill (maximum 500 revolutions per minute) with a disc agitator attached, until it reaches a smooth texture. Alternately, you can use mixing equipment like a two-armed mixer or a forced-action basket/pan-type mixer.</p> <p>Note: It is recommended to mix a small test batch to confirm the optimal mix ratio for working consistency based on current environmental conditions, particularly temperature.</p>
<b>Application Instructions</b>	<p>To fully benefit from plastic expansion, ensure that M-Bed Non-Shrink Grout is placed within 15 minutes of mixing. Keep the material well-agitated in the mixer during this time. Any grout mix showing signs of stiffening after this period should be discarded. Its consistency can range from thick cream to smooth plastic.</p> <p><b>Flowable state:</b> When dealing with confined sections, opt for low-pressure cement grouting equipment or hand rodding. Ensure the escape of entrapped air by appropriately venting high points. For extensive grouting installations, consider the use of pumped M-Bed Non-Shrink Grout.</p> <p><b>Plastic state:</b> Can be inserted using a rod or applied using a trowel.</p> <p><b>Dry pack:</b> Correct consistency should permit solid pressing into a hard ball without any cracking. Use an appropriate tampering tool to firmly press into place.</p> <p><b>Vertical hole applications:</b> Two options are present in this application where the bar can be placed in the hole first and the grout is poured around the bar. Or, fill the hole with grout and place the bar into the hole, moving the bar up and down a few times to coat the bar evenly for a strong bond.</p> <p><b>Horizontal hole applications:</b> Fill the hole with grout in its plastic state and insert the bar in and out of the hole a few times to coat the bar evenly for a strong bond.</p> <p><b>Note:</b> Where rods or rebars are present, there should be at least 20mm between the</p>



	<p>edge of the bore hole and the rod/rebar. Depth of the hole must be greater than 10 times the diameter of the rod/rebar. Avoid vibrating it into position to prevent mix segregation.</p> <p><b>Aggregate Addition:</b></p> <p>To accommodate pours exceeding a depth of 100mm, you can include 10mm washed coarse aggregate in M-Bed Non-Shrink Grout. For every 20kg bag of grout, the maximum addition of aggregate is 10kgs. Maximum thickness of application is 200mm.</p>
<b>Curing Instructions</b>	Ensure that the surface remains visible and shield it from drying out prematurely by following standard curing procedures. Keep it moist, cover it with damp hessian, periodically spray it with water or use a curing compound as needed.
<b>Clean-Up Instructions</b>	Immediately remove all wet material from mixing vessels and tools using clean water as any mix that has hardened will need to be removed by mechanical means.