

HIGHWAYS MBM 104



OPEN TO
TRAFFIC IN **60**Min **HAPAS**



Product Sheet 2

Larsen Highways MBM 104 is a two component, high performance bedding mortar providing all the benefits of a resin based mortar with the ease of use associated with cement based mortars. It is suitable for use in the installation, raising and reinstatement of ironwork, up to and including installation Group 4 of BS EN 124 where rapid trafficking is required and has exceptional performance in wet weather conditions.

HAPAS APPROVED
COMPLIES WITH DMRB HD27/15
COMPLIES WITH DMRB HA104/09
COMPLIES WITH NRA MCDRW VOL 1 CLAUSE 507.17

2hr COMPRESSIVE STRENGTH > 20MPa
3hr COMPRESSIVE STRENGTH > 30MPa
3hr TENSILE STRENGTH > 5MPa
10 – 50mm BED DEPTH IN ONE PASS
NON-SHRINK
FROST RESISTANT
15 – 20 min WORKING TIME



TECHNICAL INFORMATION

| PRODUCT INFORMATION | | | | | | | | | | | | | | | | |
|---|---|------------------|--------------------|-----------------|--|------------------|----------------|--|----------------------|-----------------|--|-------------------|----------------|--|------------------|------------------|
| FORM | Granular | | | | | | | | | | | | | | | |
| COLOUR | Grey | | | | | | | | | | | | | | | |
| MAX AGGREGATE | 6mm | | | | | | | | | | | | | | | |
| HAZARD INFORMATION: | IRRITANT – Contains Cement. Consult Safety Datasheet before use | | | | | | | | | | | | | | | |
| CLEANING: | Clean tools, equipment, etc. using warm water. Mechanical means are necessary when the product has set. | | | | | | | | | | | | | | | |
| PACKAGING: | 20kg multi-wall paper sacks and 2.5L bottles | | | | | | | | | | | | | | | |
| STORAGE INSTRUCTIONS: | Store unopened containers in a cool, dry location away from extremes of temperature | | | | | | | | | | | | | | | |
| SHELF LIFE: | 6 months in unopened manufacturer's containers | | | | | | | | | | | | | | | |
| APPLICATION INFORMATION | | | | | | | | | | | | | | | | |
| MIX RATIO: | 20kg Bag + 2.3L liquid additive | | | | | | | | | | | | | | | |
| APPLICATION TEMP: | +1 to +30°C | | | | | | | | | | | | | | | |
| WORKING TIME: | 15 min | | | | | | | | | | | | | | | |
| SETTING TIME: | 20-25min | | | | | | | | | | | | | | | |
| TIME TO TRAFFIC: | Vehicle Traffic - from 1 hour (depending on site conditions) | | | | | | | | | | | | | | | |
| BED THICKNESS | 10 - 50mm | | | | | | | | | | | | | | | |
| COVERAGE: | 1 pack (20 kg + 2.3L) will cover approx. 1m ² @ 10mm | | | | | | | | | | | | | | | |
| PERFORMANCE INFORMATION | | | | | | | | | | | | | | | | |
| DENSITY | 2200kg/m ³ | | | | | | | | | | | | | | | |
| SHRINKAGE: | <0.1% | | | | | | | | | | | | | | | |
| COMPRESSIVE STRENGTH | <table border="0"> <thead> <tr> <th></th> <th style="text-align: center;">Compressive</th> <th style="text-align: center;">Flexural</th> </tr> </thead> <tbody> <tr> <td></td> <td style="text-align: center;">2 hours - 35 MPa</td> <td style="text-align: center;">2hours - 8 MPa</td> </tr> <tr> <td></td> <td style="text-align: center;">3 hours - 39.4 MPa**</td> <td style="text-align: center;">3 hours - 9 MPa</td> </tr> <tr> <td></td> <td style="text-align: center;">24 hours - 50 MPa</td> <td style="text-align: center;">24hrs - 10 MPa</td> </tr> <tr> <td></td> <td style="text-align: center;">28 days - 65 MPa</td> <td style="text-align: center;">28 days - 12 MPa</td> </tr> </tbody> </table> | | Compressive | Flexural | | 2 hours - 35 MPa | 2hours - 8 MPa | | 3 hours - 39.4 MPa** | 3 hours - 9 MPa | | 24 hours - 50 MPa | 24hrs - 10 MPa | | 28 days - 65 MPa | 28 days - 12 MPa |
| | Compressive | Flexural | | | | | | | | | | | | | | |
| | 2 hours - 35 MPa | 2hours - 8 MPa | | | | | | | | | | | | | | |
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| | 24 hours - 50 MPa | 24hrs - 10 MPa | | | | | | | | | | | | | | |
| | 28 days - 65 MPa | 28 days - 12 MPa | | | | | | | | | | | | | | |
| <small>*Typical Results tested after storage@ 20-C **Report No. TAS 11/160 ***Report No. TAS 11/161</small> | | | | | | | | | | | | | | | | |
| TENSILE STRENGTH | 3hours - 5.4MPa** | | | | | | | | | | | | | | | |
| TENSILE ADHESION STRENGTH: | > 3MPa to concrete | | | | | | | | | | | | | | | |

DIRECTIONS FOR USE

PREPARATION

All substrates must be suitable to receive the bedding as per current good working practices. All substrates should be clean and thoroughly sound and free from oils, grease, dust, loose particles or any other contaminants which may interfere with adhesion. They should be pre-soaked but free from standing water.

MIXING

Add the contents of the liquid additive container to a suitable mixing vessel, holding back approx. 200ml and then slowly add the contents of the 20kg bag while mixing thoroughly with a slow speed drill and paddle. Only if required to achieve the desired workability, add the remaining liquid additive. Mix for a minimum of 2 minutes. Extra water or liquid additive should not be added as this will reduce the hardened properties of the product. Streetscape MBM 104 will begin to set in approx 15 minutes, do not try to remix or wet-up MBM 104 which has 'gone off'.

APPLICATION

Streetscape MBM 104 can be applied in a bed of 10 - 50mm in a single pass and should be placed typically within 5 minutes of mixing to allow time for adjustment. Typically place a bed of 5-10mm thicker than required to allow for adjustments. The frame should be placed onto the mortar bed without voids. Tamp the frame in place to achieve the required level. Any exposed mortar should be smoothly finished by float. All works should be carried out in line with advice laid out in the relevant sections of the Design Manual for Roads and Bridges.

RESTRICTIONS

Speed of set and strength development will be affected by site and substrate temperature. Warm conditions will accelerate setting and cold conditions will slow setting. Protect freshly placed material from freezing until set. In adverse weather conditions, MBM104 should not be used if the temperature is below 3°C on a falling temperature or below 1°C on a rising thermometer.

NOTE

Department of Transport Design Manual for Roads and Bridges Volume 7 Section 2 Part 4 HD 27/15 states - "3.11 Mortars for bedding iron work such as manhole cover frames during repairs may be trafficked when the strength is expected to be 20 N/mm². For rapid construction, this strength should be achieved within 2 hours."

Department of Transport Design Manual for Roads and Bridges Volume 4 Section 2 Part 5 HA 104/09 states - "6.1 Chamber tops and gully tops should be bedded upon bedding material which has the following properties:

- (a) the material should be non-shrink. Use of other materials may be considered in consultation with the Overseeing Organisation;
- (b) the material should have a minimum workable life of 15 minutes;
- (c) the compressive strength of the material should exceed 30N/mm² in 3 hours;
- (d) the tensile strength of the material should exceed 5N/mm² in 3 hours;"

National Roads Authority Manual of Contract Documents for Roadworks Volume 1 Clause 507.17 states - "17 Frames for chamber covers and gratings shall be set in cement mortar designation (i) complying with Clause 2404 or a proprietary quick-setting mortar of equivalent strength.

Covers and gratings located within the carriageway, hardshoulder or hardstrip shall be set in a mortar with the following properties:

- (i) The material shall be non-shrink;
- (ii) The material shall have a minimum workable life of 15 minutes;
- (iii) The compressive strength of the material shall exceed 30N/mm² in 3 hours;
- (iv) The tensile strength of the material shall exceed 5N/mm² in 3hours."