

# HIGHWAYS PM04

Federation  
Great Britain

Larsen PM04 is a two component multipurpose polyester resin mortar for rapid bedding and fixing of utility access cover and frames, highways ironwork, duct frames and precast concrete units. It is particularly suited for use in critical locations and heavily trafficked areas. Supplied as a two pack fast-setting mortar it has been formulated for ease of use and easy placement.

Complies with Department of Transport Design Manual for Roads and Bridges HA104/09.

**EASY TO USE****EXCEPTIONAL EARLY AND ULTIMATE STRENGTHS****RAPID RETURN TO SERVICE****OPEN EARLY TO TRAFFIC****BED DEPTH 5-50mm**

**TECHNICAL INFORMATION**

PRODUCT INFORMATION			
<b>FORM</b>	Granular 2 part Polyester Resin		
<b>COLOUR</b>	Buff		
<b>MAX AGGREGATE</b>	2mm		
<b>HAZARD INFORMATION:</b>	Consult Safety Datasheet before use RESIN - Flammable liquid and vapour. Harmful if inhaled. ADR Group 3 Class 3		
<b>CLEANING:</b>	Clean tools, equipment, etc. using suitable solvent before product sets. Mechanical means are necessary when the product has set.		
<b>PACKAGING:</b>	25 kg, 12.5kg and 6.5kg 2-component packs		
<b>STORAGE INSTRUCTIONS:</b>	Store unopened containers in a dark, cool, dry location away from extremes of temperature		
<b>SHELF LIFE:</b>	Minimum 6 months in unopened manufacturer's containers		
APPLICATION INFORMATION			
<b>SETTING TIME:</b>	15-20 min		
<b>TIME TO TRAFFIC:</b>	Vehicle Traffic - after 60 min (depending on site conditions)		
<b>BED THICKNESS</b>	5-50mm		
<b>COVERAGE:</b>	15 kg will cover 0.6m <sup>2</sup> @ 12.5 mm		
TYPICAL PERFORMANCE INFORMATION			
<b>DENSITY</b>	2000kg/m <sup>3</sup>		
<b>STRENGTH</b> (Tested @20°C)		Compressive	Direct Tensile
	1hour	60 MPa	8 MPa
	2hour	70 MPa	9 MPa
	7day	80 MPa	10 MPa
	28day	85 MPa	12 MPa

## DIRECTIONS FOR USE

### PREPARATION

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

### MIXING

Remove resin tin and bag of filler/activator from tub. Empty contents of the tin into the tub and slowly add the filler/activator while mixing thoroughly with a slow speed drill and paddle. Mix to a uniform colour and consistency. Do not part mix. Always mix one full bag with one full tin. 2 or more packs may be mixed at the same time, but only mix enough material which can be used within 5-10min.

### APPLICATION

Apply in a bed of 5 - 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. After material has reached initial set backfilling can take place with, for example, Highways MBC10. Highways PM04 can receive traffic after 1 hour depending on site conditions. 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. Highways PM04 will set at temperatures as low as 0°C but substrates must be frost free and dry. Do apply in wet conditions.

### NOTE

Department of Transport Design Manual for Roads and Bridges Volume 7 Section 2 Part 4 HD 27/04 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/mm<sup>2</sup>. 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/mm<sup>2</sup> in 3 hours;
- (d) the tensile strength of the material should exceed 5N/mm<sup>2</sup> 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/mm<sup>2</sup> in 3 hours;
- (iv) The tensile strength of the material shall exceed 5N/mm<sup>2</sup> in 3hours."