

## Epicon Grout M

Heavy Duty High Strength Epoxide Grout

### Description

Epicon Grout M is based on solvent free epoxy resins and is one of four epoxy grouts in our range which are specified below. These cover the majority of grouting and fixing applications encountered within the civil engineering and construction industry where the mechanical properties must be of the highest order. All of the grouts are designed to comply with the requirements of EN 1504 Part 4.

### Epoxide Grout Range

- Epicon Grout RT: Pourable free flowing grout, recommended for gaps over 25mm where a low exotherm is required.
- Epicon Grout L: Pourable free flowing grout, recommended for gaps of 20 - 100mm.
- Epicon Grout M: Lightly filled pourable free flowing grout, recommended for gaps of 5 - 40mm.
- Epicon Grout S: Unfilled pourable free flowing grout for gap and crack widths of 0.25 - 6mm. Also suitable for injection applications.
- Epicon Grout H: A thixotropic grout for horizontal or inverted fixings.

### Advantages

- Solvent free non-shrink system
- No priming required
- Chemically resistant
- High compressive, tensile & flexural strengths
- Rapid strength gain resulting in high bond strength
- High dynamic load bearing tolerance
- Excellent performance in harsh/extreme environments

### Applications

- Grouting in machinery, turbines, centrifuges etc.
- Fixing/holding down bolts, starter bars, anchors etc.
- Grouting beneath heavy crane & transporter rails
- Production of high strength bearing plinths

### Technical Information

Compressive Strength development @ 23°C

	24 Hour	72 Hour	7 Day	28 Day
Epicon Grout M	70 MPa	77 MPa	85 MPa	90 MPa



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EN 1504-4	
Compressive strength	≥30 MPa
Modulus of elasticity,	≥2000 MPa
Shear strength	≥12 MPa

### Working Time

Application Temperature	Pot Life
23°C	50 minutes
10°C	115 minutes
5°C	170 minutes

## Technical properties of Epicon Grout M

Properties	Standard	Performance Requirement	Declared Value
Appearance			Black resinous grout
Max. aggregate size			0.3 mm
Layer minimum thickness			5 mm
Working time	EN ISO 9514		40 minutes
Hardening time			90-120 minutes
Density			1950-2100 kg/m <sup>3</sup>
Temperature for application			5-35°C
Flow/squeezability test	EN 1799	≥3000 mm <sup>2</sup>	≥3000 mm <sup>2</sup>
Compressive strength @ 23°C	EN 12190	≥30 MPa	70 MPa @ 24 hours 80 MPa @ 3 days 88 MPa @ 7 days 90 MPa @ 28 days
Compressive strength @ 5°C	EN 12190		39 MPa @ 24 hours 70 MPa @ 3 days 80 MPa @ 7 days 85 MPa @ 28 days
Compressive elastic modulus	EN 13412	≥2 GPa	≥10 GPa
Tensile strength	BS 6319-7		21 MPa
Flexural strength	BS 6319-3		34 MPa
Flexural elastic modulus	EN ISO 178	≥2 GPa	≥10 GPa
Slant shear adhesion - Concrete	EN 12615	≥6 MPa	≥6 MPa
Slant shear adhesion - Steel	EN 12188	≥50 MPa @ ∇50° ≥60 MPa @ ∇60° ≥70 MPa @ ∇70°	≥ 50 MPa @ ∇50° ≥ 60 MPa @ ∇60° ≥ 70 MPa @ ∇70°
Shear strength	EN 12188	≥12 MPa	28 MPa
Slant shear strength	EN 12188		33 MPa
Glass transition temperature	EN 12614	≥40°C	≥40°C
Coefficient of thermal expansion	EN 1770	≤100 x 10 <sup>-6</sup> per K	≤100 x 10 <sup>-6</sup> per K

Technical data shown are statistical results and do not correspond to guaranteed minima.

Tolerances are those described in appropriate performance standards.

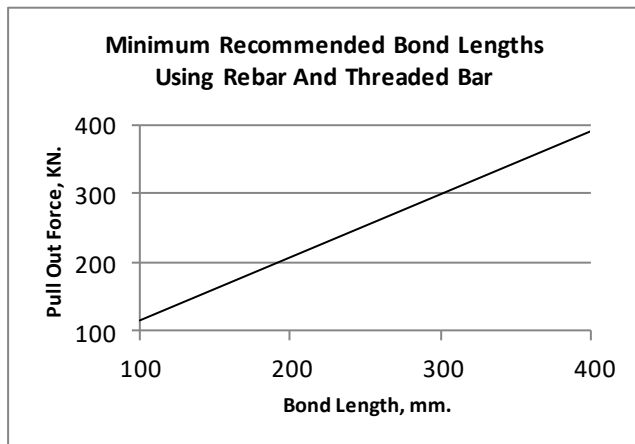
1 N/mm<sup>2</sup> = 1MPa

1 kN/mm<sup>2</sup> = 1 GPa

## Bond Strength Development

The bond strength of Epicon Grout M is dependent upon several factors, the main of which are:

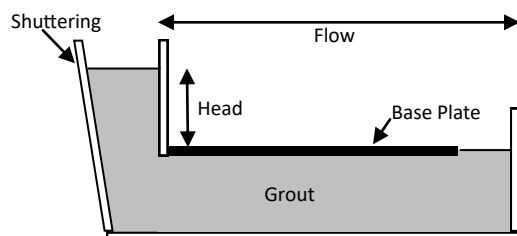
- Strength of surrounding material
- Method of drilling hole
- Type of fixing
- Resin bond length, see below



## Flow Characteristics

The maximum distance of flow is governed by the gap size, head of grout applied and the temperature at the time of pouring. The table below gives typical values for flow design.

Temperature	Gap width	Hydrostatic head	Max flow
20°C	80 mm	250 mm	750 mm



## Surface Preparation

Surfaces should be clean, sound and visibly dry, free from oils, grease, loose material and dust. Steel surfaces should be grit blasted to a SA 2.5 standard. Plastic surfaces should be roughened with abrasive paper.

Having drilled holes in concrete or stonework, to the required depth and diameter, sides should be roughened with a reaming tool or suitable equipment; we recommend this is undertaken, particularly for diamond-drilled holes.

All standing water, dust and debris must be removed from holes, leaving sound clean substrates.

For grouting under machinery and other equipment, it will be necessary to install shutter restraint and to construct a simple hopper to provide a head of grout, enabling it to flow and fill voids beneath baseplates. We recommend that grout is filled and levelled to the upperside of baseplates. Where shuttering is used, a suitable silicone or wax based release agent should be applied to avoid adhering of the grout.

## Mixing

In low temperatures it is important to store and precondition the material in a warm environment, and where possible, to warm the substrate prior to application.

Pour the entire contents of Epicon Grout M hardener into the Epicon Grout M base tin and mix with a high-torque slow speed drill and appropriate 80mm paddle until thoroughly mixed (approx 1 - 2 minutes). Transfer the mixed resin to the drum of a suitable forced action or pan type paddle mixer, then with the drum rotating, gradually add the entire contents of the bag of aggregate supplied. Mix for 2-3 minutes until a homogenous lump-free grout is achieved.

Alternatively, for mixing a small number of packs, a high-torque slow speed drill fitted with an appropriate 80mm paddle may be utilised to blend aggregate into mixed resin in a suitable mixing vessel to achieve a homogenous lump-free grout, taking great care not to entrain excess air.

Each mix should be allowed to stand for 5-10 minutes before pouring to allow the product to de-aerate.

## Application

Epicon Grout M should be carefully placed by poured application, remembering that flow and strength gain are temperature related. Contact Nufins technical department for further information on temperature related early hours Compressive Strength gain and flow. Always mix sufficient material to complete placing in one uninterrupted pour to achieve a monolithic body of material.

Place the product from one side only via a feed hopper to avoid air inclusions and to ensure a continuous free flow of the grout. Should more than one mix be required this must be carefully planned to maintain supply to the hopper.

## Cleaning

Mixing equipment and tools should be cleaned immediately after use and frequently through the day to avoid product build up, using Nuwash.

## Packaging

Epicon Grout M is available in 4.5kg units (yield approx 2.2 litre & 25kg units (yield approx 10 litres).

Nuwash is available in 5 litre & 20 litre drums.

## Storage

The shelf life is 12 months when stored unopened in dry, normal conditions and away from direct sunlight. Protect from frost. If stored in cold conditions the components should be warmed prior to use as this will greatly aid mixing and pouring.

## Health and Safety

Product Safety Data Sheets (SDS) are available from Nufins. SDS sheets are provided to help customers satisfy their safe handling, use and disposal needs as well as assist with any conformance requirements made locally by health and safety regulations.

SDS are continually updated to provide the latest information to our customers. We therefore recommend contacting our head office to obtain the most recent and accurate SDS before handling and using any product.

## Limitations

For grouting applications where there are sections >40mm, large volume, very warm or low temperatures, or temperatures below 5°C, contact Nufins technical department for further advice.

## Disclaimer

The information contained herein is to the best of our knowledge true and accurate and is given in good faith but without warranty. The user will be deemed to have satisfied themselves independently as to the suitability of our products for their own particular purpose. In no event shall Nufins be liable for consequential or incidental damages.

Users must always refer to the most recent issue of the Technical Datasheets, copies of which will be supplied on request.

## Technical Support

Through our technical department and laboratories we can offer a comprehensive service to specifiers and contractors. Technical contacts are available to provide additional information and arrange demonstrations.