

# LOCTITE® Fixmaster® Super Grout

February 2014

## PRODUCT DESCRIPTION

LOCTITE® Fixmaster® Super Grout provides the following product characteristics:

|  |  |
|--|--|
| <b>Technology</b>  | Epoxy  |
| <b>Chemical Type</b>                                     | Epoxy  |
| <b>Appearance (Resin)</b>                                | Red <sup>LMS</sup>   |
| <b>Appearance (Hardener)</b>                             | Light brown to amber liquid <sup>LMS</sup>   |
| <b>Appearance (Mixed)</b>                                | Thick red liquid   |
| <b>Components</b>  | Two components - requires mixing   |
| <b>Mix Ratio, by weight - Resin : Hardener to Filler</b> | 10 : 5 to 85   |
| <b>Cure</b>  | Room temperature cure  |
| <b>Application</b>                                       | Grouting   |
| <b>Specific Benefit</b>                                  | <ul style="list-style-type: none"> <li>• 100 % solids epoxy system</li> <li>• Non-shrinking</li> <li>• Chemical resistant</li> <li>• Corrosion resistant</li> <li>• Self-leveling</li> <li>• Fast and easy to use</li> <li>• Stronger than concrete</li> </ul> |

LOCTITE® Fixmaster® Super Grout is an aggregate-filled epoxy system designed for grouting up to 460 mm (18 in) deep, including self-levelling applications under rails and sole plates at typical dry service temperatures of -30 to 105 °C (-20 to 225 F). Withstands high torque loading. Typical applications include diesel or gas engines and generators, cone crushers, compressors, mine hoists, outboard bearings, and gantry cranes.

## TYPICAL PROPERTIES OF UNCURED MATERIAL

### Resin:

|  |           |                               |
|--|-----------|-------------------------------|
| Weight per volume                              | kg/L      | 1.19 to 1.26                  |
|  | (lbs/gal) | (9.9 to 10.5 <sup>LMS</sup> ) |
| Viscosity, Brookfield - RV, 25 °C, mPa·s (cP): |           |                               |
| Spindle 4, speed 20 rpm,                       |           | 3,800 to 4,800 <sup>LMS</sup> |
| Flash Point - See SDS                          |           |                               |

### Hardener:

|  |           |                                |
|--|-----------|--------------------------------|
| Weight per volume                              | kg/L      | 0.94 to 0.98                   |
|  | (lbs/gal) | (7.85 to 8.15 <sup>LMS</sup> ) |
| Viscosity, Brookfield - RV, 25 °C, mPa·s (cP): |           |                                |
| Spindle 2, speed 20 rpm,                       |           | 600 to 1,000 <sup>LMS</sup>    |
| Flash Point - See SDS                          |           |                                |

## Mixed:

|          |  |
|----------|--|
| Coverage | 10.2 liters per kit<br>(620 in³ per kit) |
|----------|--|

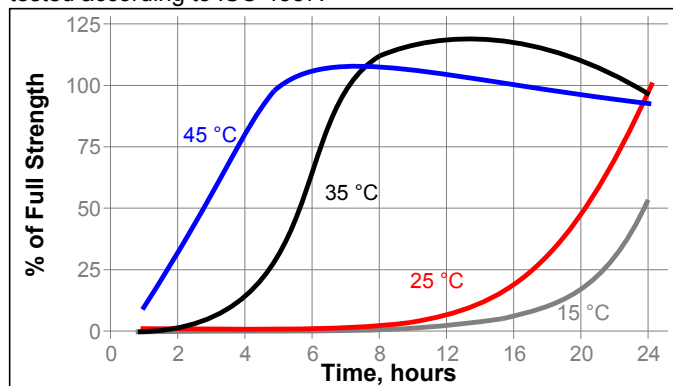
## TYPICAL CURING PERFORMANCE

### Curing Properties

|                          |     |
|--------------------------|-----|
| Cure Time @ 25 °C, hours | 24  |
| Working life, minutes    | 285 |

### Cure Speed vs. Temperature

The graph below shows the shear strength developed with time on grit blasted steel lap shears at different temperatures and tested according to ISO 4587.



## TYPICAL PROPERTIES OF CURED MATERIAL

Cured @ 25 °C except where noted

### Physical Properties:

|                                  |                                   |
|----------------------------------|-----------------------------------|
| Shore Hardness, ISO 868, Shore D | 79                                |
| Volume Shrinkage, %              | 0.48                              |
| Flexural strength, ASTM D790     | N/mm² 28<br>(psi) (4,010)         |
| Flexural modulus                 | N/mm² 8,720<br>(psi) (1,263,960)  |
| Compressive Strength, ISO 604    | N/mm² 95<br>(psi) (13,780)        |
| Compressive Modulus, ISO 604     | N/mm² 11,130<br>(psi) (1,613,400) |
| Tensile Strength, ISO 527-2      | N/mm² 9.7<br>(psi) (1,400)        |
| Tensile Modulus, ASTM D638       | N/mm² 44,080<br>(psi) (6,391,180) |
| Elongation, ISO 527-2, %         | 0.04                              |

|   |                     |
|---|---------------------|
| Coefficient of Thermal Conductivity ASTM F 433, W/(m·K)         | 1.22                |
| Glass Transition Temperature, ASTM E 1640, °C                   | 65                  |
| Coefficient of Thermal Expansion, ISO 11359-2 K <sup>-1</sup> : |                     |
| Below Tg  | 22×10 <sup>-6</sup> |
| Above Tg  | 55×10 <sup>-6</sup> |

**Electrical Properties:**

|                                       |                       |
|---------------------------------------|-----------------------|
| Volume Resistivity, IEC 60093, ohm-cm | 60×10 <sup>12</sup>   |
| Surface Resistivity, IEC 60093, ohms  | 34.8×10 <sup>12</sup> |

**TYPICAL PERFORMANCE OF CURED MATERIAL****Shear Strength**

|                                |                                      |
|--------------------------------|--------------------------------------|
| Lap Shear Strength, ISO 4587:  |                                      |
| Grit Blasted Mild Steel (GBMS) | N/mm <sup>2</sup> 3.4<br>(psi) (500) |

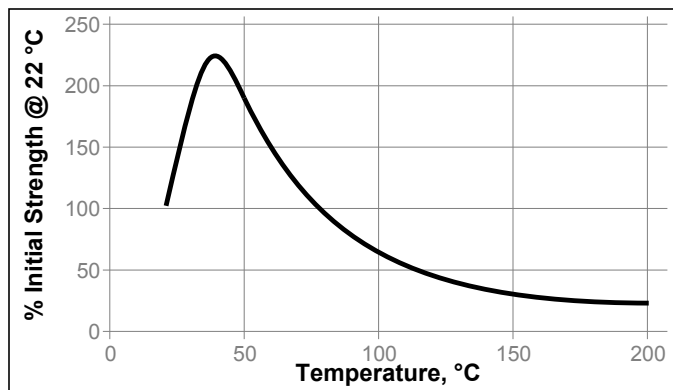
**TYPICAL ENVIRONMENTAL RESISTANCE**

Cured for 72 hours @ 21 °C

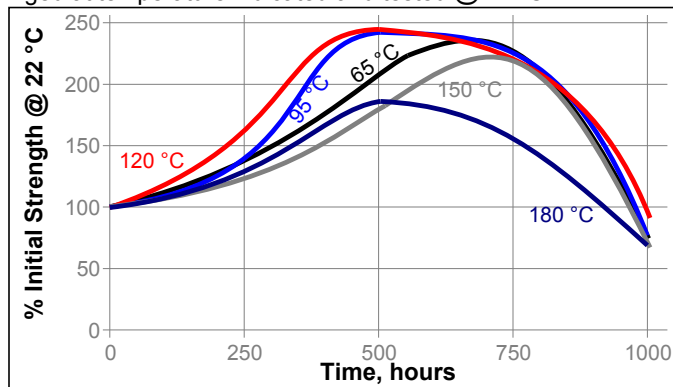
|                                |  |
|--------------------------------|--|
| Lap Shear Strength, ISO 4587:  |  |
| Grit Blasted Mild Steel (GBMS) |  |

**Hot Strength**

Tested at temperature

**Heat Aging**

Aged at temperature indicated and tested @ 22 °C

**GENERAL INFORMATION**

**This product is not recommended for use in pure oxygen and/or oxygen rich systems and should not be selected as a sealant for chlorine or other strong oxidizing materials.**

**For safe handling information on this product, consult the Safety Data Sheet (SDS).**

**Directions for use:**

1. Prepare area to be grouted. Make sure foundation is above 10 °C (50F). The grout is not recommended for use below 10 °C (50F).

2. Remove the two cans and filler from the 5 gallon pail.

**3. Mixing:**

- This material is very thick once all the filler has been added. Best results are achieved using a pneumatic drill attached to a mixing blade.
- If an electric drill is used, it must be either very heavy duty for geared to provide adequate torque.

4. Pour all contents of the resin into the pail. Shake the hardener can to premix then add all of the hardener to the resin. Mix the resin and hardener together for 3 minutes.

5. The resin and the hardener are very low viscosity and should be mixed at low speed to avoid splashing.

6. Gradually add the filler to the pail and mix until there is no dry powder present.

7. Pour into area to be grouted immediately after mixing to give maximum flow before set up. At 25 °C, working time is 285 minutes and material will be functionally cured in 24 hours.

8. For grouting applications greater than 460 mm (18 inches), pour in 400 mm (16 inch) increments. Allow previous grout to become tack-free and cool before making subsequent pours. Before making additional pours, be sure previous poured surface is clean and dry - free from dust, oil and moisture.

9. Allow epoxy grout to harden before starting machinery.

**Technical Tips for Working With Epoxies**

Working time and cure depends on temperature and mass:

- The higher the temperature, the faster the cure.
- The larger the mass of material mixed, the faster the cure.

To speed the cure of epoxies at low temperatures:

- Store epoxy at room temperature.
- Pre-heat repair surface until warm to the touch.

To slow the cure of epoxies at high temperatures:

- Mix epoxy in small masses to prevent rapid curing.
- Cool resin/hardener component(s).

**Loctite Material Specification<sup>LMS</sup>**

LMS dated June 26, 2001 (Resin) and LMS dated January 23, 2004 (Hardener). Test reports for each batch are available for the indicated properties. LMS test reports include selected QC test parameters considered appropriate to specifications for customer use. Additionally, comprehensive controls are in place to assure product quality and consistency. Special customer specification requirements may be coordinated through Henkel Loctite Quality.

**Storage**

Store product in the unopened container in a dry location. Storage information may be indicated on the product container labeling.

**Optimal Storage: 8 °C to 21 °C. Storage below 8 °C or greater than 28 °C can adversely affect product properties.**

Material removed from containers may be contaminated during use. Do not return product to the original container. Henkel Corporation cannot assume responsibility for product which has been contaminated or stored under conditions other than those previously indicated. If additional information is required, please contact your local Technical Service Center or Customer Service Representative.

**Conversions**

$(^{\circ}\text{C} \times 1.8) + 32 = ^{\circ}\text{F}$   
 $\text{kV/mm} \times 25.4 = \text{V/mil}$   
 $\text{mm} / 25.4 = \text{inches}$   
 $\mu\text{m} / 25.4 = \text{mil}$   
 $\text{N} \times 0.225 = \text{lb}$   
 $\text{N/mm} \times 5.71 = \text{lb/in}$   
 $\text{N/mm}^2 \times 145 = \text{psi}$   
 $\text{MPa} \times 145 = \text{psi}$   
 $\text{N}\cdot\text{m} \times 8.851 = \text{lb}\cdot\text{in}$   
 $\text{N}\cdot\text{m} \times 0.738 = \text{lb}\cdot\text{ft}$   
 $\text{N}\cdot\text{mm} \times 0.142 = \text{oz}\cdot\text{in}$   
 $\text{mPa}\cdot\text{s} = \text{cP}$

**Note:**

The information provided in this Technical Data Sheet (TDS) including the recommendations for use and application of the product are based on our knowledge and experience of the product as at the date of this TDS. The product can have a variety of different applications as well as differing application and working conditions in your environment that are beyond our control. Henkel is, therefore, not liable for the suitability of our product for the production processes and conditions in respect of which you use them, as well as the intended applications and results. We strongly recommend that you carry out your own prior trials to confirm such suitability of our product.

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Reference 0.0