

LOCTITE[®] 3478[™] Superior Metal

April 2008

PRODUCT DESCRIPTION

LOCTITE[®] 3478[™] Superior Metal provides the following product characteristics:

Technology	Epoxy
Chemical Type	Epoxy
Appearance (Part A)	Metallic gray ^{LMS}
Appearance (Part B)	White ^{LMS}
Appearance (Mixed)	Thick dark gray paste
Components	Two component - requires mixing
Mix Ratio, by volume - Resin : Hardener	4 : 1
Mix Ratio, by weight - Resin : Hardener	7.25 : 1
Cure	Room temperature cure after mixing
Application	Industrial maintenance
Specific Benefit	<ul style="list-style-type: none"> • High ferro-silicon content • Resists corrosion, abrasion, and chemicals • Rebuilds worn parts fast - limits downtime • Superior adhesion - forms a solid bond • Long lasting

LOCTITE[®] 3478[™] Superior Metal is a two-part ferro-silicon filled epoxy resin system. It is extremely resistant to corrosion, chemical attack, and abrasion under typical dry service temperatures of -29 °C to +121 °C. It is ideal for restoring parts worn by mechanical and/or corrosion impact. Typical applications are restoring tolerances to worn shafts, repairing worn keyways, repairing damaged housings, filling pitted surfaces in worn machinery, and restoring fit to bearing housings.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Part A:

Specific Gravity @ 25 °C 2.5 to 2.71^{LMS}

Viscosity, Brookfield - RV, 25 °C, mPa·s (cP):

Spindle TF, speed 2.5 rpm 1,200,000 to 2,100,000^{LMS}

Part B:

Specific Gravity @ 25 °C 1.42 to 1.48^{LMS}

Viscosity, Brookfield - RV, 25 °C, mPa·s (cP):

Spindle TF, speed 2.5 rpm 1,800,000 to 3,000,000^{LMS}

Mixed:

Coverage 232 cm² @ 6 mm thick per 0.45 kg kit
(36 in² @ 0.25 in thick per 1 lb kit)

TYPICAL CURING PERFORMANCE

Curing Properties

Working Time @ 25 °C, minutes	20
Functional Cure Time @ 25 °C, hours	6
Full Cure Time @ 25 °C, hours	24

TYPICAL PROPERTIES OF CURED MATERIAL

Cured @ 25 °C

Physical Properties:

Shore Hardness, ISO 868, Durometer D	90
Compressive Strength, ISO 604	N/mm ² 125 (psi) (18,000)
Tensile Strength, ISO 527-2	N/mm ² 38 (psi) (5,500)

TYPICAL PERFORMANCE OF CURED MATERIAL

Adhesive Properties

Lap Shear Strength, ISO 4587:	
Steel (grit blasted)	N/mm ² 17 (psi) (2,500)

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 Material Safety Data Sheet (MSDS).

Directions for use

1. Clean and dry surface of application. Grind or sandblast surface for best adhesion.
2. Mix 4 parts resin to 1 part hardener by volume (7.25 to 1 by weight), or transfer entire kit onto a clean and dry mixing surface and mix material vigorously until a uniform color is obtained.
3. Apply fully mixed material to prepared surface.
4. At 25 °C, the working time is 20 minutes and functional cure time is 6 hours.

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, 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^{LMS}

LMS dated April 28, 2001 (Part A) and LMS dated July 3, 2001 (Part B). 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.

Conversions

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

Storage

Store product in the unopened container in a dry location. Material removed from containers may be contaminated during use. Do not return liquid to original container. 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.

Henkel cannot assume responsibility for product which has been contaminated or stored under conditions other than those recommended. If additional information is required, please contact your local Technical Service Center or Customer Service Representative.

Note

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Reference 0.3