



LOCTITE[®] H8600[™]

October 2005

PRODUCT DESCRIPTION

LOCTITE[®] H8600[™] provides the following product characteristics:

| | |
|--|--|
| Technology | Acrylic |
| Chemical Type | Methacrylate base |
| Appearance (Part A) | White |
| Appearance (Part B) | Blue |
| Appearance (Mixed) | Blue viscous liquid ^{LMS} |
| Viscosity | Medium, thixotropic |
| Components | Two component - requires mixing |
| Mix Ratio, by weight - Part A: Part B | 100 : 50 |
| Mix Ratio, by volume - Part A: Part B | 2 : 1 |
| Cure | Room temperature cure |
| Application | Bonding |
| Specific Benefit | <ul style="list-style-type: none"> • Non sagging • Excellent impact and peel strength • Little or no surface preparation • Offers tolerance to off-ratio mixing • 100% reactive • Excellent environmental resistance |

LOCTITE[®] H8600[™] is designed for structural galvanized steel bonding. It is a two component adhesive system which cures rapidly when mixed at room temperature. This toughened high peel strength product was designed for use at ambient temperature, while maintaining strength at high temperatures as well (e.g. 120 °C). LOCTITE[®] H8600[™] can be applied horizontally or vertically to required surfaces. Typical applications include light gauge steel walls, flooring, headers, studs, hold downs, trusses, and other light gauge steel applications where long term durability bonding galvanized steel is required.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Part A:

Viscosity, Brookfield - HBT, 25 °C, mPa·s (cP):
 Spindle 5, speed 10 rpm 60,000 to 110,000

Part B:

Viscosity, Brookfield - HBT, 25 °C, mPa·s (cP):
 Spindle 4, speed 5 rpm 70,000 to 120,000

TYPICAL CURING PERFORMANCE

Fixture Time

Fixture time is defined as the time to develop a shear strength of 0.1 N/mm².

| | |
|----------------------------------|-----|
| Fixture Time, ISO 4587, minutes: | |
| Galvanized Steel@ 8 °C | 250 |
| Galvanized Steel@ 22 °C | 55 |
| Galvanized Steel@ 32 °C | 30 |

Open Time

Open Time @ 22°C, (mixed), minutes:
 20 gram mass 25

Tack Free Time

Tack Free Time is the time required to achieve a tack free surface.

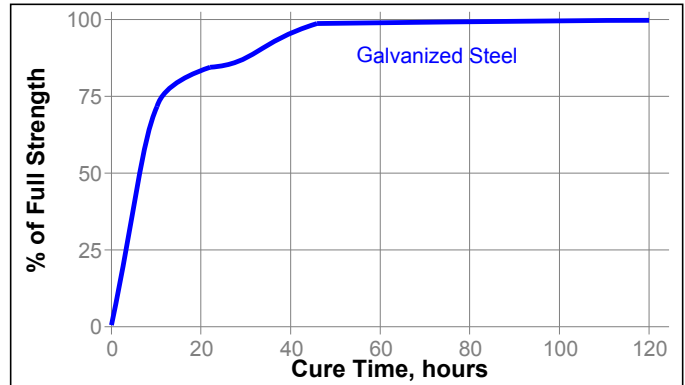
| | |
|--------------------------|-----|
| Tack Free Time, minutes: | |
| @ 8 °C | 170 |
| @ 22 °C | 75 |
| @ 32 °C | 40 |

Peak Exotherm Temperature

| | |
|--|-----|
| Peak Exotherm Temperature, 20 gram mass, °C: | |
| @ 8 °C | 60 |
| @ 22 °C | 120 |
| @ 32 °C | 140 |

Cure Speed

The graph below shows the shear strength developed with time at 22 °C on galvanized steel lap shears and tested according to ISO 4587.



TYPICAL PERFORMANCE OF CURED MATERIAL

Adhesive Properties

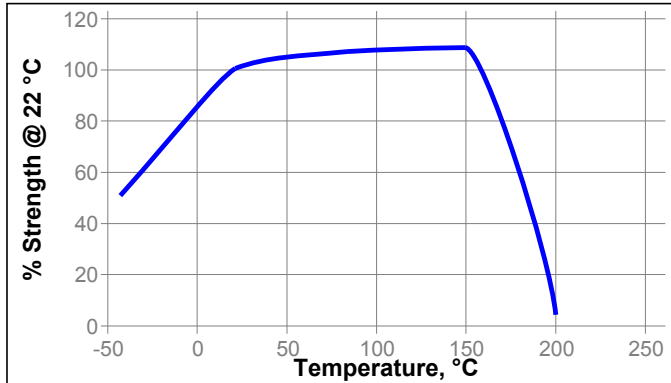
| | | |
|---|-------------------|----------------------|
| Cured for 24 hours @ 22 °C followed by 25 minutes @ 85 °C | | |
| Lap Shear Strength, ISO 4587: | | |
| Galvanized Steel | N/mm ² | ≥12.4 ^{LMS} |
| | (psi) | (≥1,800) |
| Cured for 72 hours @ 22 °C | | |
| Lap Shear Strength, ISO 4587: | | |
| Steel | N/mm ² | 23.1 |
| | (psi) | (3,355) |
| Aluminum (etched) | N/mm ² | 23.2 |
| | (psi) | (3,360) |
| Stainless steel | N/mm ² | 25.7 |
| | (psi) | (3,720) |
| Cured for 5 days @ 22 °C | | |
| "T" Peel Strength, ISO 11339: | | |
| Galvanized Steel (thickness 1.6 mm) | N/mm | 6.2 |
| | (lb/in) | (35) |
| Impact Strength, ASTM D 950, kJ/m ² : | | |
| Galvanized Steel | | 13.1 |

TYPICAL ENVIRONMENTAL RESISTANCE

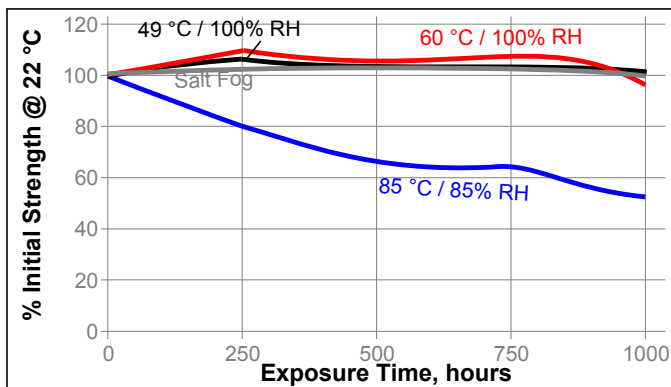
Cured for 5 days @ 22 °C
Lap Shear Strength, ISO 4587:
Galvanized Steel

Hot Strength

Tested at temperature

**Environmental Aging**

Aged at temperature / humidity / condition 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 Material Safety Data Sheet (MSDS).

Directions for use**Mixing**

1. It is recommended that either meter mix equipment or cartridges with static mix nozzles be used to properly ratio and dispense the adhesive.
2. For hand mixing, combine Part A and Part B in the correct ratio and mix thoroughly.
3. Once mixed, LOCTITE® H8600™ should achieve a uniform color. This is important!
4. Heat buildup during and after mixing is normal. To reduce the likelihood of exothermic reaction or excessive heat buildup, mix less than 100 grams at a time. Mixing smaller amounts will minimize heat buildup.

Applying

1. Galvanized steel surface should be free from excessive oxidation (white flake). If oxidation is present, removal is required.
2. Extensive surface preparation is not required for LOCTITE® H8600™, and good bonds can be formed on most substrates after a solvent wipe.
3. To assure maximum bond strength, surfaces must be mated within the adhesive's open time.
4. Use enough material to completely fill the joint when parts are clamped.

Curing

1. Cure speeds may vary based on adhesive and substrate temperatures. Reference the peak exotherm and tack free times to better understand curing time trends.
2. After the fixture time is achieved the material usually has reached handling strength. For heavy parts handling strength can take longer.
3. Parts should be fixed for a minimum period of 24 hours prior to applying a load.

Clean up

1. It is important to clean up excess adhesive from the work area and application equipment before it cures.
2. Denatured alcohol and many common industrial solvents are suitable for removing uncured adhesive.

Loctite Material Specification^{LMS}

LMS dated October 13, 2005 (Part A) and LMS dated October 13, 2005 (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.

Storage

The product is classified as flammable and must be stored in an appropriate manner in compliance with relevant regulations. Do not store near oxidizing agents or combustible materials. Store product in the unopened container in a dry location. Storage information may also be indicated on the product container labelling.

Optimal Storage: 2 °C to 8 °C. Storage below 2 °C or greater than 8 °C can adversely affect product properties.

Material removed from containers may be contaminated during use. Do not return product to the original container. Henkel 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

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Reference 1.0