

## LOCTITE® AA F246™

Known as LOCTITE® F246™  
December 2016

### PRODUCT DESCRIPTION

LOCTITE® AA F246™ provides the following product characteristics:

|                             |   |
|-----------------------------|---|
| <b>Technology</b>           | Acrylic                                     |
| <b>Chemical Type</b>        | Modified methacrylate ester                 |
| <b>Appearance (uncured)</b> | Straw yellow to brown liquid <sup>LMS</sup> |
| <b>Components</b>           | Two components - requires no mixing         |
| <b>Viscosity</b>            | High  |
| <b>Cure</b>                 | With activator                              |
| <b>Application</b>          | Bonding                                     |

LOCTITE® AA F246™ is a two component toughened acrylic adhesive system for high strength structural bonding. It cures rapidly at room temperature on assembly of the joint.

### TYPICAL PROPERTIES OF UNCURED MATERIAL

|  |                             |
|--|-----------------------------|
| Specific Gravity @ 25 °C   | 1.0                         |
| Viscosity, Brookfield - RVT, 25 °C, Pa·s:<br>Spindle 6, speed 10 rpm | 17.0 to 35.0 <sup>LMS</sup> |
| Thermal Stability, 82°C, hours                                       | ≥3 <sup>LMS</sup>           |
| Flash Point - See SDS  |                             |

### TYPICAL CURING PERFORMANCE

#### Fixture Time

Fixture time is defined as the time to develop a shear strength of 0.1 N/mm<sup>2</sup> ∴

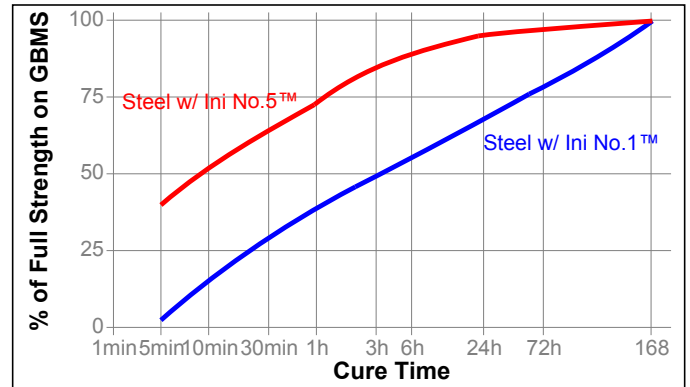
Fixture Time, ISO 4587, minutes:

|  |    |
|--|----|
| Grit Blasted Mild Steel, activated with ≤5 <sup>LMS</sup><br>Activator Ini No.5™ | ≤5 |
| PVC, activated with Activator Ini No.5™  | ≤5 |

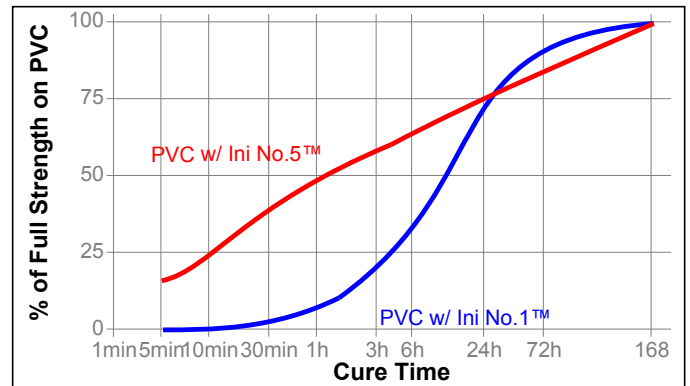
#### Cure Speed vs. Substrate

The rate of cure will depend on the substrate used. The graph below shows the shear strength developed with time on grit blasted mild steel compared to different materials and tested according to ISO 4587.

Activator Ini No.1™ or Ini No.5™ applied to one surface

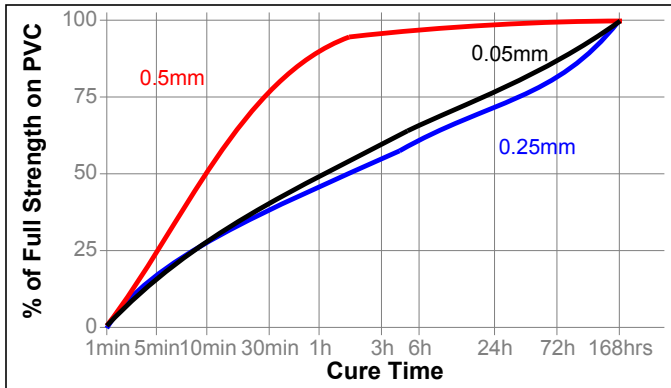
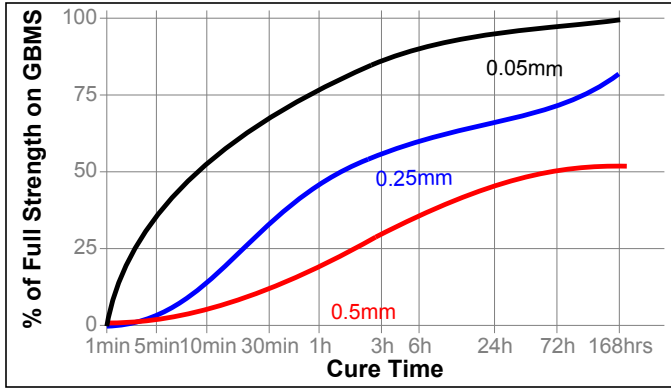


The graph below shows the shear strength developed with time on PVC lap shears and tested according to ISO 4587  
Activator Ini No.1™ or Ini No.5™ applied to one surface



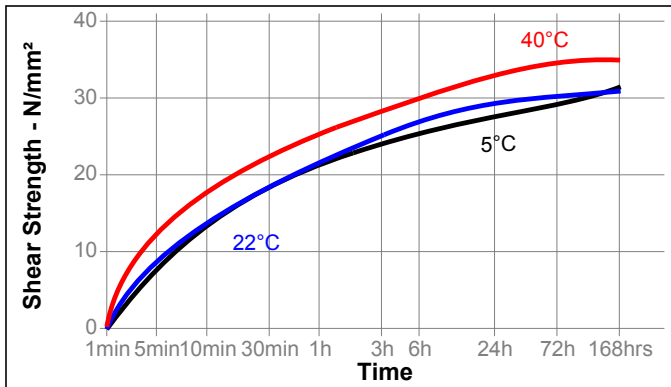
#### Cure Speed vs. Bond Gap

The rate of cure will depend on the bondline gap. The following graph shows the shear strength developed with time on grit blasted mild steel and PVC lap shears at different controlled gaps and tested according to ISO 4587. (Activator Ini No.5™ applied to one surface).



**Cure Speed vs. Temperature**

The graph below shows the shear strength developed with time on grit blasted steel lap shears activated with LOCTITE® Activator Ini No. 5™ at different temperatures and tested according to ISO 4587



**TYPICAL PERFORMANCE OF CURED MATERIAL**

**Adhesive Properties**

After 168 hours @ 22 °C, Activator Ini No.5™ on 1 side

Lap Shear Strength, ISO 4587:

|                                |                   |         |
|--------------------------------|-------------------|---------|
| Grit Blasted Mild Steel (GBMS) | N/mm <sup>2</sup> | 33      |
|                                | (psi)             | (4,760) |
| Stainless steel                | N/mm <sup>2</sup> | 16      |
|                                | (psi)             | (2,250) |
| Aluminum                       | N/mm <sup>2</sup> | 19      |
|                                | (psi)             | (2,780) |
| ABS                            | N/mm <sup>2</sup> | 6.1     |
|                                | (psi)             | (880)   |
| PVC                            | N/mm <sup>2</sup> | 11      |
|                                | (psi)             | (1,600) |
| Polycarbonate                  | N/mm <sup>2</sup> | 4.6     |
|                                | (psi)             | (670)   |
| PMMA                           | N/mm <sup>2</sup> | 5.1     |
|                                | (psi)             | (740)   |

"T" Peel Strength, ISO 11339:

|                        |                   |       |
|------------------------|-------------------|-------|
| Aluminum (Gritblasted) | N/mm <sup>2</sup> | 4.5   |
|                        | (psi)             | (650) |

After 24 hours @ 22 °C, Activator Ini No.1™ on 1 side

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

|     |                   |                    |
|-----|-------------------|--------------------|
|     | N/mm <sup>2</sup> | ≥15 <sup>LMS</sup> |
|     | (psi)             | (2,180)            |
| PVC | N/mm <sup>2</sup> | 2.2                |
|     | (psi)             | (360)              |

"T" Peel Strength, ISO 11339:

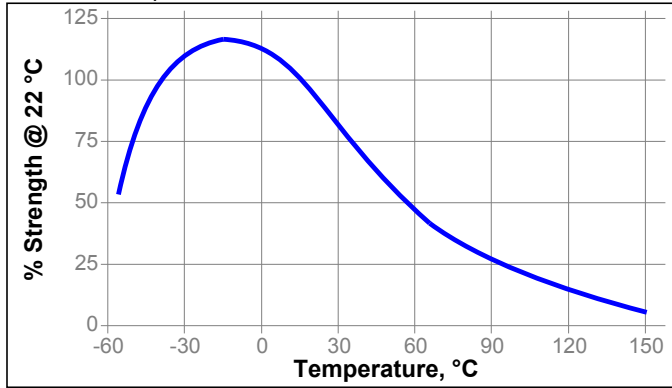
|                        |                   |                   |
|------------------------|-------------------|-------------------|
| Aluminum (Gritblasted) | N/mm <sup>2</sup> | ≥4 <sup>LMS</sup> |
|                        | (psi)             | (580)             |

**TYPICAL ENVIRONMENTAL RESISTANCE**

Cured for 1 week @ 22 °C, Activator Ini No. 5™ on 1 side  
 Lap Shear Strength, ISO 4587 N/mm<sup>2</sup> :  
 Mild steel (grit blasted)

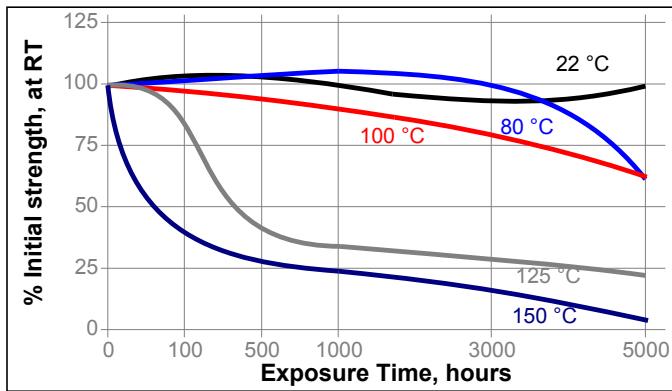
**Hot Strength**

Tested at temperature



**Heat Aging**

Aged at temperature indicated and tested @ 22 °C



**Chemical/Solvent Resistance**

Aged under conditions indicated and tested @ 22 °C

| Environment               | °C | % of initial strength |        |        |        |
|---------------------------|----|-----------------------|--------|--------|--------|
|                           |    | 100 h                 | 1000 h | 3000 h | 5000 h |
| Acetone                   | 22 | 79                    | 73     | 34     | 2      |
| ATF                       | 22 | 100                   | 92     | 71     | 88     |
| 98% RH                    | 40 | 88                    | 64     | 53     | 55     |
| Motor oil (MIL-L-46152)   | 22 | 99                    | 73     | 79     | 77     |
| Salt water solution, 7.5% | 22 | 73                    | 84     | 83     | 69     |
| Unleaded gasoline         | 22 | 92                    | 77     | 39     | 7      |
| Water                     | 60 | 71                    | 66     | 64     | 45     |
| Water                     | 90 | 62                    | 49     | 35     | 39     |
| Water/glycol 50/50        | 87 | 65                    | 73     | 42     | 39     |

**Shear Strength on Stainless Steel Lapshears**

| Environment          | °C | % of initial strength |        |        |        |
|----------------------|----|-----------------------|--------|--------|--------|
|                      |    | 100 h                 | 1000 h | 3000 h | 5000 h |
| Acetic Acid, 10%     | 22 | 100                   | 79     | 74     | 83     |
| Sodium hydroxide, 4% | 22 | 69                    | 68     | 13     | 6      |

**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. For best performance bond surfaces should be clean and free from grease.
2. To ensure a fast and reliable cure, Activator Ini No.1™ or Ini No.5™ should be applied to one of the bond surfaces and the adhesive to the other surface. Parts should be assembled within 15 minutes.
3. The recommended bondline gap is 0.1 mm. Where bond gaps are large (up to a maximum of 0.5 mm), or faster cure speed is required, Activator Ini No.1™ or Ini No.5™ should be applied to both surfaces. Parts should be assembled immediately (within 1 minute).
4. Excess adhesive can be wiped away with organic solvent.
5. Bond should be held clamped until adhesive has fixtured.
6. Product should be allowed to develop full strength before subjecting to any service loads (typically 24 to 72 hours after assembly, depending on bond gap, materials and ambient conditions).

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

LMS dated July 3, 2012. 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 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**

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

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Reference **N/A****Note:**

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