Technical Data Sheet

LOCTITE® AA 3271™

Known as LOCTITE® 3271™
December 2013

PRODUCT DESCRIPTION

LOCTITE® AA 3271™ provides the following product characteristics:

Technology	Acrylic
Chemical Type	Elastomer/methacrylate
Appearance, Resin (Component A)	Straw colored liquid[LMS]
Appearance, Hardener (Component B)	Dark green transparent liquid[LMS]
Components	Two component - requires mixing
Mix Ratio - Part A:Part B	1 : 1
Cure	Room temperature cure after mixing
Application	Bonding

LOCTITE® AA 3271™ is designed for bonding rigid assemblies . The two components are applied separately by bead-on-bead method and cure rapidly when brought into contact on assembly of the joint. Typical applications include structural bonding of small rigid parts of dissimilar materials. It is particularly suited for applications where good impact resistance is required (e.g. bonding loudspeaker ferrites to chromated plates).

TYPICAL PROPERTIES OF UNCURED MATERIAL

Part A:

Specific Gravity @ 25 °C	1.04
Flash Point - See SDS	
Viscosity, Brookfield - RVT, 25 °C, mPa·s (cP):	
Spindle 6, speed 20 rpm,	2,520 to 4,620[LMS]

Part B:

Specific Gravity @ 25 °C	1.06
Flash Point - See SDS	
Viscosity, Brookfield - RVT, 25 °C, mPa·s (cP):	
Spindle 4, speed 20 rpm	2,070 to 4,070[LMS]

TYPICAL CURING PERFORMANCE

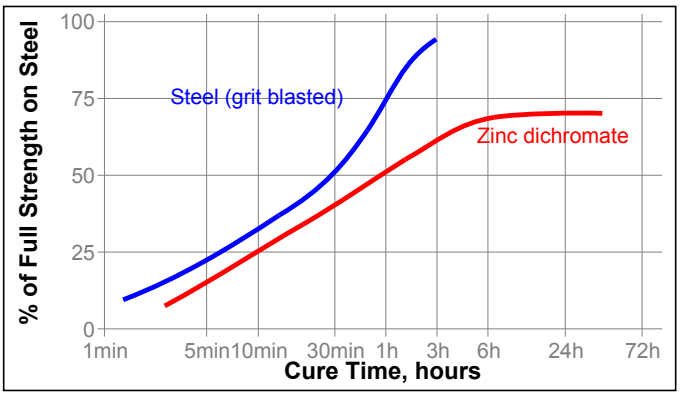
Fixture Time

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

Fixture Time, seconds:	
Steel (grit blasted)	≤130[LMS]

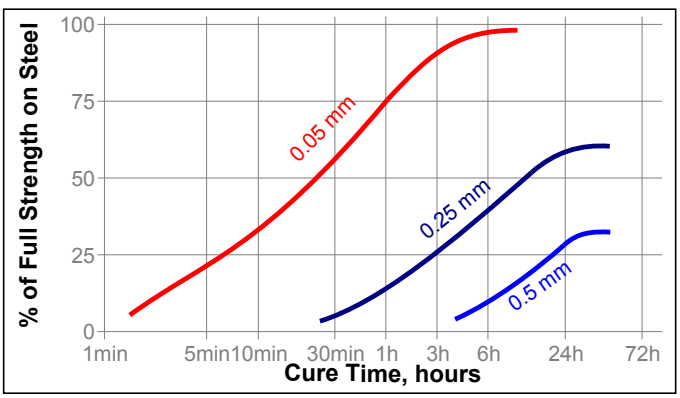
Cure Speed vs. Substrate

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



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 steel lap shears at different controlled gaps and tested according to ISO 4587.



TYPICAL PROPERTIES OF CURED MATERIAL

Physical Properties:

Coefficient of Thermal Expansion, ISO 11359-2, K^{-1}	100×10^{-6}
Coefficient of Thermal Conductivity, ISO 8302, W/(m·K)	0.1
Specific Heat, kJ/(kg·K)	0.3

TYPICAL PERFORMANCE OF CURED MATERIAL

Adhesive Properties

Cured for 24 hours @ 22 °C

Lap Shear Strength, ISO 4587:

Steel (grit blasted)	N/mm²	≥9.4[LMS]
	(psi)	(≥1,363)
Zinc dichromate	N/mm²	2.5 to 12.5
	(psi)	(360 to 1,810)

Tensile Strength, ISO 6922:

Steel (grit blasted)	N/mm²	4.5 to 17
	(psi)	(650 to 2,450)
Zinc dichromate	N/mm²	3 to 10
	(psi)	(430 to 1,450)

"T" Peel Strength, ISO 11339:

Aluminum (grit blasted)	N/mm	0.5 to 3.0
	(lb/in)	(3.0 to 17)

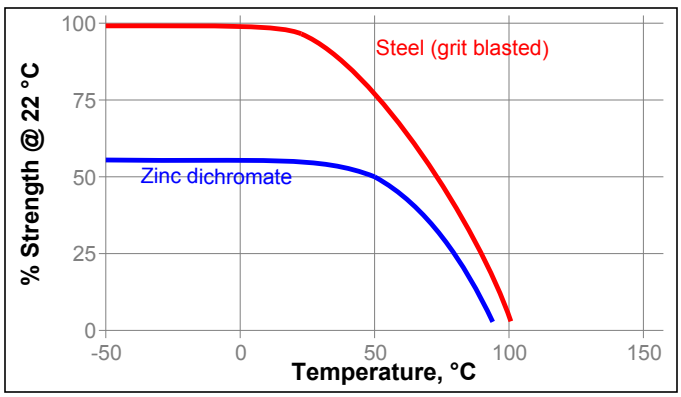
TYPICAL ENVIRONMENTAL RESISTANCE

Hot Strength

Tested at temperature

Cured for 24 hours @ 22 °C

Lap Shear Strength, ISO 4587

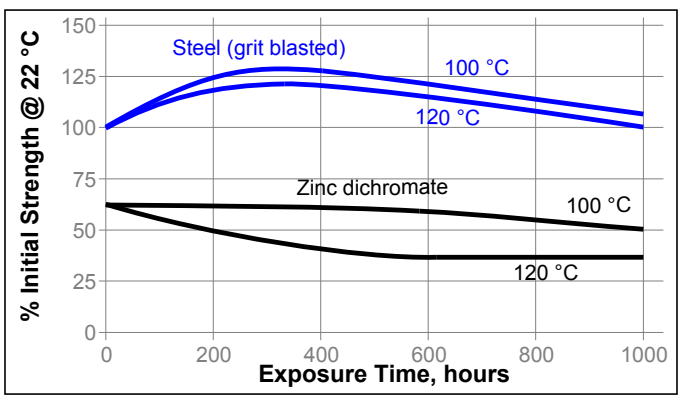


Heat Aging

Aged at temperature indicated and tested @ 22 °C

Cured for 1 week @ 22 °C

Lap Shear Strength, ISO 4587



Chemical/Solvent Resistance

Aged under conditions indicated and tested @ 22°C.

Cured for 30 minutes @ 93 °C

Lap Shear Strength, ISO 4587:

Steel (grit blasted)

		% of initial strength		
Environment	**°C**	**100 h**	**500 h**	**1000 h**
Steel (grit blasted)				
Motor oil (MIL-L-46152)	87	100	100	70
Water/glycol 50/50	87	90	80	80
Humidity, 95% RH	40	90	80	80
Zinc dichromate				
Motor oil (MIL-L-46152)	87	90	50	50
Water/glycol 50/50	87	100	40	40
Humidity, 95% RH	40	100	100	100

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. LOCTITE® AA 3271™ is applied bead-on-bead which mixes when joint is assembled.
3. Joint should be assembled within 10 seconds of adhesive application.
4. Avoid cross contamination of the two components of this product.
5. **CAUTION**: **This product should never be applied by static mixer due to very fast cure speed**.
6. Excess adhesive can be wiped away with organic solvent.
7. Bond should be held clamped until adhesive has fixtured.
8. 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[LMS]

LMS dated May 6, 1996. 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

(°C x 1.8) + 32 = °F
kV/mm x 25.4 = V/mil
mm / 25.4 = inches
µm / 25.4 = mil
N x 0.225 = lb
N/mm x 5.71 = lb/in
N/mm² x 145 = psi
MPa x 145 = psi
N·m x 8.851 = lb·in
N·m x 0.738 = lb·ft
N·mm x 0.142 = oz·in
mPa·s = 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 1.1