

Description

Loctite® AA H3151 is a sag-resistant, two component, methacrylate adhesive system formulated to bond automotive grade cold rolled steel without the use of an external primer. H3151 provides a long open time (40-60 minutes) allowing manufacturers to correctly position parts for proper alignment. This adhesive contains 5 mil glass beads to insure adequate bondline control. Loctite® AA H3151 is an easy to use 1:1 adhesive that forms resilient bonds and maintains its strength over a wide range of temperatures. It is also suitable for bonding a wide variety of plastic and metal substrates without the use of additional primer.

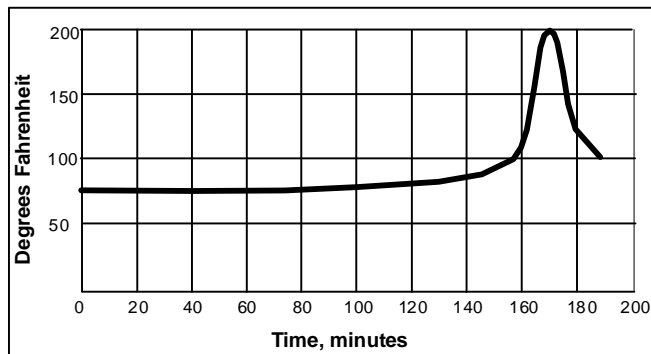
Recommended Substrates: Steel, aluminum, stainless steel, FRP and many plastics.

Features

- Long open time
- Non-sagging gaps filled to 1/2 inch
- Superior impact and peel strength
- Little or no surface preparation
- Consistent bondline thickness
- Offers excellent tolerance to off-ratio mixing
- 100% reactive
- Excellent environmental resistance
- No primer needed
- 1:1 mix ratio

Typical Uncured Properties	Part A	Part B	Mixed
Open Time @ 70°F, mins	---	---	45 to 60
Fixture Time @ 70°F, mins	---	---	60 to 120
Color	Cream	Light Yellow	Light Yellow
Viscosity, cP	60,000 to 80,000	60,000 to 80,000	---
Specific Gravity	1.01	0.96	0.99
Weight per Gallon, Lbs	8.42	8.03	8.22
Mix Ratio			
By weight	1	1	---
By volume	1	1	---

Peak Exotherm Curve -10 Gram Mass



Typical Bulk Properties	Typical Value
Tensile Strength, psi, ASTM D 638	3100 to 3300
Elongation, %, ASTM D 638	15 to 25
Modulus, psi, ASTM D 638	190,000

Performance

Tensile lap shear strength was tested per ASTM D1002 and D3163 on fully cured specimens. Aluminum is "as received" unless where noted.

Lap Shear Strength vs Test Temperature			
	Etched Aluminum	Aluminum	FRP
-40°F	3000	2100	700
-20°F	3400	2300	750
75°F	4500	3200	790
180°F	2700	2300	1100
250°F	700	300	250

Shear Strength after Environmental Exposure, psi, ASTM D 1002				
	FRP	FRP to Aluminum	Aluminum	Carbon Steel
Control	790	1100	3200	3400
Water	750	890	2200	3900
Salt Water	800	270	800	3900
Unleaded Gasoline	1000	1200	3600	3600
Diesel Fuel	790	1000	3900	4000
Motor Oil	700	1000	4000	3900

NOTE: All FRP bonds failed in Fiber Tear mode. Metal bonds failed in cohesive mode.

Shear Strength after Environmental Exposure psi Steel, ASTM D 1002		
	2 Weeks	4 Weeks
120°F/100% RH	3850	2930

Shear Strength, psi, ASTM D1002	Typical Value
Aluminum	3600
Steel	3780
Stainless Steel	3750
Zinc Dichromate	2600
Polycarbonate	690
Fiberglass	>1840
Gelcoat	>1440

Block Shear, ASTM D4501 psi	Typical Value
PVC	1890
ABS	1570

Side Impact Strength, kJ/m ² , GM9751P test	Typical value
Aluminum	30 to 35

T-peel, pli, ASTM D1876	Typical Value
Steel	40 to 50
Aluminum	10 to 20

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).

Handling and Application

Mixing: It is highly recommended that either meter mix equipment or cartridges with static mix nozzles be used to properly ratio and dispense the adhesive. For hand mixing, combine Part A and Part B in the correct ratio and mix thoroughly. Once mixed, Loctite® AA H3151 should achieve a uniform color. This is important! 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: Bonding surfaces should be clean, dry, and free of contamination. Extensive surface preparation is not required for Loctite® AA H3151, and good bonds can be formed on most substrates after a solvent wipe. To assure maximum bond strength, surfaces must be mated within the adhesive's open time. Use enough material to completely fill the joint when parts are clamped.

Curing: Parts should remain undisturbed during the interval between the adhesive's open time and fixture time. After the fixture time is achieved the material has reached handling strength. Cure temperatures below room temperature (70°F - 75°F) will slow the fixturing time. Temperatures above room temperature will shorten the open time and the fixturing time.

Clean Up: It is important to clean up excess adhesive from the work area and application equipment before it cures. Denatured alcohol and many common industrial solvents are suitable for removing uncured adhesive. Loctite® AA H3151 is flammable. Keep containers tightly closed after use. Keep away from heat, sparks, and open flames.

Storage

Loctite® AA H3151 should be stored in unopened containers in a dry location at 40°F +/- 5 F. For further specific shelf life information, contact your local Technical Service Center.

Data Ranges

The data contained herein may be reported as a typical value and/or range. Values are based on actual test data and are verified on a periodic basis.

Note

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