

# 1321 High Performance Epoxy Structural Adhesive

1321 High performance epoxy structural adhesive is a one-part heat-resistant epoxy adhesive. It has super high shear strength, high thixotropy, high T-peel strength and low shrinkage. It is suitable for bonding with high demands on high bonding strength; It can be used for bonding of many materials, such as magnetic steel, metal, stone, wood, ceramics and other materials.

<b>Technology / Base</b>	Epoxy
<b>Type of Product</b>	Adhesive
<b>Components</b>	One component
<b>Curing</b>	Heat curing
<b>Appearance / Color</b>	Gray
<b>Consistency</b>	Paste

- Features and Benefits**
- Single component, easy to operate
  - High thixotropy
  - Heat resistance
  - High bonding strength
  - High T-peel strength

**Curing Profile**

Recommended curing schedule:

- 30 mins@150°C
- or
- 50 mins@120°C

Contact HB Fuller technical support for additional curing recommendations.

months. Lower temperature can extend the storage time; the ideal storage is below 0°C.

**Typical Packaging**

Stock No.	Unit Size
13210205	310 mL
13210206	1 kg
13210207	4.5 kg
13210215	5 gal

- Application Instructions**
- Proper surface preparation is essential to the success of any epoxy application. In all cases the surface should be clean, dry, free from oils, and rough.
- Clean and abrade application surface. Sandblast or grind for better adhesion.
  - All abrasive preparation should be followed by another cleaning to remove any remnants from the surface.
  - Cover mixed material over the prepared surface firmly to ensure maximum surface contact.
  - Thickness: Ensure the surface of the object have no lack of adhesive layer, the best thickness is 0.05~0.20 mm, heat at 120°C or 150°C for appropriate time for curing.

**Disposal Advice**

Please refer to the MSDS for disposal instructions.

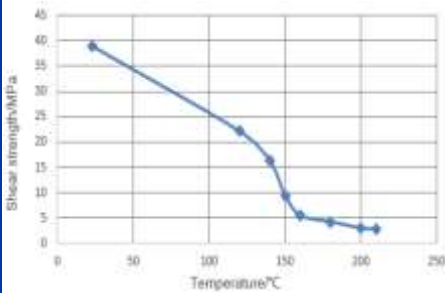
**Safety Advice**

Please refer to the MSDS for safety advice.

**Storage Conditions**

Stored in unopened containers in a cool, dry area at a temperature at 2~8°C with the shelf life of 6

Technical Data

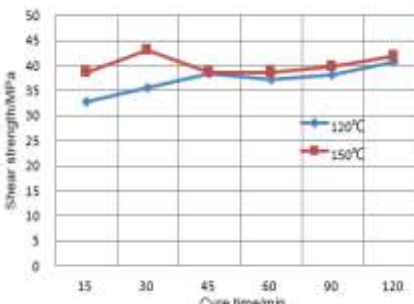
Rheology	Value	Condition/Method
Viscosity	640,000/410,000mPa • s (23°C)	Brookfield Viscometer DV2T, 0.1/1 rpm
Thixotropic Index	1.56 (23°C)	Brookfield Viscometer DV2T, 0.1/1 rpm
<b>Density</b>		
Density	1.17 g/cm <sup>3</sup>	
<b>Curing</b>		
Cure Schedule	30 mins@150°C or 50 mins@120°C	
<b>Cured Mechanical Properties</b>		
Lap Shear Strength (30 mins @150°C)		GB/T 7124 (IDT ISO 4587)
Carbon Steel, Sandblasted	37.2 MPa	
Carbon Steel	30.1 MPa	
Al, 3 mm, Anodic Treatment	17.4 MPa	
Nickel Plated Steel	27.3 MPa	
Stainless Steel	34.5 MPa	
Galvanized Steel	27.6 MPa	
FR4	19.1 MPa	
CFRP	23.2 MPa	
T-peel Strength		
Al, 0.5 mm, Anodic Treatment	5.2 N/mm	GB/T 2791 (re. ISO 11339)
Impact strength	34.5 kJ/m <sup>2</sup>	GB/T 6328 (IDT ISO 9653)
Breakdown Voltage	34.2 kV/mm	GB/T 1695 (NEQ ASTM D149-97a)
Volume Resistivity	4.16*10 <sup>15</sup> Ω .cm	GB/T 1410 (IEC 60093:1980, IDT)
Surface Resistivity	3.82*10 <sup>15</sup> Ω .cm	GB/T 1410 (IEC 60093:1980, IDT)
<b>Thermal Indication</b>		
Lap Shear Strength		GB/T 7124 (IDT ISO 4587)
Carbon Steel, Sandblasted		
		
Glass Transition Temperature (DSC)		GB/T 19466.2(IDT ISO 11357-2)
Thermal Service Range		

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<p><b>Curing curve</b> Lap Shear Strength Carbon Steel, Sandblasted</p>		<p>GB/T 7124 (IDT ISO 4587)</p>
<p><b>Solvent Resistance</b></p> <ul style="list-style-type: none"> <li>10% H<sub>2</sub>SO<sub>4</sub> (23°C)</li> <li>40% H<sub>2</sub>SO<sub>4</sub> (23°C)</li> <li>10% H<sub>3</sub>PO<sub>4</sub> (23°C)</li> <li>10% HNO<sub>3</sub> (23°C)</li> <li>10% CH<sub>3</sub>COOH (23°C)</li> <li>10% NaOH (23°C)</li> <li>10% NaClO (23°C)</li> <li>10% Na<sub>2</sub>CO<sub>3</sub> (23°C)</li> <li>10% NaCl (23°C)</li> <li>H<sub>2</sub>O (23°C)</li> <li>Acetone (23°C)</li> <li>Kerosene (23°C)</li> <li>Methylbenzene (23°C)</li> <li>Methyl chloroform (23°C)</li> </ul>	<ul style="list-style-type: none"> <li>Good</li> <li>Good</li> <li>General</li> <li>Excellent</li> <li>Poor</li> <li>Excellent</li> <li>Excellent</li> <li>Excellent</li> <li>Excellent</li> <li>Excellent</li> <li>General</li> <li>Excellent</li> <li>Excellent</li> <li>Poor</li> </ul>	<p>JB/T 10283</p>
<p><b>Aging Property</b> LSS after Thermal Aging (1000h)</p> <ul style="list-style-type: none"> <li>Carbon Steel, Sandblasted, 60°C</li> <li>Carbon Steel, Sandblasted, 100°C</li> <li>Carbon Steel, Sandblasted, 120°C</li> <li>Carbon Steel, Sandblasted, 150°C</li> <li>Carbon Steel, Sandblasted, 180°C</li> </ul>	<ul style="list-style-type: none"> <li>36.1 MPa</li> <li>35.5 MPa</li> <li>35.2 MPa</li> <li>32.3 MPa</li> <li>24.4 MPa</li> </ul>	<p>GB/T 7124 (IDT ISO 4587)</p>

SF=base material damage, rupture or yield

Date Modified: 27/1/2021

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