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.

Technology / Base	Epoxy
Type of Product	Adhesive
Components	One component
Curing	Heat curing
Appearance / Color	Gray
Consistency	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℃
  or
- 50 mins@120℃

Contact HB Fuller technical support for additional curing recommendations.

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℃ or 150℃ for appropriate time for curing.

Storage Conditions

Stored in unopened containers in a cool, dry area at a temperature at 2~8℃ with the shelf life of 6 months. Lower temperature can extend the storage time; the ideal storage is below 0℃.

Typical Packaging

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

Disposal Advice

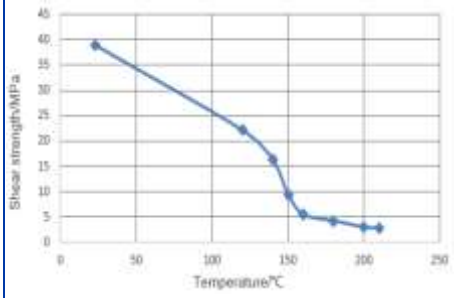
Please refer to the MSDS for disposal instructions.

Safety Advice

Please refer to the MSDS for safety advice.

Technical Data Sheet

Technical Data

Rheology	Value	Condition/Method
Viscosity	640,000/410,000mPa • s (23℃)	Brookfield Viscometer DV2T, 0.1/1 rpm
Thixotropic Index	1.56 (23℃)	Brookfield Viscometer DV2T, 0.1/1 rpm
Density		
Density	1.17 g/cm^3	
Curing		
Cure Schedule	30 mins@150℃ or 50 mins@120℃	
Cured Mechanical Properties		
Lap Shear Strength (30 mins @150℃)		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^2	GB/T 6328 (IDT ISO 9653)
Breakdown Voltage	34.2 kV/mm	GB/T 1695 (NEQ ASTM D149-97a)
Volume Resistivity	4.16*10^{15} Ω.cm	GB/T 1410 (IEC 60093:1980, IDT)
Surface Resistivity	3.82*10^{15} Ω.cm	GB/T 1410 (IEC 60093:1980, IDT)
Thermal Indication		
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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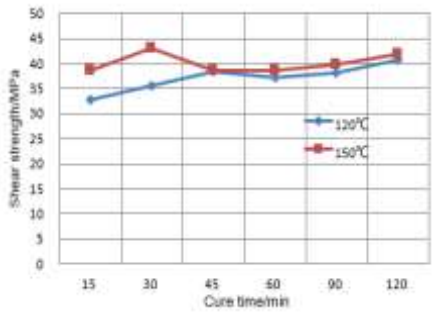
Curing curve Lap Shear Strength Carbon Steel, Sandblasted		GB/T 7124 (IDT ISO 4587)
Solvent Resistance		JB/T 10283
10% H_2SO_4 (23℃)	Good	
40% H_2SO_4 (23℃)	Good	
10% H_3PO_4 (23℃)	General	
10% HNO_3 (23℃)	Excellent	
10% CH_3COOH (23℃)	Poor	
10% NaOH (23℃)	Excellent	
10% NaClO (23℃)	Excellent	
10% Na_2CO_3 (23℃)	Excellent	
10% NaCl (23℃)	Excellent	
H_2O (23℃)	Excellent	
Acetone (23℃)	General	
Kerosene (23℃)	Excellent	
Methylbenzene (23℃)	Excellent	
Methyl chloroform (23℃)	Poor	
Aging Property		
LSS after Thermal Aging (1000h)		GB/T 7124 (IDT ISO 4587)
Carbon Steel, Sandblasted, 60℃	36.1 MPa	
Carbon Steel, Sandblasted, 100℃	35.5 MPa	
Carbon Steel, Sandblasted, 120℃	35.2 MPa	
Carbon Steel, Sandblasted, 150℃	32.3 MPa	
Carbon Steel, Sandblasted, 180℃	24.4 MPa	

SF=base material damage, rupture or yield

Date Modified: 27/1/2021

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