

## TECHNICAL DATA SHEET

as of 9/22/09

### DESCRIPTION

IQ Glue is a single-component, high-performance elastomeric adhesive that can be used for many different bonding or sealing applications. IQ Glue is made of a unique, silyl-based elastomeric polymer that provides flexibility, water and chemical resistance, and strong adhesion. This adhesive begins curing once exposed to ambient moisture in the air and sets in approximately 20 minutes at room temperature. IQ Glue is also odor-free and does not contain harmful isocyanates or solvents. No mixing or special handling is required.

This adhesive will retain its original form while curing and does not shrink or expand. Once cured, IQ Glue can withstand outdoor and chemical exposure. IQ Glue can also act as a permanent pressure sensitive adhesive if applied to both surfaces and given 7 minutes at room temperature to get tacky.

IQ Glue comes in both clear gel and white paste versions.

### APPLICATIONS

IQ Glue can be used to bond a variety of substrates including most metals, ceramics, wood, glass, plastics and foams. Its flexibility and weather resistant properties make it suitable for applications such as bonding, sealing, noise & vibration dampening, and potting. Also, because IQ Glue is free of low molecular cyclic siloxanes, it has significant advantages over silicone adhesives for electronics applications.

IQ Glue is also flexible. This gives the adhesive good peel strength, impact resistance, and vibration dampening properties. It also makes IQ Glue a high-adhesion sealant.

This adhesive is unique in that it goes through a pressure-sensitive (tacky) stage about 7 minutes after exposure to ambient moisture. Thus if applied to both substrates, IQ glue can be used without the aid of jigs or temporary fasteners if left to become tacky prior to the assembly process.

NOTE: Test on samples first to determine suitability of product for application.

### DIRECTIONS FOR USE

1. **Prepare surfaces.** Remove any rust, oil, dirt, dust, and grease and clean your surfaces with a solvent such as isopropyl alcohol, depending on the substrate. For highest bond strength, abrade surface with sandpaper or emery cloth and clean surface again.
2. **Choose one of two application methods:**
  - a. **One-sided method.** If applying adhesive to just one surface, then apply a thin, uniform layer of adhesive to one surface. We recommend using a blade applicator like a wooden tongue depressor or metal putty knife. Join both surfaces together within 5 minutes. Fix pieces together with mild pressure or clamping if possible.
  - b. **Two-sided method (Pressure Sensitive Method):** If greater initial hold strength is required, then apply a thin uniform layer of adhesive to both surfaces. We recommend

using a blade applicator like a wooden tongue depressor or metal putty knife. Allow adhesive to set up for 7-20 minutes (@73°F and 50% relative humidity) until it becomes tacky. Then join the two surfaces together with mild pressure. Do not allow adhesive to setup for more than 20 minutes, because the top layer will begin to cure and lose its adhesion ability. If this occurs, wait an additional 15 minutes and reapply adhesive.

3. **Let Cure.** Allow adhesive to cure. Sets in approximately 30 minutes and full cure is 24 hours. For bondline thickness greater than 1/16th of an inch (1.6 mm), the bond can become stronger over the course of 7 days, depending on the thickness and if the bondline is not stressed.
4. **Handling.** After use, clean off excess adhesive from tube opening with dry rag or towel. Tighten cap firmly to create air tight seal. Keep out of reach of children. Store sealed adhesive in dry, dark area away from direct sunlight where a consistent temperature and low relative humidity are maintained (50-77°F, <40% relative humidity).
5. **Shelf life.** Shelf life is 12 months from time of purchase.

**TYPICAL PROPERTIES**

The following properties are typical results and not product specifications:

**Uncured Material**

Properties	Amount
Appearance	Transparent (gel) or White (paste)
Viscosity (cP) (approx.)	100,000 cP (gel) or 250,000 cP (paste)
Tack free time	7 minutes
Specific gravity	1.39 (gel)

**Cured Material (tested at 73°F, 50% relative humidity, 7 days)**

Property	Amount
Tensile strength	856 psi
Elongation	280%
Hardness	44 A
Curing Shrinkage	2.5% (gel)
Glass-Transition	-67°F
Thermal Conductivity	.28 W/( m•K)
Linear Expansion Coefficient	218 m/m.K x 10 <sup>-6</sup> at 68°F

**Cured Material - Electrical Properties**

Property	Amount
Volumetric resistivity	5.0 x 10 <sup>10</sup> Ω•m
Surface resistivity	1.2 x 10 <sup>12</sup> Ω

**Cured Material – Lap shear strength (tested at 73°F, 50% relative humidity, 7 days)**

Substrate	Value (psi)	Failure Type
Aluminum	957	cohesive
Steel	783	cohesive
Stainless Steel	638	cohesive
Copper	652	cohesive
Acryl	681	cohesive
Polyphenylene oxide (PPO)	725	cohesive
ABS	420	cohesive

Nylon 66	740	cohesive
Polycarbonate	812	cohesive
Polystyrene	508	adhesive
Hard PVC	479	cohesive
Polyester	696	cohesive
Polyethylene terephthalate (PET)	304	adhesive
Phenol Resin	769	cohesive
Polyphenylene sulfide (PPS)	218	adhesive
Polybutylene terephthalate (PBT)	203	adhesive
Plywood	638	cohesive
Glass	827	cohesive

**Cured Material - T- Peel Strength** (tested at 73 °F, 50% RH, 7 days, 5 minute open time)

Substrate	Value (pli)	Failure Type
Aluminum	14.3	cohesive
Canvas	10.3	cohesive
Nitrile Butadiene Rubber (NBR)	9.1	cohesive
Chloroprene Rubber (CR)	8.0	adhesive
Styrene Butadiene Rubber (SBR)	8.0	cohesive
Natural Rubber (NR)	10.3	cohesive
EPDM Rubber	4.7	adhesive
Silicone Rubber	1.7	cohesive

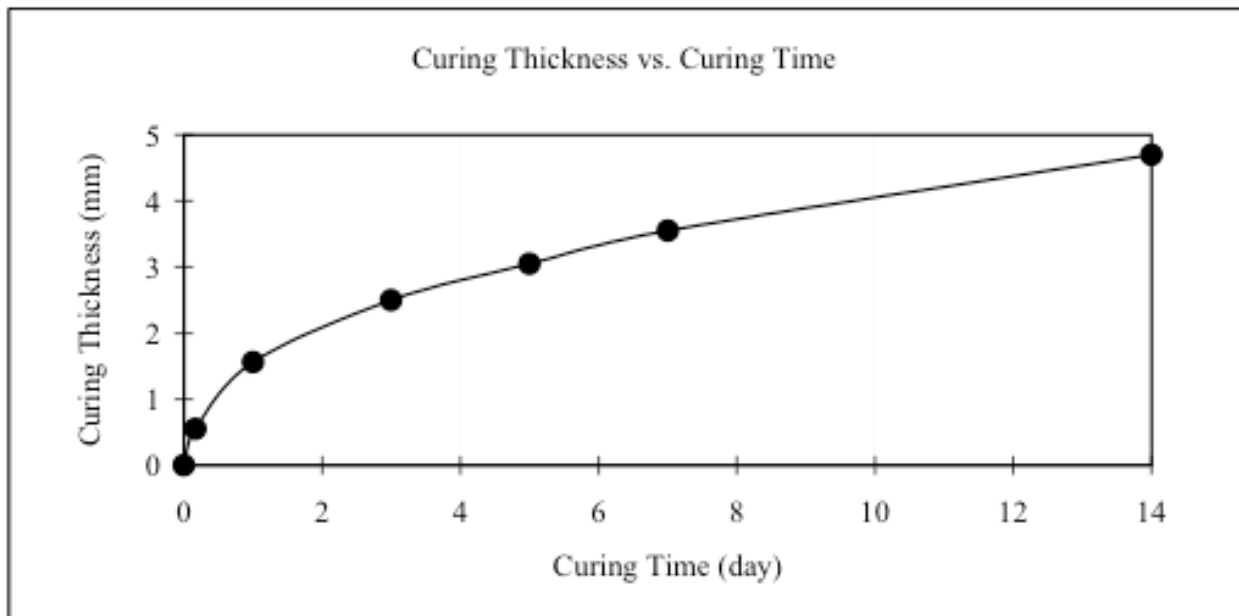
**Cured Material - Chemical Resistance**

Chemical	Volume Change	Shear Strength Change	Elongation Change	Hardness Change
Potassium Hydroxide 10%	-2.5%	-25%	3.6%	-23%
Sulfuric Acid 10%	-1.4%	-37%	-32%	-9%

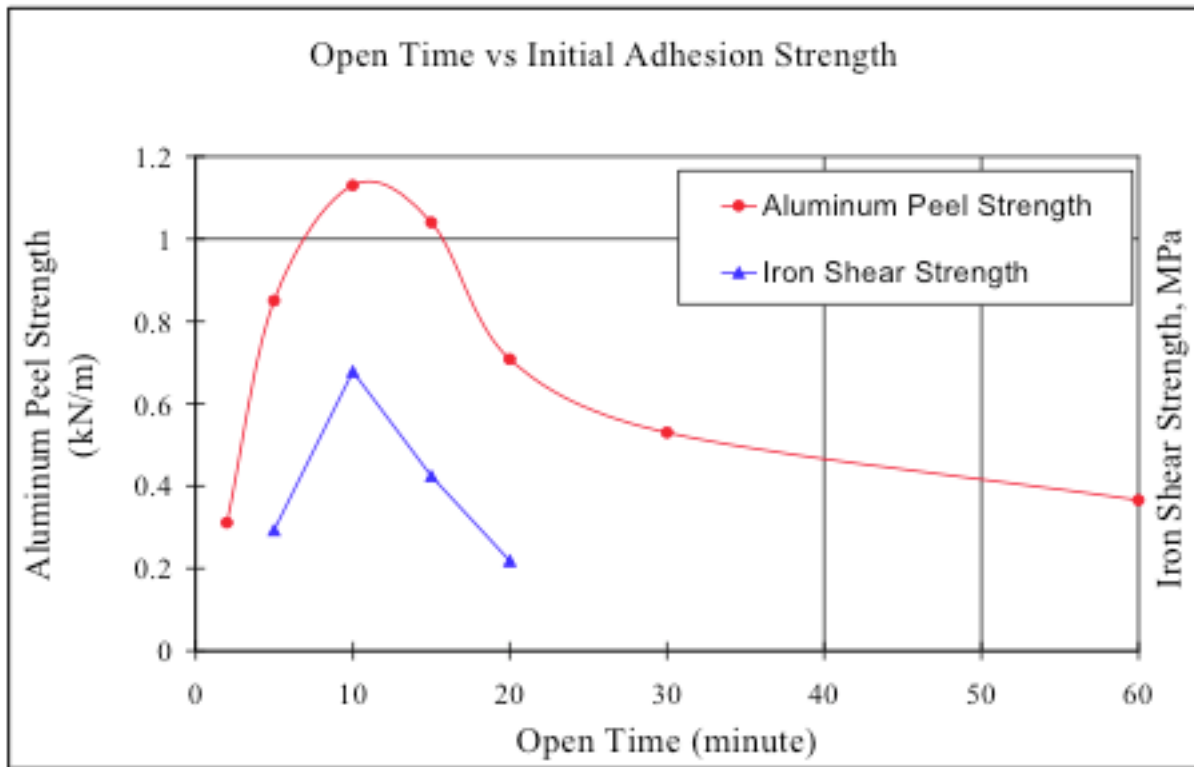
**Note:** Cured adhesive was cut into dumbbell sample pieces and immersed in the chemical solution for 7 days at temperatures under 104°F. The pieces were then wiped off and tested immediately.

**Performance Graphs**

**Curing Rates Based on Bond Thickness** (at 73 °F with 50% relative humidity)

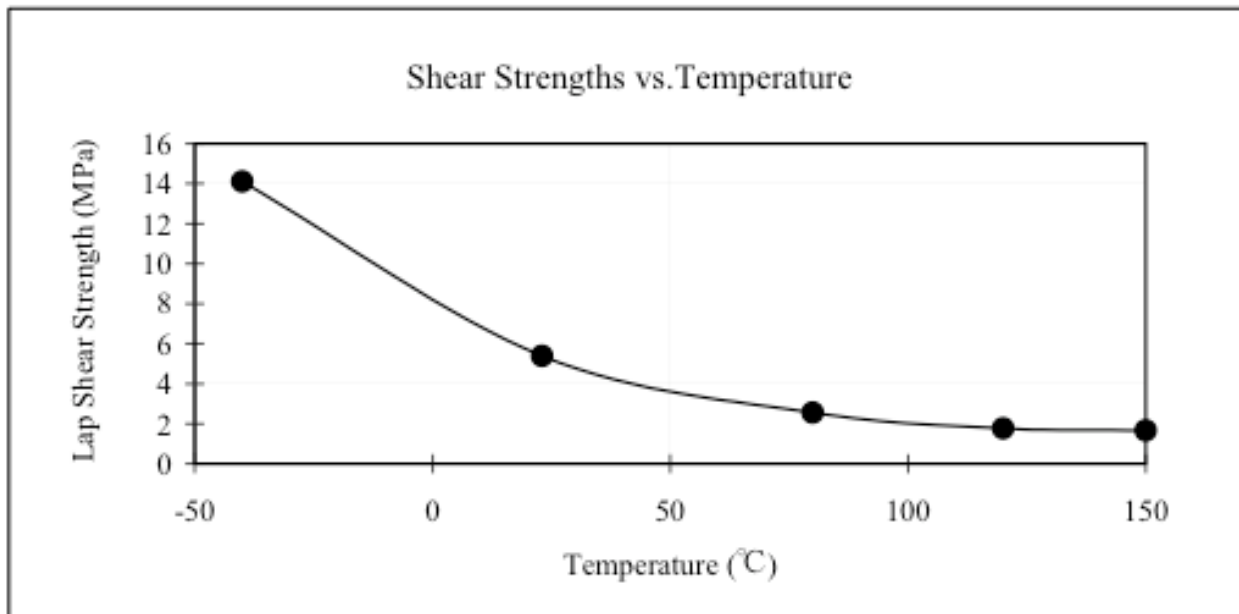


Open Time and Initial Adhesion



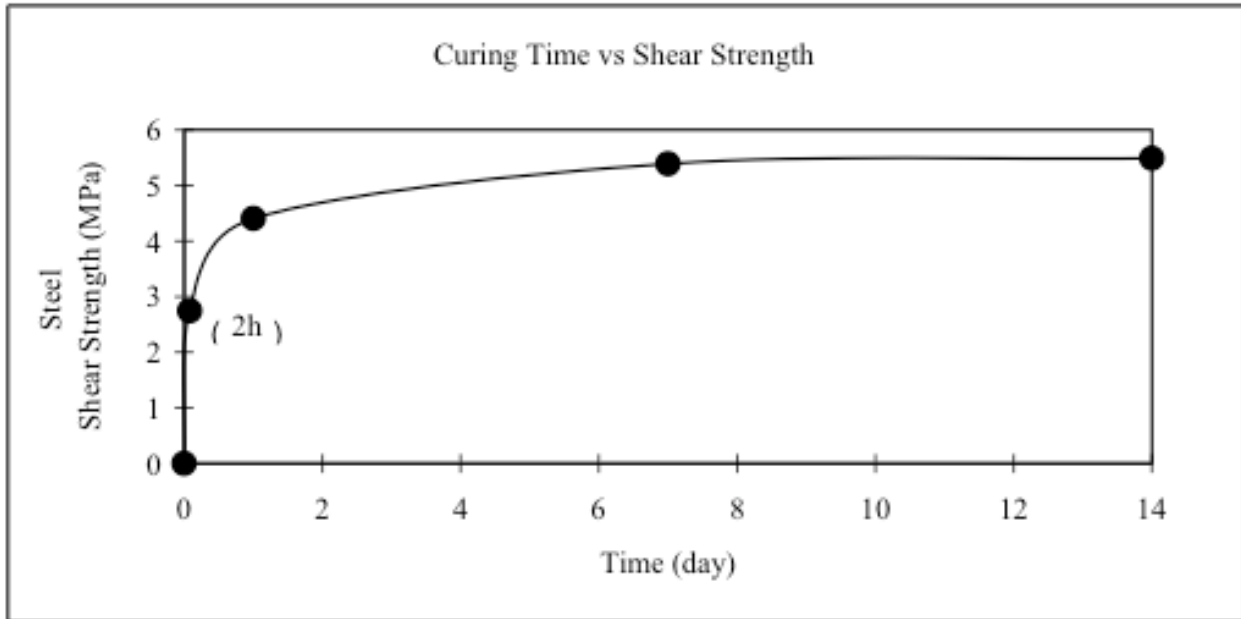
Note: Adhesive was applied to samples, and joined together after varying open time.

Shear Strength at Different Temperatures



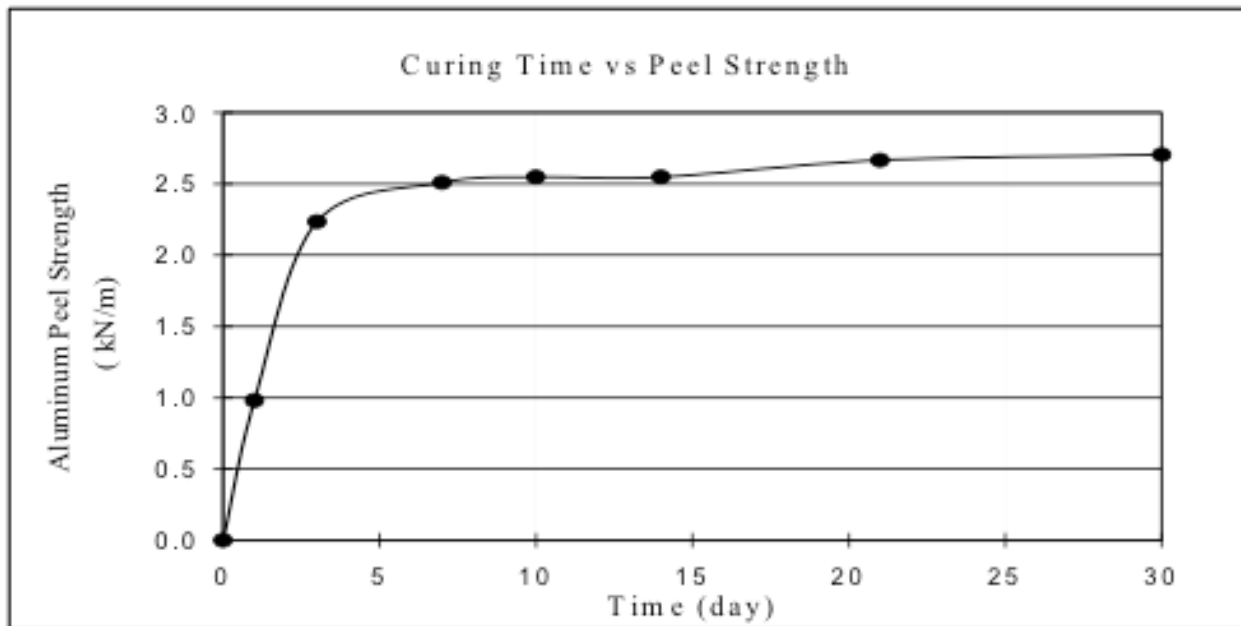
Note: Steel samples were cleaned with xylene; 5 min. open time; adhesive cured for 7 days at 73 °F at 50% relative humidity.

Shear Strength Based on Curing Time



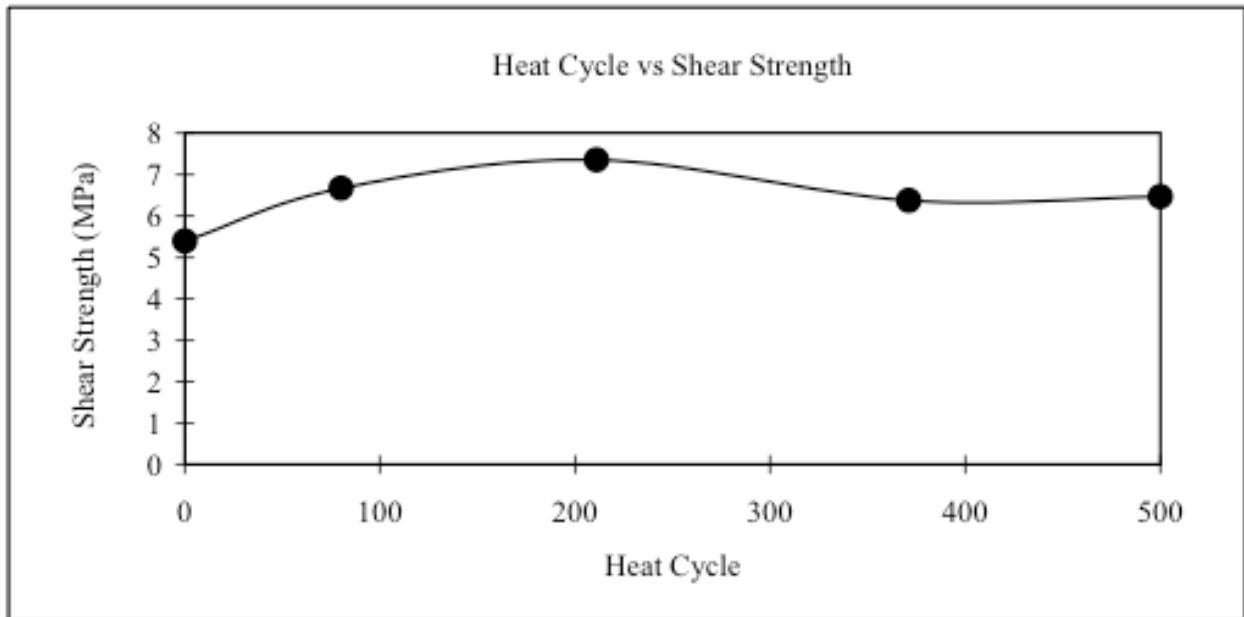
**Note:** Steel samples were cleaned with xylene; 5 min. open time; adhesive cured at 73°F at 50% relative humidity.

Shear Strength Based on Curing Time



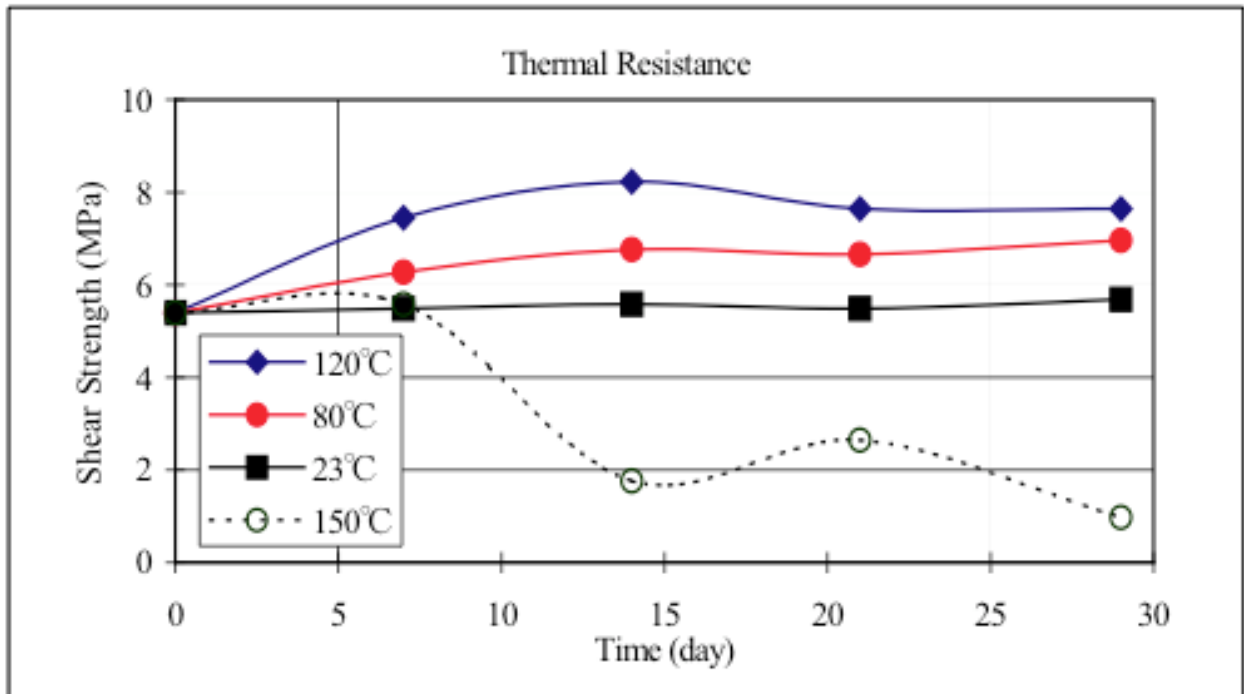
**Note:** Aluminum samples were cleaned with xylene; 5 min. open time; adhesive cured for 7 days at 73°F at 50% relative humidity.

Heat Cycle Aging Test



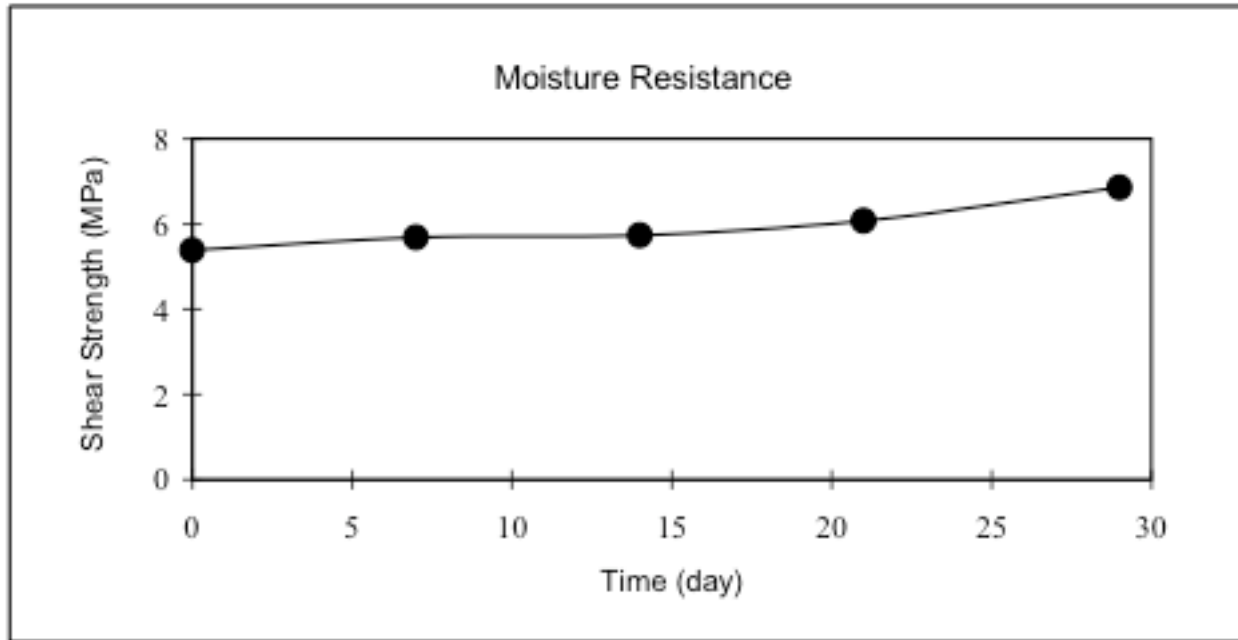
**Note:** Steel samples were cleaned with xylene; 5 min. open time; adhesive cured for 7 days at 73 °F at 50% relative humidity. The samples were then exposed to cycles of -40°F for 1 hour, and then 300 °F for 1 hour.

Thermal Resistance



**Note:** Steel samples were cleaned with xylene; 5 min. open time; adhesive cured for 7 days at 73 °F at 50% relative humidity.

**Moisture Resistance**



**Note:** Steel samples were cleaned with xylene; 5 min. open time; adhesive cured for 7 days at 73 °F at 50% relative humidity. The samples were then placed in a humidity chamber for 28 days at 185 °F and at 85% relative humidity.

**OTHER INFORMATION**

**HEALTH AND SAFETY INFORMATION:**

Refer to Product Label and Material Safety Data Sheet for health and safety information before using this product. Also, for additional information, please visit the website at [www.adhesive.com](http://www.adhesive.com).

**LIMITATION OF REMEDIES AND LIABILITY:**

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