V-AW 106A / V-HV 953 B

Two Component Epoxy Paste Adhesive, Resin V-AW 106A / Hardener V-HV 953 B

KEY PROPERTIES

Multi purpose
Long working life
Low shrinkage
Good resistance to dynamic loading
Bonds a wide variety of materials in common use

DESCRIPTION

AW 106 / Hardener HV 953 B is a multipurpose, two component, room temperature curing, paste adhesive of high strength and toughness.
It is suitable for bonding a wide variety of metals, ceramics, glass, rubber, rigid plastics and most other materials in common use. It is a versatile adhesive for the craftsman as well as most industrial applications.

PROCESSING

Pretreatment
The strength and durability of a bonded joint are dependant on proper treatment of the surfaces to be bonded. At the very least, joint surfaces should be cleaned with a good degreasing agent such as acetone, iso-propanol (for plastics) or other proprietary degreasing agents in order to remove all traces of oil, grease and dirt.
Low grade alcohol, gasoline (petrol) or paint thinners should never be used.
The strongest and most durable joints are obtained by either mechanically abrading or chemically etching (pickling) the degreased surfaces. Abrading should be followed by a second degreasing treatment.

Application of adhesive
The resin/hardener mix may be applied manually or robotically to the pretreated and dry joint surfaces. Huntsman's technical support group can assist the user in the selection of an suitable application method as well as suggest a variety of reputable companies that manufacture and service adhesive dispensing equipment.
A layer of adhesive 0.05 to 0.10 mm thick will normally impart the greatest lap shear strength to the joint. Huntsman stresses that proper adhesive joint design is also critical for a durable bond. The joint components should be assembled and secured in a fixed position as soon as the adhesive has been applied.

Equipment maintenance
All tools should be cleaned with hot water and soap before adhesives residues have had time to cure. The removal of cured residues is a difficult and time-consuming operation.
If solvents such as acetone are used for cleaning, operatives should take the appropriate precautions and, in addition, avoid skin and eye contact.

TYPICAL CURED PROPERTIES

Unless otherwise stated, the figures given below were all determined by testing standard specimens made by lap-jointing 114 x 25 x 1.6 mm strips of aluminium alloy. The joint area was 12.5 x 25 mm in each case.

STORAGE

Velure AW 106 and Hardener HV 953 B may be stored for up to 6 years provided the components are stored in sealed containers. The expiry date is indicated on the label.

HANDLING PRECAUTIONS

Our products are generally quite harmless to handle provided that certain precautions normally taken when handling chemicals are observed. The uncured materials must not, for instance, be allowed to come into contact with foodstuffs or food utensils, and measures should be taken to prevent the uncured materials from coming in contact with the skin, since people with particularly sensitive skin may be affected. The wearing of impervious rubber or plastic gloves will normally be necessary; likewise the use of eye protection. The skin should be thoroughly cleansed at the end of each working period by washing with soap and warm water. The use of solvents is to be avoided. Disposable paper - not cloth towels - should be used to dry the skin. Adequate ventilation of the working area is recommended.

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TYPICAL PROPERTIES

Property	Test Method	Resin	Hardener
Color/appearance	Visual	Creamy, viscous/liquid	Amber Liquid
Specific Gravity	ASTM D-792	1.17	0.92
Viscosity (cP) @ 77°F (25°C)	ASTM D-2393	50,000	35,000

TYPICAL MIXED PROPERTIES

Property	Test Method	Test Values
Reaction Ratio (by weight)	-	100R/80H
Reaction Ratio (by volume)	-	100R/100H
Pot Life, hours @ 77°F (25°C) (4 fl. oz. mass)	ASTM D-2471	2
Mixed viscosity (cP) @ 77°F (25°C)	ASTM D-2393	45,000

RECOMMENDED CURE SCHEDULES

Temperature	Handling Strength	Minimum Cure Time
68°F (20°C)	12 hours	15 hours
77°F (25°C)	7 hours	12 hours
104°F (40°C)	2 hours	3 hours
158°F (70°C)	30 minutes	50 minutes
212°F (100°C)	6 minutes	10 minutes
302°F (150°C)	4 minutes	5 minutes

CHEMICAL RESISTANCE - EFFECT OF IMMERSION

Media	Test Values psi (MPa)
Standard - As prepared	2560 (17.6)
Acetone (30 days)	570 (3.9)
Acetylene	430 (2.9)
Gasoline	2410 (16.6)
Ethyl Acetate (30 days)	570 (3.9)
Acetic Acid 10%	Degraded
Methanol	Degraded
Lubricating Oil - HD30	2560 (17.6)
Kerosene	Degraded
Trichloroethylene	Degraded
Water @ 68°F (20°C)	1420 (9.8)
Water @ 194°F (90°C)	430 (2.9)

LAP SHEAR STRENGTH ON METAL SUBSTRATES

Metal	Substrate Thickness (in/mm)	Test Values psi (MPa)
Carbon Steel	0.039/1.0	3840 (26.4)
Stainless Steel	0.039/1.0	3270 (22.5)
Galvanized Steel	0.06/1.5	1990 (13.7)
Copper	0.06/1.5	3270 (22.5)
Brass	0.06/1.5	2990 (20.6)