



Sole UK Distributors Of  
**REINHARDT-TECHNIK**  
Metering, Mixing &  
Dispensing Systems



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## Technical Data Sheet

### **PENLOC 1:1 VT (VERY THICK TWO COMPONENT TOUGHENED ACRYLIC ADHESIVE)**

#### **ADVANTAGES**

1. Rapid Bonding. Setting time to handling strength is 10 to 15 minutes @ 22°C. Quick curing time shortens manufacturing timescales and improves productivity.
2. High Bonding Strength. Bonds strongly to various metals such as steel, stainless steel and aluminium as well as ceramics, FRP, etc. and achieves high bonding strength (lap-shear strength, T-peel strength and impact strength).
3. Versatility. Can bond almost any combination of different materials such as steel and stainless steel, or FRP which cannot normally be welded together as well as engineering plastics such as ABS, Acrylic and rigid PVC.
4. For best results surfaces should be abraded with medium grit emery paper, cleaned with Isopropyl alcohol and allowed to dry before bonding. **DO NOT** use methylated spirits or white spirits to clean substrates, as these will degrade the adhesive over time leading to subsequent bond failure.

#### **PHYSICAL PROPERTIES (LIQUID STATE)**

	Component A	Component B
Composition	Modified Acrylate	Modified Acrylate
Colour	Off white	Off white
Specific Gravity	1.01	0.97
Viscosity @ 30°C (mPas)		
BM type 4 rotor, 60 rpm	40,000	40,000
Thixotropic index (T.I.)		
6 rpm/12 rpm	1.04	1.04

#### **PHYSICAL PROPERTIES (CURED STATE)**

Hardness (Shore D)	50
Elongation (%)	50-75
Tensile strength	250-300 Kg/cm <sup>2</sup>
Service temperature	-40° to +120°C

## **PENLOC 1:1 VT (Cont)**

### **VISCOSITY IN VARIOUS TEMPERATURES**

BM type viscometer

Rotor: No. 4 Rotation: 60 rpm

Unit: mPas

Temperature	0°C	10°C	20°C	30°C	40 °C
Component A	68,000	61,000	53,000	40,000	24,000
Component B	68,000	61,000	53,000	40,000	24,000

### **SETTING TIME AT VARIOUS TEMPERATURES**

Substrate: Steel

Temperature	0°C	10°C	20°C	30°C
Setting time (minutes)	10,0 - 20,0	7.0 - 15.	5,0 - 10.0	3.0 - 5.0

### **CHEMICAL RESISTING PROPERTY TEST**

After 24 hours of bonding, immerse bonded test specimens in chemicals at room temperature for 7 hours and later measure lap-shear strength at 23°C.

Test specimens: Aluminium / Aluminium

Surface treatment of test specimens: Sandblasted and wiped with acetone

Resisting property (%) =  $\frac{\text{Strength after immersion test}}{\text{Strength before test}} \times 100$

Lap-shear strength before immersing in chemicals: 20 N/mm<sup>2</sup>

Lap-shear strength	Resisting property (N/mm <sup>2</sup> )	(%)
Acetone	2	10
Toluene	7	35
Machine oil	17	85
Ethyl acetate	3	15
Methanol	2	10
Gasoline	18	90

## **PENLOC 1:1 VT (Cont)**

### **WATER AND HUMIDITY RESISTANCE**

After 24 hours of bonding, immerse bonded test specimens in water at 40°C for water resistance and 45°C x 95% RH for humidity resistance respectively for specified days and later measure lap-shear strength at 23°C.

Test specimens: Aluminium / Aluminium

Surface treatment of test specimens: Sandblasted and wiped with acetone

Unit: N/mm<sup>2</sup>

Duration (days)	0	7	30
Water resistance (N/mm <sup>2</sup> )	21	7	4
Humidity resistance (N/mm <sup>2</sup> )	21	14	11

### **PRECAUTIONS IN HANDLING**

1. Do not use near fire. Contains acrylic monomer. Workshop should be well ventilated.
2. Store in a cool and dark place or in a refrigerator to avoid direct sunlight and heat.
3. Do not mix components A and B in large volume.
4. If skin contact occurs, wipe off the adhesive and wash with soap immediately.
5. When separation is found in either component, stir before use.

### **DISCLAIMER**

The information and recommendations contained herein are based upon data believed to be correct. However, no warranty is expressed or implied regarding the accuracy of this data or the results to be obtained from the use thereof. Health and Safety precautions detailed in this data sheet may not be adequate for all individuals and/or situations.

It is the user's obligation to evaluate and use this data in order to comply with all applicable laws and regulations. It is the user's obligation to determine the suitability of use of the product for a particular application.

For more detailed information refer to Material Safety Data Sheet.

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