



TECHNICAL LEAFLET

SUNSTAR ENGINEERING INC.

One-Part Epoxy Based Adhesive for Weld Bonding PENGUIN CEMENT #1081L

Penguin Cement #1081L is a one-part epoxy based adhesive for weld bonding (a bonding method that combines spot welding and adhesive).

a). Characteristics

1. Perfect curing within one hour at 120 °C and above
2. Epoxy based adhesive with high shear and peel strength
3. High fatigue strength

b). Physical Properties

Appearance	: Gray Paste
Viscosity (20°C)	: 100 x 10 ⁴ cps
Specific Gravity	: 1.62
Non-Volatile Content (%)	: 99.7 %

*a) Viscosity was measured with Rotor No 7, BH type rotational Viscometer at 2 rpm

b) Calculation of non-volatile content was based on the resultant weight loss after exposure at 105 °C for 3 hours

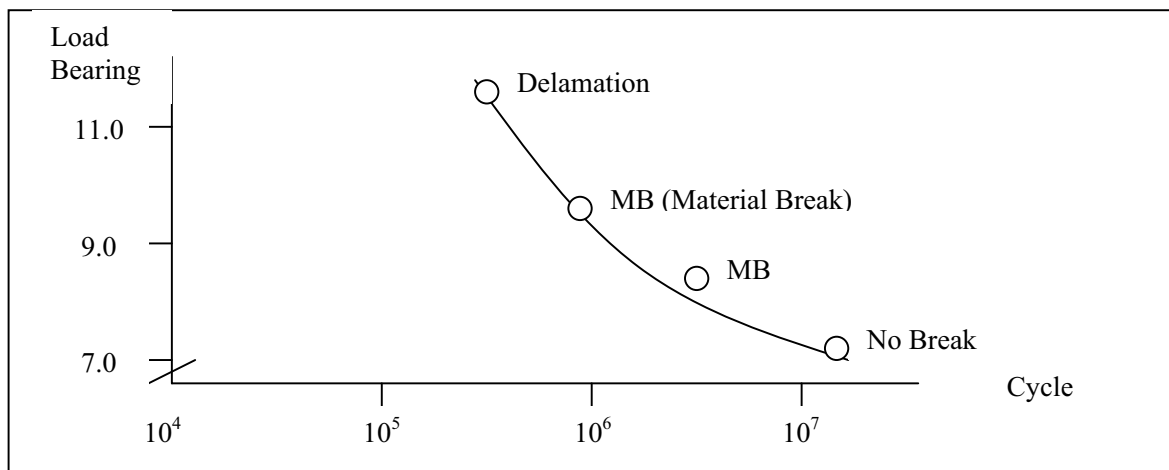
c). General Performances

Adhesive Strength

Items	Shear Strength (kg/cm ²)	Peel Strength (kg/cm ²)
Normal Adhesive Strength (20°C)	376	37.4
Adhesive Strength to oily Surface (20°C)	375	34.4
Adhesive Strength at 80°C	254	26.1
Heat Aging Resistance (80°C/30 days)	354	36.7
Water Immersion Resistance (30 days)	267	35.8
Thermal Shock (4 cycles)	345	38.6
Over Baking Resistance (150°C/30 min)	372	38.8
Rust Prevention Salt Spray (7 days)	340	35.2

- Rust Preventive oil (307-TS) was used for testing adhesive strength to oily surface
- Thermal shock condition:
1 cycle = 80°C x 15.5 hrs → 20°C x 0.5 hrs → -30°C x 7.5 hrs →
20°C x 0.5 hrs → 50°C / 100%RH x 15.5 hrs →
20°C x 0.5 hrs → -30°C x 7.5 hrs → 20°C x 0.5 hrs
- Test condition for over baking resistance:
Double baking at 150 °C for 30 min
- Test samples:
Shear Strength Test : JIS G-3141 25 x 100 x 1.6mm steel plate
Peel Strength Test : JIS G-3141 25 x 100 x 0.8mm steel plate
Baking Condition : 150 °C x 30 min. Overlapping 10m/m

S-N Curve No.1081L (at room temperature)



e). Packaging

Pail can 25kg