ThreeBond

Three Bond International, Inc.
Technical Data Sheet

TB 3923 & TB 3928 –STRUCTURAL ACRYLIC ADHESIVE

Information

TB 3923/TB 3928 has an excellent bonding strength, high tensile strength, peel resistance and impact bonding is higher than general epoxy adhesive. It is easy to use, hardens by coating one surface with TB3923 and another surface with TB3928 then press together. No pre-mixing required although it is possible. In either case the pot life is short. TB3923/TB3928 is quick hardening, and has excellent heat resistance, it can maintain adhesive strength even for 30 days at 120°C.

Typical Properties

1. Uncured State

Property	Units	TB 3923	TB 3928
Appearance	-	Light White	Dark Green
Viscosity	mPa s (cP)	3000 (3000)	3000 (3000)
Specific gravity	-	1.0	1.0
Non-Volatile	%	100	100
Set Time (25°C)	Minute	10	
Handling Time (25°C)		30	

2. Hardening Characteristics

Hardening Time (Minute)	Lap Shear Strength (N/cm^2 (kgf/cm^2))
15	220(22)
20	640 (65)
30	1370 (140)
60	1760 (180)
120	2250 (230)
180	2350 (240)

Setting Duration(Steel/Steel): 10 ~12 minutes (Gel time 3 ~ 5 minutes)
The relationship between adhesive strength and hardening time (25°C, Steel/Steel)

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3. Cured Material

Property		Units	Value
Impact Strength	Steel/ Steel	J/m^2 ($kgf \cdot cm/cm^2$)	147 (15)
Tensile Strength	Steel/ Steel	MPa (kgf/cm^2)	26.5 (270)
T-Peel Strength	Aluminum/Aluminum	kN/m (kgf/25mm)	3.1 (8.0)
	Steel/Steel		2.7 (7.0)
Thermal Shear Strength	-30°C	N/cm^2 (kgf/cm^2)	2840 (290)
	25°C		2650 (270)
	60°C		1570 (160)
	80°C		880 (90)
	120°C		196 (20)
	150°C		98 (10)
Lap Shear Strength	Steel/ Steel	N/cm^2 (kgf/cm^2)	2650 (270)
	Sus/Sus		2350 (240)
	Aluminum/Aluminum		1670 (170)
	Nickel/ Nickel		1860 (190)
	Brass/ Brass		1860 (190)
	Steel/ Sus		2160 (220)
	Steel/ Aluminum		2060 (210)
	Steel/ Ni		2250 (230)
	Sus/ ABS		1960 (200)*
	ABS/ ABS		290 (30)
	Hard PVC/ Hard PVC		980 (100)*
	Nylon/ Nylon		98 (10)
	PC/ PC		1470 (150)*
	Acryl/Acryl		290 (30)

* = Material Failure

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4. General Properties

Property		Units	TB3923	TB3928
Effect on Plastic	PC	-	Hairline crack	Hairline crack
	Hardened PVC		No damage	No damage
	Acrylic		Hairline crack	Hairline crack
	Nylon 6-6		No damage	No damage
	PBT		No damage	No damage
	ABS		No damage	No damage
	Polyacetal		No damage	No damage
Thermal Strength Steel / Steel	80 °C × 30 days	N/cm^2 (kgf/cm^2)	3230 (330)	
	120 °C × 30 days		3820 (390)	
	150 °C × 30 days		3430 (350)	
Water Resistance Tensile Strength**	Steel/Steel	N/cm^2 (kgf/cm^2)	1080 (110)	
	Aluminum/ Aluminum		1670 (170)	
Humidity Resistance Tensile Strength***	Steel/Steel	N/cm^2 (kgf/cm^2)	2060 (210)	
	Aluminum/ Aluminum		1670 (170)	

** = Immersed in water at 40 °C × 30 days
*** = 40°C/95%RH × 7 days

These are typical results and not specifications.

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