Technical Data Sheet

DUPAC®-0521

Product Description

DUPAC®-0521 is a two-component, high cross linking density, solvent-free phenolic epoxy anti-corrosive sealing mastic, formulated for ease of use as well for a good balance of properties. This two-part mastic have a very high peel strength and excellent shear strength. The flexibility of the cured mastic makes it useful for bonding dissimilar substrates.

DUPAC®-0521 is suitable for various fluids and environment, with temperature resistance up to 140℃ and good aging resistance. Dupac®-0521 can serve in oil and gas transportation pipelines containing H2S, CO2, in chemical transportation pipelines with acidic and alkaline media.

DUPAC®-0521 has excellent flexibility and strength, adapting to harsh environment of pipe-laying.
The superior wetting properties make DUPAC®-0521 as a sealing mastic for different interfaces such as metal-metal, metal-plastic coating, plastic coating- plastic coating.

Basic Data

Solid Content	100%		
Color	Base:Amber	Hardener:Grey	Mixed Material:Gray
Specific Gravity @25℃	Base:1.21		
	Hardener:1.19		
	Mixed Material:1.20		
Viscosity @ 25℃ mPa.s (cp) Spindle 6 speed 20 rpm	Base:120,000 to200,000		
	Hardener:100,000 to 150,000		
	Mixed Material:120,000to150,000		
Mix Ratio by weight	1 (Base):1 (Hardener)		
Cure Times @ 24℃	7days		
Pot life @ 40℃	80min		
Dry to touch time @ 24℃	4hours		

Typical Properties

Service temperature	Up to 140℃(Tg3≥118℃)
Dry adhesion to steel	25℃： 20.68MPa (3000psi)(ASTM D4541)
Wet adhesion to steel (Hot water soak resistance)	28days @ 95℃: Rating #1 (CSA Z245.20)
Cathodic Disbondment Resistance	28 days @ 95˚C (203˚F) :<10 mm (CSA Z245.320-10, Clause 12.8, System1A,
Impact Resistance	@ 25˚C (77˚F): 5.0 Joules (3.69 ft-lbf) (CSA-Z245.20)
Hardness	78 ± 2 Shore D (ASTM D2240)
Abrasion Resistance	≤40mg @1000g, 1000 cycles (ASTM D4060-06)
Flexibility(25℃, 5.5°) Cured at 25℃,2 days	No cracks (NACE RP0394 Appendix H)
Interface porosity	Rating 2 (NACE RP0394 Appendix G)
Cross-section porosity	Rating 2 (NACE RP0394 Appendix G)
Shear strength@23℃	≥25Mpa (ASTM D 1002)

Directions For Use

Mixing

When mixing by hand, combine Part A (Base Resin) and Part B (Hardener) in the correct ratio and mix thoroughly until the color and consistency are uniform.

Mixing the mastic just prior to use is recommended. The temperature of each components prior to mixing is not critical but it should be close to room temperature.

Heat buildup during and after mixing is normal. To reduce the likelihood of exothermic reaction or excessive heat buildup, mix less than 4500 grams at a time. Mixing smaller amounts will minimize heat buildup.

When mixing, using a cartridge, and placing cartridge in proper dispenser. To begin using a new cartridge, remove the cap and dispense a small amount of mastic making sure both parts A & B are extruding. Attach nozzle and dispense approximately 2.5 to 5.0 cm before applying onto the part to be bonded. Partially used cartridges should be stored with the mixing nozzle attached. To reuse, removing and discarding the old nozzle attach the new nozzle and begin dispensing.

Applying

Bonding surfaces should be clean, dry and free of contamination

Once the mastic is applied, the bonded parts should be held in contact until the part has developed handling strength. Fixturing can be removed at this point. Since the full bond strength has not yet been attained, load application should be small at this time

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Cure

Complete cure is obtained after 168 hours at 25℃. Dupac®-0521 can also be fully cured with heat such as 6 to 8 hours at a maximum temperature of 180℃.

After 24 hours approximately 90% of full cure properties are attained at room temperature.
Other time length and temperatures (180℃ is a suggested maximum) can be used depending on the application.
Heat curing can be modified to achieve a desired degree of cure from handling strength to full cure.

Clean up

It is important to clean up excess adhesive from the work area and application equipment before it hardens.
Denatured alcohol and many common industrial solvents are suitable for re loving uncured adhesive.

Storage

Store product in the unopened container in a dry location. Storage information may be indicated on the product container labeling.

Optimal Storage: 8℃ to 21℃. Storage below 8℃ or greater than 28℃ can adversely affect product properties Material removed from containers may be contaminated during use. Do not return product to the original container. TYHOO Corporation cannot assume responsibility for product which has been contaminated or stored under conditions other than those previously indicated. If additional information is required, please contact your local Technical Service Center or Customer Service Representative.

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