Industrial Polymers Corporation

PureCast 603

Technical Data

Revision date: 06/16

DESCRIPTION

PureCast 603 is a high performance, two-component liquid castable polyurethane elastomer that contains no TDI or MOCA. PureCast 603 is insensitive to typical environmental moisture and exhibits low shrinkage. PureCast 603 provides the strength and durability of a heat-cured urethane in a simple to use RTV system. It provides you with the ability to cast high strength, flexible urethane parts in urethane or silicone molds. PureCast 603 can be colored with our RV series pigments. We recommend using black or darker colors to prevent color change or applying a UV resistant coating for outdoor application. The product is reddish/brown in color. Some uses for PureCast 603 include core box liners, metal forming pads, industrial parts and abrasion resistant pads and bumpers. Purecast 603 may also be used as an abrasive resistant coating for ropes.

MIXING AND APPLICATION

Condition the liquid components: Component A to 90˚F-100°F to reduce viscosity which greatly aids with mixing and Component B to 72°F before combining. Warmer temperature will significantly shorten the working time and colder temperatures will length time and make mixing difficult.

In a clean plastic container, mix by Weight 100 parts of Component A (clear) and 31 parts Component B (black or clear amber) or mix by Volume 100 parts Component A and 32 part Component B.

Start mixing immediately after A & B components are added to the beaker. Use a clean flat spatula taking care to scrape the sides and bottom of the container to include all of the unmixed material.

Mix for 1 minute, mixture should be evenly mixed with no "lines" of unmixed clear or black.

Pour mixture into prepared mold. Cami 980 silicone mold release is recommended for most surfaces.

Clean up with mineral spirits.

Metallic surfaces to be bonded should be brushed blasted to achieve a 2 to 3-mill surface profile to remove all surface oxidation and traces of previously bonded polymer. After blasting, etched surface should be thoroughly degreased using clean Toluene or mineral spirits solvent wipe. Surface is now ready for priming.

To prevent further surface oxidation, prepared metallic surface should be immediately primed using Primer 460 SPX or Primer 800 and allowed to cure in a dry environment overnight for 12 hours. This should be allowed to cure for 1 hour at 72° F before applying PureCast 603 urethane elastomer (see Primer 460 SPX or Primer 800 technical data sheet for full mixing and application instructions).

Do not allow Primer 460SPX or Primer 800 to cure longer than 6 hours before applying PureCast 603 urethane elastomer to ensure a total chemical bond in between primer and elastomer coating.

Maintain at least 72° F during the complete application process. Colder temperatures retard curing times, warmer temperatures reduce curing times.

All primed surfaces should be kept free of moisture, dust and any grease or oil, which may interfere with polymer bond.

PHYSICAL PROPERTIES

Mix Ratio By weight		100 parts A/ 31 part B
Mix Ratio By volume		100 parts A/ 32 parts B
Viscosity @ 72°F (A Side)		35,000 CPS
Viscosity @ 72°F (B Side)		100 CPS
Viscosity @ 72°F (Mixed)		6500 CPS
Color	Part A:	Clear
Color	Part B:	Black or Clear Amber
Color	Mixed:	Black or Clear Amber
Working Life @ 72°F		18-30 minutes
Demold Time* @ 72°F		6-8 hours
Demold Time* @ 150°F		2-4 hours
Complete Cure* @ 72°F		7 days
* Set time and Demold time depends on temperature and relative humidity.		
Specific Gravity: (Part A)		1.03
Specific Gravity: (Part B)		1.00
Specific Gravity: (Mixed)		1.02
Weight/Gallon Part A		8.59 lbs.
Weight/Gallon Part B		8.32 lbs.
Weight/Gallon Mixed		8.53 lbs.

WORKING PROPERTIES	Hardness @ 72° F	ASTM 2240-85	82-92 Shore A
	Tensile Strength	D-412 die C	5,039 psi
	Elongation	D-412 die C	460%
	Tear Strength	D-624 die C	956 lb./in.
	Dielectric Strength	ASTM D-149	1,165 V/mil
	Dielectric Constant	ASTM D-150	55.45 @ 1MHz
CLEAN UP	Clean up with Mineral Spirits. Dispose of all empty PureCast 603 component containers in accordance with local, state and federal regulations. Empty component containers can be rendered non-hazardous by rinsing the containers with a small amount of mixed material and allowing the solvents to evaporate. The containers will then contain non-hazardous cured urethane.		
STORAGE AND SHELF LIFE	PureCast 603 is shipped from the factory in sealed containers. The containers should be stored in a cool, dry area that is protected from direct sunlight and moisture. Storage temperatures should be between 70°-80°F and should not exceed 90°F. The shelf life of the factory sealed containers stored under these conditions is six months. Containers that have been opened should be resealed immediately after material has been removed in order to prevent solvent evaporation.		
SHIPPING CLASS	Class 55 Non-hazardous		
APPLYING POLYMER COATINGS TO ROPE (NATURAL OR SYNTHETIC)	The coatings designed for this application are inherently higher in viscosity to control the amount of coating that can be applied per application. The higher viscosity and limited working time can make correct mixing of the Component A and B more difficult hence small batch sizes are recommended i.e. 0.90 gallon kits of polymer. Mixing the Polyurethane coating. 1. Allow the component A & B container to stabilize overnight to 70-80˚F. Colder temperatures will increase viscosities and make mixing difficult where warmer temperature will reduce working time with the mixed polymer. 2. If the Component B is not "pre-pigmented" add the full tube of SL-pigment to the Component B container and mix well (Shake can) 3. Add all of the Component B to the larger component A container and mix with a "jiffy mixer" and electric drill at a medium speed. Do no whip excessive air into the mixture but mix fast enough to completely combine the Component A & B (about 1 to 2 minutes). PureCast 603 has a working time of 15 to 20 minutes, TrueKote CS-100 FR has a working time of 30 to 45 minutes at 72˚F. 4. Apply the coating to the prepared rope section. Applying the mixed polymer to the Rope Section 1. Inspect the Rope section that will be coated to insure that it is "dry" and free of dirt and debris. Rope that has been exposed to oil or grease should not be coated as the coating will not adhere or possible cure completely 2. Attach the Rope section vertical to make the longest length possible. 3. Using a gloved hand, start at the top of the secured rope, bathing the rope with the mixed polymer gradually working down the line. Take care to work the polymer into the line with thumb and fore finger pressing on to the line. 4. Observe the line for unevenness in the coating and quickly smooth out these areas. Smooth out "drips" as they occur , toluene may be use with gloved hand to assist with contouring the "drips" as the polymer thickens up (30-45 minutes) after initial application. Continued on Page 3		

APPLYING POLYMER COATINGS TO ROPE (NATURAL OR SYNTHETIC)	5. Allow the rope to cure for about 2 hour at 72˚F before applying additional layers of coating. Usually 2 coats of polymer will produce a cosmetically acceptable product. Curing the coated rope section 1. Allow the coated rope section to hang vertical overnight, the rope can be handled the following. Lay the coated rope flat in an extended position to compete the cure cycle, 3 days at 72˚F before coiling the rope. Rope sections that are coiled up before the curing cycle has completed may maintain an unwanted and irreversible "spring-coiled" shape. In addition the coated rope may "stick" to itself and make the line unusable. Recoating the coat rope sections Coated rope sections can be recoated without any special preparation if recoated within a 24 hr. period after the initial application of the coating and they have been kept dry. (Coated rope sections older than 24 hrs.) 1. Lightly abrade the cured coating with abrasive foam sponges (3M Corporation) that are available from Home depot or Lowes stores. 2. Apply a light coating of Primer 460 SPX (Industrial Polymers Corp) and allow it to dry for 30 to 45 minutes at 72˚F 3. Apply the coating as describe in "Applying the coating to prepared rope sections" • Please call Industrial Polymers Corporation for further technical assistance if needed 713-943-8451