



REPLICAST 612

Metallic Gray Rapid Tooling Urethane

DESCRIPTION

REPLICAST 612 is a two-component, filled urethane tooling material that has very easy handling characteristics and exceptional cured properties. This material tends to have less hard-pack settling in storage, and therefore is usually easier to use than other materials of this type, which tend to settle more rapidly. It is not extremely abrasive, so it can be machined with the proper cutters if desired. REPLICAST 612 has a one-to-one mix ratio by weight or volume, for fast measuring and mixing. It has a longer pot life than earlier materials of this type, yet it cures rapidly, and can be demolded and put into service quickly. REPLICAST 612 has lower exotherm during cure than our REPLICAST 609, and therefore lower shrinkage in thicker castings. REPLICAST 612 is the better choice for thicker castings when the lowest shrinkage is required.

REPLICAST 612 provides an easy to measure and mix, rapid curing system that has tough cured properties and very good heat resistance. It is an excellent choice for patterns, tooling, fixtures and general shop aids.

FEATURES and BENEFITS

- ◆ Less Hard-Pack Filler Settling
- ◆ Smooth Consistency that Pours Well & Duplicates Details Nicely
- ◆ Excellent for Medium to Larger Casts
- ◆ Low Exotherm During Cure for Stress-Free Castings
- ◆ Very Good Hot Strength
- ◆ Low Shrinkage, Good Cured Stability

PRODUCT SPECIFICATIONS

	REPLICAST 612 Part A	REPLICAST 612 Part B	Test Method
Color	Gray	Tan	Visual
Viscosity, @ 77°F, centipoise	2,700 cps	500 cps	ASTM D23932
Specific Gravity, gms./cc	1.73	1.69	ASTM D1475
Mix Ratio			
By Weight	100 : 100		PTM&W
By Volume	100 : 100		
Pot Life, 4 fl. Oz. Mass, @ 77°F	10 minutes		ASTM D2471

REPLICAST 612, Page 2

HANDLING and CURING

REPLICAST 612 is very similar to other REPLICAST products that have been on the market for quite some time. However, REPLICAST 612 offers certain advantages over previous products of this type that make it very attractive for use in a variety of applications. It has a longer working time to allow easier preparation and pouring of complicated castings, yet it cures quite rapidly, so it can be demolded in a short time. The exact demold time will depend upon the shop conditions and size of the casting. Generally, most castings can be demolded in 30 to 40 minutes, depending upon size, and can be put into service shortly after that. Very thin casts, and those made in very cold shop environments should be carefully checked for hardness and degree of cure before demolding, to avoid distortion of the casting. REPLICAST 609 is a better choice for thin-section and small castings, as it gels and cures faster in these instances. REPLICAST 612 is a highly filled system, and, as such, both components should be checked for settling before making a casting. REPLICAST 612 usually has less hard-pack settling than other products of this type. However, all filled casting systems have the potential to settle in some manner when stored for long periods, so the REPLICAST resin and hardener should be thoroughly stirred before use to insure original manufactured uniformity.

TYPICAL MECHANICAL PROPERTIES

		REPLICAST 612 A/B	Test Method
Mix Ratio,	By Weight	100 : 100	PTM&W
	By Volume	100 : 100	
Color		Metallic Gray	Visual
Mixed Viscosity, @ 77°F, centipoise		2,600 cps	ASTM D2393
Working Time, 4 fl. Oz. Mass, @77°F		10 minutes	ASTM D2471
Peak Exotherm, 20 lb. Mass, Cast 2 ½ " Thick		130°F	ASTM D2471
Cured Hardness, Shore D	@ Room Temperature	84 D	ASTM D2240
	@ 150° F	80 D	
Shrinkage, inch/inch, Mold Number 3, Volume: 1.23 Gallon, Size: 10" long x 4.5" Deep		0.0027 inch / inch	ASTM D2566
Specific Gravity, grams, cc		1.71	ASTM D1475
Density,	Pounds per cubic Inch	.0618	ASTM D792
	Pounds per gallon	14.2	
Specific Volume, cu. in./lb.		16.19	ASTM D792
Tensile Strength, psi		4500 psi	ASTM D638
Elongation at Break, %		2.00%	
Flexural Strength, psi		6900 psi	ASTM D790
Compressive Strength, psi		9100 psi	ASTM D695

PACKAGING WEIGHTS

	Gallon Kit	Kit Volume	
		Gallons	Cubic Inches
REPLICAST 612 Part A	9 lb.	.62 gal.	144 cu. in.
REPLICAST 612 Part B	9 lb.	.64 gal.	147 cu. in.
Kit	18 lb.	1.26 gallons	291 cubic inches

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PTM&W Industries, Inc.

10640 S. Painter Avenue Santa Fe Springs, CA 90670-4092

562-946-4511 800-421-1518 FAX: 562-941-4773

Visit Us At: www.ptm-w.com

Send Questions To: info@ptm-w.com