

**Advanced Materials****RenCast<sup>®</sup> 3215-3 / Ren<sup>®</sup> 3215-3 System**

## MASS CASTING SYSTEMS

**DESCRIPTION:**

RenCast<sup>®</sup> 3215-3(Resin) / Ren<sup>®</sup> 3215-3(Hardener) is a black casting system used for making fixtures, dies, patterns and variable hardness molds. This system can be cured a variety of Shore hardnesses (as shown below) – from flexible to resilient – simply by changing the resin-to-hardener ratio:

Resin/Hardener Ratio (Weight)	Description	Shore D hardness
100/50	Flexible	45
100/40	Resilient	70
100/30	Impact Resistant	85

Castings can be made effectively at thicknesses of ¼ inch to 2 inches in insulated molds (i. e., plastic, plaster, wood), while a heat conducting molds metl will allow up to 4 inches to be cast at one time. RenCast<sup>®</sup> 3215-3 resin has a relatively long working time with a low exotherm. Curing is carried out at normal room or at elevated temperatures up to 150°F, with little shrinkage.

This casting system contains iron as a filler for added wear and chip resistance. Fillers contained will not hardpack in storage. When mixed, RenCast<sup>®</sup> 3215-3 resin is a low viscosity material, easy to work with and resistant to air entrapment.

The resin component of RenCast<sup>®</sup> 3215-3 resin is the same as that used in RenCast<sup>®</sup> 3215-1 and RenCast<sup>®</sup> 3215-2 casting systems. The latter materials involve different hardeners to provide more rigid, higher modulus castings.

**MIXING INSTRUCTIONS:**

Reaction Ratio	(weight) (volume)	<u>Resin/Hardener</u>		
		100/50	100/40	100/30
		100/95	100/76	100/57

**Mixing:** Stir each component thoroughly before use. Weigh each component accurately ( $\pm$  5%) into clean containers. Thoroughly mix resin and hardener together (minimum 3 minutes) scraping container sidewalls, bottom and mixing stick several times to assure a uniform mix.

**TYPICAL MIXED PROPERTIES:**

Property	ASTM Test Method	Test Values <sup>(1)</sup>		
		Flexible (100/50)	Resilient (100/40)	Impact Resistant (100/30)
Gel time, 14 fl. oz.	D-2471	60 min.	65 min.	70 min.
Color (mixed)	Visual	Black	Black	Black
Viscosity (mixed)	D-2393	4,600 cP	5,400 cP	6,200 cP

<sup>(1)</sup> Tested @ 77°F (25°C)**TYPICAL CURED PROPERTIES:**

Property	ASTM Test Method	Test Values <sup>(1)</sup>		
		Flexible (100/50)	Resilient (100/40)	Impact Resistant (100/30)
Specific Gravity	D-792	1.48	1.51	1.54
Cubic inch per lb.	D-792	18.7	18.3	18.0
Hardness (Shore D)	D-2240	45	70	85
Ultimate Compressive Strength (psi)	D-695	Flexible	--	12,600
Ultimate Flexural Strength (psi)	D-790	Flexible	300	6,900
Flexural Modulus (psi)	D-790	Flexible	--	0.39 x 10 <sup>6</sup>
Ultimate Tensile Strength (psi)	D-638	300	1,200	4,300
Deflection Temperature (264 psi) (°F)	D-648	<77	<77	<77
Shrinkage (in/in) (cast) Mold #1	D-2566	0.0017	0.0011	0.0017

<sup>(1)</sup> Cure Schedule – 7 days @ 77°F (25°C), tested @ 77°F

**NOTE:** Typical Properties – These physical properties are reported as typical test values obtained by our test laboratory. If assistance is needed in establishing product specifications, please consult with our Quality Control Department.

**CURING INSTRUCTIONS:**

Although room temperature epoxies will normally set up to a rigid, demoldable state within 24 hours at room temperature (75°F ± 5°F), these systems reach their full cure after seven days at room temperature. A full cure can be accelerated by applying heat after the part has set rigid. We recommend a postcure of 150°F for a minimum of six hours. (Add to this adequate time to bring the part to the postcure temperature.) After cure, the part should be cooled at a slow rate so as not to shock the part thermally.

Uniform heat distribution is also required during postcure; concentrated heat, such as that directed from a lamp, can cause warp. An elevated temperature cure will slightly increase the shrinkage compared to a room temperature cure.

**STORAGE/HANDLING INFORMATION:****RenCast® 3215-3 / Ren® 3215-3 System**

Store at 60-100°F in a dry place After use tightly reseal.

Work in a well ventilated area and use clean, dry tools for mixing and applying. For two component system, combine the resin and hardener according to mix ratio. Mix together thoroughly and use immediately after mixing. Material temperature should not be below 65°F (18°C) when mixing.

**RenCast® 3215-3 Resin**

Stir well before use. This material will separate.

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**SHELF LIFE:**

Provided materials are under the recommended storage conditions in their original containers, they will remain in useable condition for at least two years from date of shipping.

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**PACKAGING:**

This product is available in the following package size(s):

Small kits, 6 units per kit, total kit weight 32.5#,  
or in pails of resin at 60# and pails of hardener at 30#.

Please call Customer Service (800-367-8793) for price and availability.

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**SAFETY/HANDLING PRECAUTIONS:**

Do not use or handle this product until the material Safety Data Sheet has been read and understood.

**RenCast® 3215-3 Resin**

**WARNING!** Causes skin and eye irritation. May cause allergic skin reaction.

Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated contact with skin. Wash thoroughly after handling.

**Ren® 3215-3 Hardener**

**DANGER!** COMBUSTIBLE, CORROSIVE – Causes eye burns and skin irritation.

Keep away from heat and flame. Do not get in eyes, on skin, or on clothing. Avoid breathing vapor or mist. Keep container closed. Use with adequate ventilation. Wash thoroughly after handling.

Nuisance dust may be generated when sanding or sawing cured material.

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**FIRST AID:**

In case of contact with:

**Skin:** Immediately wash with soap and water. Remove contaminated clothing and launder before reuse. Destroy contaminated shoes.

**Eyes:** Immediately flush with water for at least 15 minutes. Call a physician.

**Ingestion:** If conscious, give plenty of water to drink. Do not induce vomiting. Call a physician.

**Inhalation:** Remove to fresh air. Administer oxygen or artificial respiration if necessary. Call a physician.

**Other:** Referral to physician is recommended if there is any question about the seriousness of any injury.

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**PRECAUTION NOTE:**

Thermosetting systems generate heat when curing. The amount of heat and the period of time in which heat is released vary significantly between systems. Additionally, ambient or compound temperature, amount of material mixed, and construction and shape of the mold or container can also be factors in the temperature profile of a mixed system.

In some cases, the thermosetting reaction can be vigorous, generating heat sufficient to cause decomposition of the system with subsequent liberation of large volumes of acrid smoke.

A good rule of thumb is never mix more material than can be applied during the stated pot life or gel time. Also take care when using materials in applications other than stated on the Product Data Sheet, i.e., a laminated resin for casting.

Please feel welcome to call our Product Information Department or your local Ren<sup>®</sup> representative for instructions before you start your job.

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