



REN:C:O-THANE[®] Polyurethanes and Polyureas

Produce high-quality patterns,
molds and parts with elastomers
from Ren Shape Tooling Systems

Typical Properties of REN:C:O-THANE Polyurethanes and Polyureas

Products: Shore A Hardness Materials	Color	Mix Ratio, Resin to Hardener, by wt. (by vol.)	Shore Hardness	Mixed Viscosity, cP @ 77°F (25°C) after 5 min.	Gel Time, min.	Maximum Cast Thickness, in.	Minimum Demold Time, hrs. @ 77°F (25°C)	Cured Density, lb./ft. ³ (g/cm ³), ASTM D-792	Tensile Strength, psi ASTM D-638	Tear Strength, ppi ASTM D-624	Elongation, % ASTM D-638	Shrinkage*, in./in. ASTM D-2566	Characteristics
RP 6400-1 R/H	Off-white	10:100 (9:100)	52±7	1,300	30	2	24	65 (1.04)	1,260	112	420	0.001	Flexible; Tough; Withstands sub-zero temperatures.
RP 6401-1 R/H	Off-white	25:100 (22:100)	65±10	1,000	20	1.5	24	67 (1.07)	1,820	171	340	0.0005	Good elongation and tear strength; Good mold durability.
RP 6402-1 R/H	Off-white	35:100 (31:100)	82±7	900	20	1	24	67 (1.08)	2,200	180	320	0.001	Very tough; Good resilience; Good detail reproduction.
RP 6403-1 R/H	Off-white	50:100 (44:100)	92±7	800	15	0.5	24	69 (1.10)	2,500	470	240	0.001	High tensile strength; Outstanding tear strength.
RP 6410-1 R/H	Off-white	100:100 (93:100)	37±7	1,200	30	4	24	65 (1.04)	505	74	330	0.003	Good low-temperature flexibility and resilience.
RP 6434 R/H	Light Amber	25:100 (25:100)	35–40	500	17	—	24	—	1,100	120	500	—	Very flexible; Excellent elongation for molds.
RP 6442 R/H	Amber	100:100 (100:94)	85±5	1,600	28	4	24	68 (1.09)	2,100	290	525	0.001	Good abrasion resistance and strength; Low moisture sensitivity polyurea.
RP 6443 R/H	Amber	100:60 (100:60)	95±5	2,450	19	2	24	66 (1.06)	3,500	375	475	0.001	Semi-rigid, tough material; Abrasion resistant; Low moisture sensitivity polyurea.
Products: Shore D Hardness Materials	Color	Mix Ratio, Resin to Hardener, by wt. (by vol.)	Shore Hardness	Mixed Viscosity, cP @ 77°F (25°C) after 5 min.	Gel Time, min.	Maximum Cast Thickness, in.	Minimum Demold Time, hrs. @ 77°F (25°C)	Cured Density, lb./ft. ³ (g/cm ³), ASTM D-792	Tensile Strength, psi ASTM D-638	Flexural Strength, psi ASTM D-790	Notched Izod Impact, ft-lb./in. ASTM D-256	Shrinkage*, in./in. ASTM D-2566	Characteristics
RP 6405 R/H	White	100:100 (90:100)	75±5	240	20	0.5	24	67 (1.07)	5,300	6,870	0.71	0.0029	Thermoplastic appearance; Tough; Tear resistant.
RP 6419 R/H	White	100:80 (100:85)	85±5	450	20	0.5	24	78 (1.25)	10,000	—	—	0.0023	High 174°F heat deflection after postcure; Passes UL 94 V-0 @ 0.125 inches.
RP 6420 R/H	Clear	100:100 (95:100)	77±7	1,200	30	1	24	69 (1.10)	4,700	6,100	1.30	0.002	Transparent; Rigid, Outstanding 500 ppi tear strength; Must be vacuum degassed.
RP 6430 R/H	Off-white	100:50 (100:52)	75±3	200	20	0.5	24	71 (1.14)	5,900	9,600	0.61	0.002	Easy to pigment; Thermoplastic appearance; Good tear strength of 425 ppi.
RP 6444 R/H	Amber	100:60 (100:60)	60±5	2,500	27	2	24	66 (1.05)	3,400	—	—	0.001	Rigid; Tough; Abrasion resistant; Outstanding tear strength of 550 ppi; Low moisture sensitivity polyurea.
TDT 178-59-1 R/H	Reddish Brown	36:100 (50:100)	88±5	4,000	22	2	24	101 (1.61)	5,500	9,000	0.35	0.001	Good 136°F heat deflection temperature; Extremely hard; Tough.

*Molds are half round steel, 10-in. long, 0.875-in. deep

Ren Shape Tooling Systems specializes in helping customers get products to market fast. Find out how you can save time and cut costs with our full line of innovative products for rapid modeling and tooling, prototyping, foundry patternmaking and metalforming.

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We look forward to hearing from you!

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