

PROlite™

Lightweight Filler System

Reduce Weight

Reduce Cost

Use Less Resin

Lower VOC Emissions

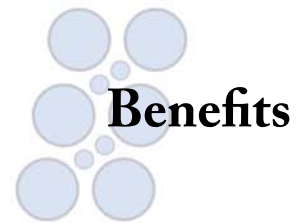
Improve Thermal Shock Resistance

Prolite is a cost competitive particulate system engineered to reduce the weight of your cast polymer parts, simplify processing, improve thermal shock resistance and save you money.

Prolite is a castable lightweight filler system which includes resin extending, lightweight polymeric microspheres and is a natural white replacement for calcium carbonate in gravity cast thermoset systems. Prolite is available as a concentrate or as a pre-blended direct replacement for calcium carbonate, with the weight savings represented by the product code for ease of selection.



Prolite fillers are available as pre-blends or as concentrates. Prolite pre-blends are designed as a total replacement for conventional heavyweight marble fillers and provide the convenience of a one-bag mix, saving you the time and effort of excessive measuring and weighing. Prolite concentrates (Prolite C500 & Prolite C700) are designed as additives to complement your calcium carbonate filler, giving you the ability to adjust mix densities to meet your weight savings and cost requirements. Prolite is well suited for both batch mixing and auto casting equipment.



Prolite Uses Less Resin AND Reduces More Weight than the Competition

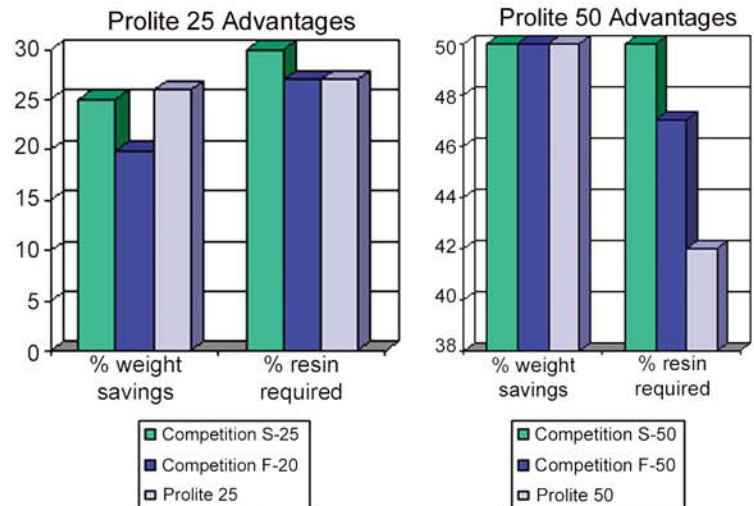
Prolite's unique particle-packed design makes it the most efficient and economical lightweight filler on the market today. No other filler saves you resin and reduces the weight of your parts quite like Prolite.

The advantages of using less resin

- Lower cost
- Less shrinkage
- Reduced chance of stress fractures & cracking during cure
- Decreased chance of warping
- Lower VOC emissions

The advantages of lighter parts

- Less labor used in manufacturing, handling & installation
- Lower shipping & distribution cost
- Less potential for part damage during installation



Prolite Provides Superior Wet-out, Flow and Air Release

Conventional lightweight fillers can be difficult to wet out and require extra mixing time. Resulting matrixes are often dense and "stiff"; resisting flow and inhibiting air release. This is not the case with Prolite. Prolite's unique particle distribution allows for quick and easy dispersion in resin, rapid flow under minimal vibration and the free movement of air to the surface of the part. Using heated resin systems can further enhance these benefits and help accommodate higher filler loadings.

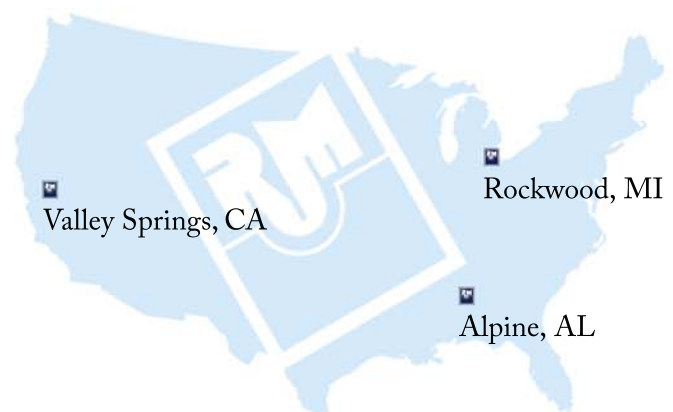
Prolite Improves Thermal Shock Resistance

Independent testing has proven that products made with R.J. Marshall Company lightweight fillers perform better than conventional marble fillers; up to three times better in many cases. When casting according to standard marble manufacturing procedures, Prolite fillers exceed all ANSI certification standards.

Shipping Locations

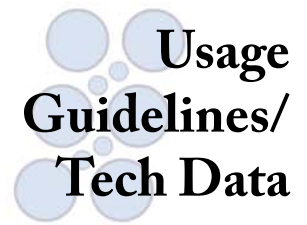
Prolite is manufactured in Rockwood, MI, Alpine, AL and Valley Springs, CA. Prolites manufactured at the Alpine, AL facility will have an "A" at the end of the product code. Prolites manufactured at the Valley Springs, CA facility will have a "V" at the end of the product code.

Packaging	Prolite 15	25, 35	50, 50FGA, FR50	C700, C500
Bag size	50 lbs	50 lbs	50 lbs	25 lbs
Bulk bag	3,000 lbs	2,500 lbs	1,300 lbs	1,000 lbs
Pallet weight	3,000 lbs	3,000 lbs	1,500 lbs	1,000 lbs



Gelcoat

We recommend that a gelcoat be used on all Prolite products. A gelcoat thickness of 18-22 mils (wet) is generally sufficient when applied correctly, however, you should not deviate from the minimum/maximum thicknesses recommended by your gelcoat manufacturer.



Suggested Resins

Standard marble casting resins can be used. The best results are realized when using a low viscosity, medium to high reactivity casting resin. Lower resin viscosities may allow higher filler loadings.

Filler/Resin Ratio

Mixing ratios will vary depending on the Prolite product you select and your process requirements. A spreadsheet showing the full range of Prolite's weight and cost savings advantages is available from the R.J. Marshall Technical Service Department. Possible starting point ratios for the Prolite pre-blends are shown in the chart below. Remember that results may vary depending on your operation: resin type, temperature, mixing time and desired matrix thickness can alter these ratios.

	Standard marble	Prolite 15	Prolite 25	Prolite 35	Prolite 50	Prolite 50FGA ¹	Prolite FR50 ²
Resin (lbs)	23	21.6	20	21	21	23	24
Filler (lbs)	77	68.4	55	44	29	27	26
Weight (lbs)	100	90	75	65	50	50	50

1) Contains Chopped Fiberglass. 2) Flame Retardant formulation.

Catalyst Level

1.5 – 2.0% catalyst levels based on resin weight is recommended. Levels will vary depending on resin reactivity, shop temperature, and process requirements. Consult your resin supplier for proper catalyst levels to attain proper exotherm temperatures and achieve the best cure.

Vibration

As a result of Prolite's exceptional flow characteristics, a vibration time of 5-10 minutes should be adequate to level the matrix in the mold and release surface air.

Color

Prolite products are formulated to achieve batch-to-batch color consistency. Each has a natural white appearance, with the whiteness intensity slightly increasing as the weight reduction increases.

Pigmentation and Veining

Due to the degree of whiteness, very little color additive is needed to heighten the white background hue. When using the recommended filler/resin ratios, veining patterns are similar to those achieved with standard cultured marble.

Pre-Blends

Typical Physical Properties	Prolite 15	Prolite 25	Prolite 35	Prolite 50	Prolite 50FGA	Prolite FR50
Resin % required in matrix*	23 - 24	27 - 28	32 - 33	42 - 43	45 - 46	47 - 48
Loose bulk density (lbs./cu.ft.)	65	58	46	29	29	28
Specific gravity	2.3	1.8	1.5	1.0	1.0	1.0
Free moisture content	< 0.4%	< 0.4%	< 0.4%	< 0.4%	< 0.4%	< 0.4%

*Resin % recommendations are based on an 800-1000 cps casting resin at 70° F.

Prolite concentrates (Prolite C500 & Prolite C700) are designed as additives to complement your calcium carbonate filler, giving you the ability to adjust mix densities to meet your weight savings and cost requirements. The following charts show the mix ratios of Prolite C 700 & 500 concentrates and marble dust required to achieve desired weight savings when using a constant resin weight of 22 pounds.

Prolite C Usage Guidelines/ Tech Data

Typical Physical Properties	Prolite C 700	Prolite C 500
Loose bulk density (lbs./cu.ft.)	19	16
Specific gravity	0.7	0.5
Free moisture content	< 0.4%	< 0.4%

Prolite C700

Desired Weight Savings (%)	Marble Dust (lbs.)	Prolite C700 (lbs.)	Resin (lbs.)	Total Weight (lbs.)	% Resin Volume	Cubic Feet in Formula
0	78	0	22	100	40.9	0.7835
5	70	2	22	94	41.0	0.7818
10	65	3.5	22	90.5	40.8	0.7864
15	57	5.5	22	84.5	40.8	0.7847
20	51	7	22	80	40.9	0.7835
25	44	9	22	75	40.7	0.7877
30	38	10.5	22	70.5	40.8	0.7864
35	30	12.5	22	64.5	40.8	0.7847
40	24	14	22	60	40.9	0.7835
45	17	16	22	55	40.7	0.7877
50	10.5	17.5	22	50	40.9	0.7835

Prolite C500

Desired Weight Savings (%)	Marble Dust (lbs.)	Prolite C500 (lbs.)	Resin (lbs.)	Total Weight (lbs.)	% Resin Volume	Cubic Feet in Formula
0	78	0	22	100	40.9	0.7835
5	71	1.5	22	94.5	40.6	0.7900
10	65	2.5	22	89.5	40.8	0.7864
15	59.5	3.5	22	85	40.8	0.7858
20	53.5	4.5	22	80	41.0	0.7823
25	48	5.5	22	75.5	41.0	0.7817
30	41	7	22	70	40.7	0.7882
35	34.5	8	22	64.5	41.0	0.7817
40	29	9	22	60	41.0	0.7811
45	24	10	22	56	40.9	0.7835
50	16.5	11.5	22	50	40.7	0.7870

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April 2018