



Rayite™ 200
SPRAYABLE
MACHINABLE
MEDIA

Mix it. Spray it. Machine it.

RAYITE™ 200 Sprayable Machinable Media is a new mineral-based material developed by United States Gypsum Company for prototyping, mold, pattern, and model making operations. It can be used for any size application, but is especially suited for large patterns and molds.

RAYITE 200 Sprayable Machinable Media can be used with all machining processes, especially CNC routers and gantry type mills. It machines easy, yet is super-tough and has excellent edge definition. This produces sharp, precise cuts with minimal loading on milling machines and cutting tools.

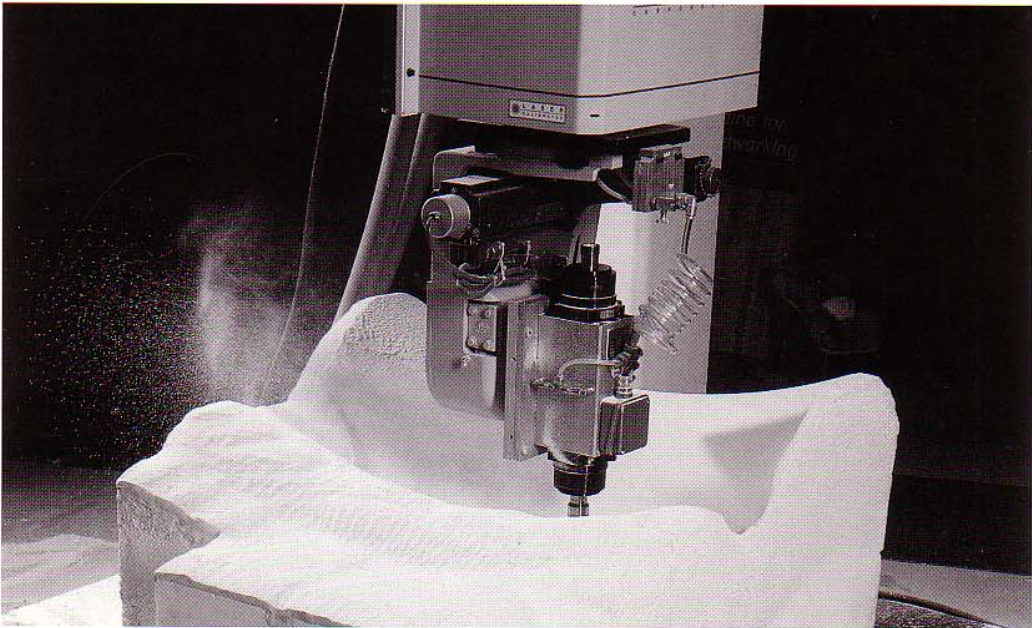
RAYITE 200 Sprayable Machinable Media is easily applied, in any thickness, to just about any structurally supported armature, such as expanded polystyrene or low density polyurethane foam. No more built-up, labor-intensive pattern construction. Just mix it, spray it, and machine it!



Spray RAYITE 200 on undersized armature.



Spray RAYITE 200 to slightly oversized tolerance.



Machine RAYITE 200 to final dimensional tolerance.



RAYITE 200 Sprayable Machinable Media

- Low abrasion and friction results in less tool wear.
- Ability to spray on almost any reinforced armature.
- Mineral-based, non-combustible, non-toxic formula offers safe mixing, casting, and spraying.
- Ease of use—just mix with water and spray.
- High quality surface reduces surface prep time and finishing—high gloss finishes are possible.
- Dimensional stability provides a shield against wide swings in temperature and humidity.
- Unique formulation results in tremendous reduction in dust from milling.
- No special handling of shavings and waste means easy clean-up.
- Unlimited pattern sizes.
- Can be sprayed in any thickness, on vertical and horizontal surfaces.

Equipment Requirements:

1. Mixing container
2. Accurate scale
3. Hanson Plunge Mixer
4. Spatula or straight edge
5. Mixing motor or drill
6. Rimcraft Technologies, Inc., GS Series Spray Machine

Spraying Machines

Applying RAYITE 200 Sprayable Machinable Media is easy with the GS Series of spraying machines available from Rimcraft Technologies, Inc. Each model is perfect for semi-continuous spraying of RAYITE 200 Sprayable Machinable Media, and they produce a superior spray pattern and total coverage.

Three different capacity machines cover all your needs. The GS-1500R has a 15-gallon capacity and is perfect for high volume production output. The smaller GS-500R has a 5-gallon capacity and is designed for operations requiring the same high output as the GS-1500R model, but with more portability. And the GS-250R has a 2-1/2 gallon capacity, making it fully portable.

Recommended Spraying Machine

GS-1500/1500R



GS-500/500R



Trademarks: The following are trademarks United States Gypsum Company: RAYITE, USG.

**For more information about RAYITE 200
Sprayable Machinable Media, please call (800) 487-4431.**

United States Gypsum Company
Industrial Gypsum Division
125 South Franklin Street
Chicago, IL 60606-4678
A Subsidiary of USG Corporation

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IG1363/10-97 Printed in U.S.A.

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RAYITE™ 200 Calculation Sheet

This calculation sheet is designed to assist with job estimates. Simply determine the area to be sprayed with RAYITE 200 and pick from either the 1" or the 1/2" thickness (prior to machining) using the Estimator Chart below.

Estimator Chart

Sq. Feet (Ft ²)	Slurry Qty. "Q" @ 1" Thick	Slurry Qty. "Q" @ 1/2" Thick
1	11.4	5.7
2	22.8	11.4
3	34.2	17.1
4	45.6	22.8
5	57	28.5
10	114	57
15	171	85.5
20	228	114
25	285	142.5
30	342	171
35	399	199.5
40	456	228
45	513	256.5
50	570	285
60	684	342
70	798	399
80	912	456
90	1026	513
100	1140	570

1. From chart above, determine the total quantity (Q) of RAYITE 200 **SLURRY** needed: _____ *Round UP this number to the nearest whole pound.*

2. Determine the exact powder and water quantities:

Powder Weight (PW): $Q \div 1.3 = \underline{\hspace{2cm}}$

Water Weight (WW): $PW \times 0.3 = \underline{\hspace{2cm}}$

As an example, if your job is 27 ft², and the required spray thickness is 1", the total amount of RAYITE 200 SLURRY required would be calculated as:

Q = 307.8 rounded **UP** to 308
PW = $308 \div 1.3 = 236.92$ **lbs. RAYITE 200**
WW = $236.92 \times 0.3 = 71.8$ **lbs. water**

	Ft ²	Q @ 1" Thick
	20	228
	5	57
	2	22.8
Total	27 Ft²	Q = 307.8

Spraying Machines

Applying RAYITE 200 Sprayable Machinable Media is easy with a spray machine available from Rimcraft Technologies, Inc. The machine was developed specifically for RAYITE 200 and is perfect for semi-continuous spraying of RAYITE 200 Sprayable Machinable Media.

Typical Physical Properties

Typical Physical Properties		Test Method
Use Consistency, (cc water/100 gram RAYITE powder)	30cc	ASTM C472
Set Time	2 hour slurry accelerated to 5 minute set at gun head	
Wet Compressive Strength (one hour)	1,300 psi	ASTM C472
Dry Compressive Strength	4,000 psi	ASTM C472
Tensile Strength	400 psi	ASTM D638-94
Elongation	0.07%	ASTM D638-94
Flexural Strength	900 psi	ASTM D790-92
Tangential Flexural Modulus	925,000 psi	ASTM D790-92
Unnotched Izod Impact Strength	0.257 ft. lbs./in.	ASTM D4812-93
Wet Density @ 30cc	108 pcf	ASTM C472
Dry Density @ 30cc	96 pcf	ASTM C472
Heat Deflection	308 °F	ASTM D648-88
Coef. of Linear Thermal Expansion	1.19×10^{-5} in./in./°F	ASTM D648-91
Thermal Analysis		
Major Melt Point	302 °F	See Note 1
Minor Melt Point	356 °F	See Note 1
Dimensional Stability	Excellent	See Note 2
Expansion, Maximum (3 hour) (modified)	0.079%	ASTM C472
Expansion, Final (modified)	0.160%	ASTM C472

1. Thermal Analysis was performed utilizing a DuPont Model 910 Differential Scanning Calorimeter
 2. Dimensional Stability represents a seven step environmental test. Changes in dimensions were measured after each environmental immersion. The difference between the initial and the final dimensions were compared. RAYITE 200 exhibited excellent dimensional stability (with 0.0019/in. ft.).

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