



VARATHANE® OUTDOOR DIAMOND SPAR URETHANE WATER BASED

DESCRIPTION AND USES

Varathane Diamond Spar Urethane provides the ultimate protection for all your outdoor wood projects in an easy to use, water-based formula. Varathane Diamond Spar Urethane has been specifically formulated to provide the best protection from UV light and weather, which can take years off the life of your outdoor wood.

When it comes to polyurethanes, one formula does NOT fit all projects. Only Varathane offers application specific formulations. For wood floors use Varathane Floor Finishes to protect against heavy foot traffic. For Outdoor projects use Varathane Spar Urethane with powerful UV absorbers to guard against sun damage.

Varathane Diamond Spar Urethane is ideal for all types of outdoor projects, from outdoor furniture to doors and window trim. Varathane Diamond Spar is crystal clear, virtually odorless, and provides for easy water clean-up.

PRODUCTS

Type	Satin	Semi-Gloss	Gloss
Spray	250281	250181	250081
Pint	250251	250151	250051
Quart	250241	250141	250041
Gallon	250231	250131	250031
5 Gallon*	250221		

*Available as special orders only

PRODUCT APPLICATION

PREVIOUSLY FINISHED SURFACES

For best adhesion, surfaces must be clean, dry, and free of wax, grease, oil, shellac, lacquer, mildew, and polishes. Remove wax with wax stripper, shellac with a paint stripper, and mildew with a solution of up to 10% household bleach and tap water. Old finishes in poor condition must be removed. Sand to obtain a smooth surface. Do not use steel wool as rust may develop after finish has been applied. Remove all sanding dust using a vacuum or cloth dampened with mineral spirits.

STAINED OR PAINTED WOOD

Follow manufacturer's direction for application of stain or paint. Make certain surface is thoroughly dry before applying Varathane Diamond Spar Urethane. Refer to manufacturer's label for dry times. For best results, use Varathane Premium Wood Stains.

UNFINISHED SURFACE PREPARATION

Sand smooth using 120-150 grit sandpaper and remove all sanding dust using a rag dampened with mineral spirits, or vacuum. If a filler or putty is used, make sure that it does not contain wax and allow for enough time to dry thoroughly.

APPLICATION TIPS

Product appears milky when wet but dries to a crystal clear finish. Use adequate ventilation at all times. Do not apply in direct sunlight. Apply only when the air and surface temperatures are above 55°F, and below 90°F. Use care when applying over white or pastel paints or stains as discoloration may occur. To prevent bubbles in the finish, do not over-brush, shake, or apply with a roller. Test Varathane Diamond Spar Urethane in an inconspicuous area before beginning. Testing is particularly important when applying over paints or stains as the appearance of these products may change slightly when a water-based finish is applied.

APPLICATION (Aerosol)

- 1.) Shake can vigorously before and during use.
- 2.) Use a drop cloth or newspapers to protect surrounding areas from spray mist
- 3.) Spray light mist coats, holding can 10-12 inches from surface. Move can with a smooth sweeping motion to avoid runs and sags. Several light coats give a better finish than one heavy coat.



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PRODUCT APPLICATION (CONTINUED)

APPLICATION (Aerosol cont.)

- 4.) Allow finish to dry then re-coat. Dries to the touch in 30 minutes, recoat after 1 hour. For extra smoothness, sand lightly with fine grit (#220) sandpaper before final coat.
- 5.) For maximum durability, a minimum of 4 coats is recommended
- 6.) Clean spray button immediately after use by turning can upside down and pressing spray button for 10 seconds or until only clear gas comes out.

APPLICATION (Brush)

- 1.) Stir thoroughly before and during use. **DO NOT SHAKE**, shaking will create bubbles in the finish.
- 2.) Apply using a good quality, synthetic bristle brush, foam brush, or applicator.
- 3.) Allow finish to dry minimum of 2 hours before re-coating. Lower temperatures and/or higher humidity may cause slower dry times. Re-coat only when previous coats have dried clear and feel hard. (Should no longer feel tacky to the touch.) A powder should develop when lightly sanded. If any coat has dried more than 24 hours, lightly sand before re-coating to avoid brush marks.
- 4.) Apply additional coats following directions above. A minimum of 4 coats is recommended. If grain raise occurs, sand smooth before final coat. Allow finish to dry 24 hours before light use. Wait 3 days before subjecting surface to normal usage.

EQUIPMENT RECOMMENDATIONS

AIR-ATOMIZED SPRAY:

Type of Gun	Fluid Tip	Atomizing Pressure
Standard Compressed Air	1.0-1.3mm (0.039"-0.051")	45-80 p.s.i.
HVLP Turbin	1.0-1.3mm (0.039"-0.051")	10 p.s.i.
HVLP Conversion	1.0-1.3mm (0.039"-0.051")	10 p.s.i. (at the tip)

PRODUCT APPLICATION (CONTINUED)

SPRAY TIPS

*Fluid Tips must be plastic or stainless steel.

CLEANUP

For fast, easy clean-up, use water. Dispose of properly. For guidance on disposal of unused product, contact your local or state government environmental control agency.

DO NOT ALLOW PRODUCT TO FREEZE

PERFORMANCE CHARACTERISTICS

PENCIL HARDNESS

METHOD: D3363

RESULT: HB

CHEMICAL RESISTANCE KCMA Rating 1-10 10= No defects

Vinegar	9
Lemon juice	10
Grape juice	10
Orange juice	10
Catsup	10
Coffee	10
Olive Oil	10
100 proof alcohol	6 recovers
mustard	6 slight stain
Spic and Span	10

HOFFMAN SCRATCH

Method: D2197

1.8 kilograms to rupture

IMPACT RESISTANCE Direct/Reverse

METHOD: D2794

RESULT: 140/120

TABER ABRASION

METHOD: ASTM D4060

RESULT: Approx. 130 mg loss CS 17 1000g 1000 cycles

GLOSS (60°)

METHOD: D523

RESULT: 25/55/90

TECHNICAL DATA



VARATHANE® OUTDOOR DIAMOND SPAR URETHANE WATER BASED

PHYSICAL PROPERTIES

		Satin	Semi-Gloss	Gloss
Resin Type		Urethane-Acrylic	Urethane-Acrylic	Urethane-Acrylic
Pigment Type		Silica matting agent	Silica matting agent	None
Solvents		Glycol ethers-water	Glycol ethers-water	Glycol ethers-water
Volatile Organic Compounds*		Less than 275g/l (2.21 lb/gal)	Less than 275g/l (2.21 lb/gal)	Less than 275g/l (2.21 lb/gal)
Weight Per Gallon	Per Gallon	8.5-8.7 lb	8.5-8.7 lb	8.5-8.7 lb
	Per Liter	1.02-1.04 kg	1.02-1.04 kg	1.02-1.04 kg
Solids	By Weight	26.0-28.0%	26.0%-28.0%	25.7%-27.7%
	By Volume	23.8-25.8%	23.8-25.8%	23.8-25.8%
Recommended Dry Film Thickness (DFT) Per Coat		0.8 – 1.5 mils (19-38μ)	0.8 – 1.5 mils (19-38μ)	0.8 – 1.5 mils (19-38μ)
Wet Film to Achieve DFT Per Coat		1½ - 3 mils (37.5-75μ)	1½ - 3 mils (37.5-75μ)	1½ - 3 mils (37.5-75μ)
Theoretical Coverage @ 1mil DFT (25μ)		380-415 sq ft/gal (-m ² /l)	380-415 sq ft/gal (-m ² /l)	380-415 sq ft/gal (-m ² /l)
Practical Coverage @ Recommended DFT (Assumes 15% Material Loss)		320–350 sq ft/gal (-m ² /l)	320-350 sq ft/gal (-m ² /l)	320-350 sq ft/gal (-m ² /l)
Dry Times at 70°-80°F (21°-27°C) and 50% Relative Humidity	Tack Free	1 hours	1 hours	1 hours
	Handle	1.5 hours	1.5 hours	1.5 hours
	Recoat	2 hours	2 hours	2 hours
Dry Heat Resistance		212°F (100°C)	212°F (100°C)	212°F (100°C)
Shelf Life		3 years	3 years	3 years
Safety Information	Flash Point	>212°F (100°C) Setaflash	>212°F (100°C) Setaflash	> 212°F (100°C) Setaflash
	Contains	No lead has been deliberately added.	No lead has been deliberately added.	No lead has been deliberately added.
	Warning!	CONTAINS: GLYCOL EHTERS, N METHYL PYROLIDONE WARNING. VAPOR MAY BE HARMFUL IF INHALED. KEEP AWAY FROM OPEN FLAME. HARMFUL IF SWALLOWED. MAY CAUSE EYE AND SKIN IRRITATION. WEAR EYE PROTECTION AND PROTECTIVE CLOTHING. REFER TO MATERIAL SAFETY DATA SHEET FOR ADDITIONAL INFORMATION.		

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