Oak Ridge™
Foam & Coating Systems, Inc.

OR 42D

Product Description
OR42D is a fast setting, rapid curing, 100% solids, flexible, aliphatic, two component, spray polyurea with excellent color retention. It can be applied to suitably prepared interior or exterior concrete and metal surfaces. It has extremely fast gel time making it suitable for applications down to -20°F (-28.89°C). It may be applied in single or multiple applications without appreciable sagging and is relatively insensitive to moisture and temperature allowing application in most temperatures. OR42D offers a tack free time of less than two minutes and exhibits 300% elongation upon curing with 50 Shore D Hardness

Features
* Odorless
* Excellent Thermal Stability
* Low Temperature Flexibility
* Zero VOC (100% Solids)
* Good Chemical Resistance
* Elastomeric
* Seamless
* Meets USDA Criteria
* Interior or Exterior Applications
* Coats Carbon or Mild Steel Metals without Primer
* Installed with or without Reinforcement in Transitional Areas

Typical Uses
*Architectural Finishes
*Fertilizer Plants
*Flooring and Parking Decks
*Marine Exposure or Submersed Applications
*Mining Operations
*Power Plants
*Secondary Containment
*Tank Coatings External
*Warehouse Floors
*Cold-Storage Facilities
*Food-Processing Plants
*Industrial and Manufacturing Facilities
*Paper and Pulp Mills
*Refineries
*Structural Steel Corrosion Protection
*Walkways and Balconies

Colors
Clear/Neutral. Custom colors are available upon request.
Color Packs, when used, must be added to Part-B.

Packaging
10 gallons kit: 5 gallons Part-A (Isocyanate side) and 5 gallons Part-B (Resin side).
100 gallons kit: 50 gallons Part-A (Isocyanate side) and 50 gallons Part-B (Resin side).

Coverage
OR42D may be applied at any rate to achieve desired thickness. Theoretical coverage for 1 mil thickness is one gallon per 1600 sq ft.

Estimating Formula: (1600 sq ft per gal / dry mil thickness) x Solids Content = Application Rate per gallon

Surface Preparation
In general, coating performance and adhesion are directly proportional to surface preparation. Most failures in the performance of surface coatings can be attributed to poor surface preparation. Polyurea coatings rely on the structural strength of the substrate to which they are applied. All surfaces must be free of dust, dirt, oil, grease, rust, corrosion and other contaminates. When coating substrates previously used, it is important to consider the possibility of substrate absorption, which may affect the adhesion of the coating systems, regardless of the surface preparation. Oak Ridge Foam & Coating Systems, Inc recognizes the potential for unique substrates from one project to another. The following information is for general reference, and for project-specific questions Oak Ridge Foam & Coating Systems, Inc.

Technical

Mix Ratio by Volume		1A: 1B
Pot Life @ 150°F -160°F(65.5-71°C), 50% R.H.		10-20 Secs
Tack Free Time (thickness & substrate temperature dependent)		60-180 secs
Recoat Time		0-6 hours
Viscosity at 150-160^0 F (66.5-71^{0}C)		
Part-A		120 ± 20 cps
Part-B		40 ± 20 cps
Density (Side A & B Combined)		8.5 lbs. /gal
Flash Point		> 200^0 F (93.3°C)
Hardness	ASTM D- 2240	50 ± 5 D
Tensile strength,	ASTM D-412*	3300 ± 200 psi 22.7±1.38 MPa
Elongation,	ASTM D-412*	300 ± 50 %
Tear,	ASTM D-412*	400 ± 50 pli 70.1±8.77 kNm
Service Temperature		
Dry		-40°F to 250°F -40°C to 121°C
Wet		40°F to 120°F 4.44°C to 48.89°C
Volatile Organic Compounds, (Side A&B Combined)	ASTM D2369-81	0 lbs/gal 0 gm/liter
Recommended Applied Thickness		>2mm
Return to Service:		
Foot Traffic		2-4 hours
Full Service		>24 hours
Taber Abrasion Resistance, ASTM D4060 (CS17 wheel, 1000 cycles, 1 kg load) (maximum)		33mg loss
Water Absorption, (maximum 74°F or 23°C, 24 hours)	ASTM D471	<2.0%
Pull-Off Strength (minimum), ASTM D4541		
Inter-coat adhesion (within recoat time)		Excellent
Concrete (Shot blasted and Primed), substrate failure occurred		>500 psi
Steel (90 um blast profile)		>900 psi
Lineal Shrinkage		1-2%
Resistance to Weathering, Type QUV Weathrometer-2000 hrs. exposure	ASTM G-23	No cracking or blistering. Gloss reduction noticed & minor chalking are noted.

(*These physical properties from sample sprayed with Graco EXP2 @ 2,000 psi minimum, with Fusion Gun AR4242 @150- 160^{0}F. Different machine and parameter will change these properties. User should perform their own independent testing as properties are approximate.)

New and Old Concrete:
Refer to SSPC-SP13/NACE6, or ICRIC 03732: CSP 3-5. New concrete must be cured for 28 days prior to product application. Surface must be clean, dry, sound and offer sufficient profile for product adhesion. Remove all dust, dirt, oil, form release agents, cuing compounds, salts, efflorescence, laitance and other foreign matter by shotblasting and/or suitable chemical means, in accordance with local chemical regulations. Rinse thoroughly, to achieve a pH between 8.0 AND 11.0. Allow to dry completely. If old concrete has a surface that has deteriorated to an unacceptably rough surface, OR611 and sand should be used as a repair agent for cracks, spalls, bug holes and voids. Upon full cure of the repair agent, prime the entire surface intended for coating.

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Concrete Surface Preparation Reference:
ASTM D4258 - Standard practice for cleaning concrete
ASTM D4259 - Standard practice for abrading concrete
ASTM D4260 - Standard practice for etching concrete
ASTM F 1869 - Standard test method for measuring moisture vapor emission rate of concrete
ICRI 03732 - Concrete surface preparation

Wood:
All wood should be clean, dry and free of any knots, splinters, oil, grease or other contaminants. Splintered or rough areas should be sanded. Knots should be repaired using OR811 Primer with sand. Upon full cure of the repair agent, prime the entire surface intended for coating.

Steel (Atmospheric and Immersion Exposure):
Remove all oil, grease, weld spatter and round off any sharp edges from surface. Minimum surface preparation is Near White Metal Blast Cleaning per SSPC-SP10/NACE 2. Optimum surface profile is 2-3 mils. Prime and shoot OR42D on to any bare metal the same day as it is cleaned to minimized any potential flash rusting.

Brass and Copper:
Brass and copper should be blasted with sand, and not with steel or metal grit. Remove all dust and grease prior to applying primer.

Aluminum:
Aluminum should be blasted with aluminum oxide or sand, and not with steel or metal grit. Excessive blasting may result in a warped or deformed surface. After blasting, wash aluminum with a commercially available aluminum cleaner. Allow to dry, then prime with OR811.

Galvanized Surfaces:
Clean and degrease any contaminated surfaces before priming with OR811. Do not blast galvanized surfaces with an abrasive grit. An adhesion test is recommended prior to starting the project.

Fiberglass Reinforced Plastic:
The gel coat should be lightly blasted or sanded with 80 grit sandpaper and cleaned.

Plastic Foams:
Enhanced adhesion is obtained when the foam is mechanically abraded. When coating polystyrene, do not use a solvent-based primer.

Textiles, Canvas, Fabrics:
Adhesion to most fabrics, geothermal membranes and textiles does not require a primer.

Stainless Steel:
Stainless steel may be grit blasted and degreased before priming. Some stainless-steel alloys are so inert that it is not possible to achieve a satisfactory bond. An adhesion test is recommended prior to starting the project.

New and Old Cast Iron:
Blast with a steel grit and degrease before priming. Old cast iron is difficult to prepare for a satisfactory bond. It can absorb oil and water-soluble contaminants that will keep returning to the surface after the coating system has been applied and affect the coating system adhesion. An adhesion test is recommended prior to starting the project.

All Other Surfaces:
An adhesion test is recommended prior to starting the project.

Mixing:
OR42D may not be diluted under any circumstances. Thoroughly mix OR42D Part-B (Resin side) with air driven power equipment until a homogeneous mixture and color is obtained.

Application:
Both Part-A and Part-B material should be preconditioned at 75-80^{0}F before application. Recommended surface temperature must be at least 5^{0}F above the dew point. OR42D should be applied using a plural component, heated, high pressure 1:1 spray mixing equipment like Graco's Reactor, Glass Craft or another equivalent machine may be used. Both Part-A and Part-B materials should be sprayed at a minimum of 2000 psi and at temperatures above 150^{0}F. Adequate pressure and temperature should be maintained at all times. OR42D should be sprayed in smooth, multidirectional passes to improve uniform thickness and appearance.

Storage:
OR42D has a shelf life of one (1) year from date of manufacture in original, factory-sealed containers when stored at a temperature between 60-95°(15-35°C). Part A and Part B drums are recommended to be stored above 60°F. Avoid freezing temperatures. Store drums on wooden pallets to avoid direct contact with the ground. If stored for a long period of time, rotate Part-A and Part-B drums regularly

Limitations:
Do not open until ready to use. Part A and Part B containers must be fitted with a desiccant device during use.

WARNING
This product contains Isocyanates and Curative Material.

Sales and Customer Support 800-625-9577

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