



# Oak Ridge™

## Foam & Coating Systems, Inc.

### OR 42

#### Product Description

OR 42 is a fast setting, rapid curing, 100% solids, flexible, aliphatic, two component spray polyurea with excellent color retention, that can be applied to suitably prepared interior concrete and metal surfaces. Its extremely fast gel time makes it suitable for application down to -20° F. 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. OR 42 offers a tack free time of less than two minutes and exhibits 220% elongation upon curing with 50 Shore D hardness.

#### Features

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

#### Typical Uses

Refineries, Structural Steel, Fertilizer Plants, Warehouse Floors, Mining Operations, Cold Storage Facilities, Plants, Paper and Pulp Mills, Marine Environments, Parking Garage Decks, Secondary Containment-Walkways and Balconies, Water and Wastewater Treatment, Industrial and Manufacturing Facilities, Power Plants

#### 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

OR 42 may be applied at any rate to achieve desired thickness. Theoretical coverage is 80 Sq. Ft. per gallon @ 20 mils

#### 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 contaminants. 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. OR 42 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.

**Suggested primers: OR 711, OR 811, OR E41, wet /green concrete, OR T11**

#### Technical

Mix Ratio by Volume		1A: 1B
Pot Life @ 150°F (65.5°C), 50% R.H.		6-11 Secs
Tack Free Time		40-70 secs
Recoat Time		0-6 hours
Viscosity at 150-160°F (66.5-71°C), Brookfield:		
Part-A		120 ± 20 cps
Part-B		40 ± 20 cps
Density (Side A & B Combined)		8.25 lbs. /gal
Flash Point		> 200° F (93.3°)
Hardness	ASTM D- 2240	50 ± 5 D
Tensile strength,	ASTM D-412*	3300 ± 300 psi
		22.74±2.07MPa
Elongation,	ASTM D-412*	220 ± 20 %
Tear,	ASTM D-412*	400 ± 20 pli
		69.93±3.5 kNm

#### Service Temperature

Dry	-40°F-300°F
Wet	40°F-200°F
VOC Content	0 gm/l
Recommended Applied Thickness	>2mm
Return to Service:	
Foot Traffic	2-4 hours
Full Service	12-24 hours

#### Taber Abrasion Resistance, ASTM D4060

(CS17 wheel, 1000 cycles, 1 kg load) (maximum) 33mg loss

Water Absorption, ASTM D471 (maximum 23°C, 24 hours) <1.0

Crack Bridging, ASTM C836 (-25°C, 1.6mm crack, 25 Cycles) Pass

Pull-Off Strength (minimum), ASTM D4541 Inter-coat adhesion (within recoat time) Excellent

Concrete (Shot blasted profile), substrate failure occurred >500 psi

Concrete (Primed), substrate failure occurred >500 psi

Steel (90 um blast profile) >900 psi

Lineal Shrinkage 1-2%

Flexibility (3mm Medrel Bend Test) ASTM D1737 Pass

Resistance to Weathering, ASTM G-23

Type QUV Weathrometer-2000 hrs. exposure No cracking or blistering.

Gloss reduction noticed & minor chalking are noted.

(\*These physical properties from sample prayed with Graco Foam Cat 200 @ 2,000 psi minimum, with Gusmer GX7-400mechanical purge gun @ 150-160°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, curing compounds, salts, efflorescence, laitance and other foreign matter by short blasting 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, OR711 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.

**Manufacturer of High-Performance Foam/Coatings & Application Equipment**

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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 OR PR811 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 OR 42 on to any bare metal the same day as it is cleaned to minimize any potential flash rusting.

**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 OR PR811.

**Galvanized Surfaces:**

Clean and degrease any contaminated surfaces before priming with OR PR811. 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:**

OR 42 may not be diluted under any circumstances. Thoroughly mix OR 42 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°F before application. Recommended surface temperature must be at least 5°F above the dew point. OR 42 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°F. Adequate pressure and temperature should be maintained at all times. OR 42 should be sprayed in smooth, multidirectional passes to improve uniform thickness and appearance.

**Storage:**

OR 42 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°. 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. This product is considered Dangerous Goods. DOT regulations classify it as:

**PART-A: TOXIC LIQUID, ORGANIC, N.O.S. (Isophorone Diisocyanate), Class 6.1, UN 2810, PG III, TOXIC**

**Part-B: AMINES, liquid, corrosive, N.O.S. (polyoxpro phlyenediamine) Class 8, UN 2735, PGIII, CORROSIVE.**

Sales and Customer Support 800-625-9577

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