

SELECTION & SPECIFICATION DATA

Generic Type	Advanced Thermoset Polymer
Description	<p>Polyclad ARO H is a high performance pipe coating specially designed for the protection of FBE coated pipeline from gouge and mechanical damage during directional drilling or slip bore installations. Polyclad ARO H is a field applied version of Carboline's Polyclad ARO. It may be applied directly over existing pipe coatings as an abrasion resistant overlay (ARO). Polyclad ARO H is suitable for hand application making it ideal for field coating of girthwelds or repair areas. It can also be applied directly to the steel pipe surface when required. It provides superior protection in rocky, rough and mountainous environments by absorbing the destructive energy and minimizing coating damage.</p>
Features	<ul style="list-style-type: none"> • Excellent gouge and abrasion resistance • High crosslink density results in tough film • Excellent adhesion to prepared FBE, Polyclad 975 and other coatings • Protects FBE during directional drilling applications • 100% solids • Hand applied to 50 mils (1.3 mm) in one application • Rapid dry to handle • Fast cure to service
Color	<p>Standard color is Black (0900)</p> <p>Colors are unmatched.</p>
Gloss	Gloss
Primer	Apply over properly prepared coated pipe or otherwise as directed by Carboline Technical Service.
Service Temperature	Maximum operating temperature of 60°C (140°F)
Dry Film Thickness	<p>20 - 50 mils (508 - 1270 microns) per coat</p> <p>Typical DFT is 30 mils</p>
Solids Content	By Volume 100%
Theoretical Coverage Rate	<p>1604 ft²/gal at 1.0 mils (39.4 m²/l at 25 microns)</p> <p>80 ft²/gal at 20.0 mils (2.0 m²/l at 500 microns)</p> <p>32 ft²/gal at 50.0 mils (0.8 m²/l at 1250 microns)</p> <p>Allow for loss in mixing and application.</p>
VOC Values	As Supplied : 0.02 lb/gal. (3g/l)
Limitations	Polyclad ARO H is composed of aromatic based polymers and will tend to chalk and experience some color shift with exposure to UV. This change does not affect performance.

SUBSTRATES & SURFACE PREPARATION

General	Surfaces <u>must</u> be properly cleaned. Employ adequate methods to remove dirt, dust, oil and all other contaminants that could interfere with adhesion of the coating. Contact Carboline for specific recommendations.
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SUBSTRATES & SURFACE PREPARATION

Steel	Polyclad ARO H may be applied directly to blasted steel. The steel must be blasted to a minimum near White Metal Finish (NACE No. 2, SSPC SP 10) with a minimum 3 mil (75 micron) surface profile. Contact Carboline Technical Service for special recommendations if needed.
Previously Painted Surfaces	Polyclad ARO H may be applied over existing pipe coatings including FBE, Polyclad 975, epoxies, and polyurethanes. Prepare existing coating by abrading the surface to remove gloss and create a profile. Wipe the abraded surface with MEK or other approved solvents to clean and remove dust and debris. Methods to abrade the surface include, sweep blasting or sanding the surface using 60 grit sandpaper.

PERFORMANCE DATA

All test data was generated under laboratory conditions. Field testing results may vary.

Test Method	System	Results
ASTM D4541 Adhesion pull off test	One coat of Polyclad ARO H direct to blasted steel	> 2000 psi
ASTM D4541 Adhesion pull off test	One coat of Polyclad ARO H over prepared FBE surface	> 2000 psi
ASTM G-95, 1.5V, 25 C, 30 days	Polyclad ARO H, 1 coat over blasted steel, 30 mils (760 microns)	< 8 mm
Partech Gouge TestR-33 Double-cut burr bit with 50 kg load	One coat of Polyclad ARO H at 35 mils	26 mils gouge depth & passed holiday test
Partech Gouge TestSL-1 Smooth blank bit with 50 kg load	One coat of Polyclad ARO H at 40 mils	16 mil gouge depth & passed holiday test

MIXING & THINNING

Mixing	General Mixing Guidelines: Hand mix Part B until the pigments are dispersed into a homogenous liquid. Add Part A to Part B and mix thoroughly. DO NOT THIN
Thinning	Thinning is not required
Ratio	3:1 by volume (B:A)
Working Time	Approximately 7 min. at 75°F (24°C)

APPLICATION EQUIPMENT GUIDELINES

Listed below are general equipment guidelines for the application of this product. Job site conditions may require modifications to these guidelines to achieve the desired results.

Hand Tools	May be hand applied by first mixing the coating, and then immediately pouring it onto the pipe surface. Spread the coating to desired thickness using a trowel, brush, or roller. Measure the film thickness with wet film gauge.
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APPLICATION CONDITIONS

Condition	Material	Surface	Ambient	Humidity
Minimum	50°F (10°C)	32°F (0°C)	32°F (0°C)	1%
Maximum	90°F (32°C)	110°F (43°C)	120°F (49°C)	85%
Optimum	75°F (24°C)	75°F (24°C)	75°F (24°C)	50%

Product is easier to mix when it is above 70°F. At 90°F, working time is short. Industry standards are for substrate temperatures to be 5°F (3°C) above the dew point. Application and/or curing in humidity above maximum, or exposure to moisture from rain or dew, may result in a loss of gloss, micro bubbling, and/or blistering of the product.

CURING SCHEDULE

Surface Temp.	Cure for Service	Dry to Handle	Dry to Touch
35°F (2°C)	24 Hours	4 Hours	2 Hours
50°F (10°C)	9 Hours	4 Hours	2 Hours
75°F (24°C)	4 Hours	2 Hours	1 Hour

At 75°F (24°C) metal temperature, Polyclad ARO H will reach shore D hardness of 65-70 in 4 hours.

CLEANUP & SAFETY

Cleanup	Use Thinner 2 or 76 for clean up. In case of spillage, absorb and dispose of in accordance with local applicable regulations.
Safety	Read and follow all caution statements on this product data sheet and on the SDS for this product. Employ normal workmanlike safety precautions. Use adequate ventilation. Keep container closed when not in use.
Caution	This product does not contain flammable solvents; however, clean-up solvents that may be used do contain flammable solvents. Keep away from sparks and open flames. All electrical equipment and installations should be made and grounded in accordance with the National Electric Code. In areas where explosion hazards exist, workmen should be required to use non-ferrous tools and wear conductive and non-sparking shoes.

PACKAGING, HANDLING & STORAGE

Packaging	1 Liter (0.26 gallon) Kits 2 Liter (0.52 gallon) Kits 400 ml (100 ml:300ml) cartridge kits (12 kits per carton)
Shelf Life	Part A: 24 months* Part B: 24 months* *Shelf Life: When kept at recommended storage conditions and in original unopened containers.
Storage Temperature & Humidity	40° - 90°F (4° - 32°C) Store indoors and keep dry. Avoid freezing. Do not open until ready to use
Shipping Weight (Approximate)	13 lbs/gal. (5.9 kg/gal) 15 lbs per carton (6.8 kg/carton)
Flash Point (Setflash)	Part A >200°F (>93°C) Part B >200°F (>93°C)

WARRANTY

To the best of our knowledge the technical data contained herein is true and accurate on the date of publication and is subject to change without prior notice. User must contact Carboline Company to verify correctness before specifying or ordering. No guarantee of accuracy is given or implied. We guarantee our products to conform to Carboline quality control. We assume no responsibility for coverage, performance, injuries or damages resulting from use. Carbolines sole obligation, if any, is to replace or refund the purchase price of the Carboline product(s) proven to be defective, at Carbolines option. Carboline shall not be liable for any loss or damage. NO OTHER WARRANTY OR GUARANTEE OF ANY KIND IS MADE BY CARBOLINE, EXPRESS OR IMPLIED, STATUTORY, BY OPERATION OF LAW, OR OTHERWISE, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. All of the trademarks referenced above are the property of Carboline International Corporation unless otherwise indicated.