

Selection & Specification Data

Generic Type	Solvent-free aromatic polyurethane, ASTM D16 Type V
Description	<p>Polyclad 777 Medium Set is a high performance 100% solids structural polyurethane designed to provide superior corrosion protection for steel, ductile iron and concrete pipe. Tenacious adhesion and high impact resistance allow its use in the harshest environments. It forms a dense, long-term impermeable barrier that is ready for service moments after application through a snap-set cure mechanism.</p> <p>Typical uses include steel pipeline exteriors, steel valves & fittings, steel pilings, steel poles (above & below ground), buried tank exteriors, penstocks. No primer is required. Available in snap, fast, medium and slow set times.</p>
Features	<ul style="list-style-type: none"> • Fast curing rate increases throughput • Excellent abrasion resistance • Superior wetting properties for outstanding adhesion • mix ratio 1:1 and user friendly application properties • Can be topcoated with Carbothane series of product • Unlimited build with single multi-pass coats • Compliant with AWWA C222
Color	Yellow 0600 (made to order)
Finish	Gloss
Primer	None needed - direct to steel
Dry Film Thickness	<p>25 - 40 mils (635 - 1016 microns) For most applications on steel.</p> <p>25 - 125 mils (635 - 3175 microns) For other applications on steel, depending on service conditions.</p>
Solids Content	By Volume 100% +/- 1%
Theoretical Coverage Rate	<p>1604 ft²/gal at 1.0 mils (39.4 m²/l at 25 microns)</p> <p>64 ft²/gal at 25.0 mils (1.6 m²/l at 625 microns)</p> <p>13 ft²/gal at 125.0 mils (0.3 m²/l at 3125 microns)</p> <p>Allow for loss in mixing and application.</p>
VOC Values	<p>As Supplied <0.04 lbs/gal (5 g/L)*</p> <p>*Calculated value</p>
Approvals	Meets requirements of AWWA C222-08
Limitations	Due to its aromatic composition Polyclad 777 will tend to yellow or darken in exterior UV exposure. This will not affect performance.
Topcoats	Consult Carboline Technical Service

Substrates & Surface Preparation

General	<p>Steel or ductile iron</p> <p>Remove dirt/dust/grease/oil following SSPC-SP1. Abrasive blast to SSPC-SP10. Achieve a 3-5 mil (75-125 micron) "angular" anchor profile. Ensure dust/smut from blasting operation does not interfere with adhesion, prefer two maximum on ISO 8502-3 test. Apply product prior to any flash rusting or contamination fallout.</p>
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Performance Data

Test Method	System	Results
Abrasion Resistance ASTM D4060	One coat Polyclad 777	58 mg loss
Adhesion to Steel ASTM D4541	One coat Polyclad 777	Min. 1500 psi*
Cathodic Disbondment ASTM G-95	One coat Polyclad 777	<= 9 mm
Chemical Resistance ATSM D543	One coat Polyclad 777	Pass 30 day immersion
Dielectric Strength D149	One coat Polyclad 777	> 700 V/mil
Flexibility ASTM D522	One coat Polyclad 777	Pass 3 inch 180 degrees
Hardness: ASTM D2240 Shore D	One coat Polyclad 777	77 + Shore D
Impact Resistance ASTM D2794	One coat Polyclad 777	128 in-lbs
Impact Resistance ASTM G14	One coat Polyclad 777	101 in-lbs
Tensile Strength ASTM D412	One coat Polyclad 777	4000 + psi
Water Absorption ASTM D570	One coat Polyclad 777	< 1.6%

*Adhesion over 3,000 psi is common with high peak count, surface cleanliness and good adhesive. Preferred adhesives for running adhesion testing are 3M CA-100 and 3M DP-460.

Mixing & Thinning

Mixing	Power mix part B until the pigments are dispersed into a homogeneous liquid. Do not batch mix parts A & B. Do not thin.
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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.

General	Applicators must be knowledgeable with the proper safety guidelines, operation and maintenance of the spray equipment - pumps, hoses, heaters, spray gun.
Airless Spray	Use only heated plural component airless equipment. Plural airless pump must have a 1:1 ratio capability along with 1.25 gallons per minute with a fluid pressure up to 3000 psi. Use a paint system setup that can transfer coatings from heated drums to the proportioners and maintain heated material to the spray tips. Contact Carboline Technical Service for specifics.

Application Conditions

Condition	Material	Surface	Ambient	Humidity
Minimum	125 °F (52 °C)	0 °F (-18 °C)	35 °F (2 °C)	0%
Maximum	150 °F (66 °C)	120 °F (49 °C)	120 °F (49 °C)	85%
Optimum	130 °F (54 °C)	70 °F (21 °C)	70 °F (21 °C)	0%

Industry standards are for substrate temperatures to be 5 °F(3 °C) above the dew point. Caution: this product in the liquid stage is moisture sensitive and needs to be protected from high humidity, dew and direct moisture contact until cured to a firm state. 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.

Note: for applications on concrete, please contact your Carboline representative for proper application procedures.

Polyclad 777 Medium-Set

Curing Schedule

Surface Temp.*	Dry to Touch	Dry to Handle
75 °F (24 °C)	3 Minutes	15 Minutes

Lower metal temperatures will slow the dry time and higher metal temperatures will speed up dry time. Product is ready for holiday testing as soon as it reaches its dry-to-handle state. Maximum recoat time with Carbothane series is 28 days. To topcoat past the maximum recoat time, the surface must be abraded and cleaned. Maximum recoat with itself is two hours.

Cleanup & Safety

- Cleanup** Use Thinners 2 or 76. To clean lines, use Thinner 76 followed by Carboline's Polyclad Line Stabilizer for long term storage. Contact Carboline Technical Service for cleaning recommendations. In case of spills, 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, workers should be required to use non-ferrous tools and wear conductive and non-sparking shoes.

Packaging, Handling & Storage

- Shelf Life** Part A: Min. 12 months at 75 °F (24 °C)
Part B: Min. 12 months at 75 °F (24 °C)
When kept at recommended storage conditions and in original unopened containers.
- Shipping Weight (Approximate)** 9.4 lbs per kit gal (4.3 kg per gal)
- Storage Temperature & Humidity** 60-90°F (16-32°C)
0-100% Relative Humidity
- Flash Point (Setaflash)** Part A 350 °F (177 °C)
Part B 330 °F (166 °C)
- Storage** Store indoors and keep dry. Blanket all partial drums with nitrogen gas to prevent moisture contamination. Avoid freezing. Do not open until ready to use.
- Packaging** 10 gallon, 110 gal, 528 gal and dual cartridge kits



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