

Selection & Specification Data

Generic Type	Solvent-free Aromatic Polyurethane, ASTM D16 Type V
Description	Polyclad 777 is high performance 100% solids structural polyurethane that is 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 quick cure mechanism. No primer is required. Polyclad 777 is available in snap, fast, medium and slow set times.
Features	<ul style="list-style-type: none"> • Rapid curing to increase through put. • Excellent abrasion and impact resistance • Superior wetting properties for outstanding adhesion • 1:1 mix ration and user friendly application properties • Can be top coated with Carbothane aliphatic urethanes • Compliant with AWWA C222 • Unlimited build with single multi-pass coats
Color	Standard colors are: Yellow (0600), Green (0300), Medium Blue (0100), Safety Blue (S100), Purple (S500), Black (0900) and Brown (0200)
Finish	Gloss
Primers	No primer needed, direct to steel.
Dry Film Thickness	25 to 40 mils (625 to 1000μ) for most applications on steel 25 to 125 mils (625-3125μ) for other applications on steel, depending of service condition
Solids Content	By Volume: 100%
Theoretical Coverage Rate	1604 mil ft ² (39.8 m ² /l at 25 microns) 53 ft ² /gallon at 30 mils DFT Allow for loss in mixing and application
VOC Values	As supplied: 0.0 lbs/gal (0 g/l)
Limitations	<ul style="list-style-type: none"> ▪ Due to its aromatic composition, Polyclad 777 will tend to yellow or darken in exterior UV exposure. This will not affect performance.

- Remove dirt/dust/grease/oil following SSPC-SP1
- Abrasive blast to SSPC-SP10
- Achieve a 3 to 5 mil (75 to 125 μ) "angular" anchor profile
- Ensure dust/smut from blasting operation does not interfere with adhesion, prefer 2 maximum on ISO 8502-3 test
- Apply Polyclad 777 prior to any flash rusting or contamination fall-out.

Performance Data

TEST DESCRIPTION	TYPICAL LAB RESULTS
Adhesion to Steel ASTM D4541	> 1500 psi
Hardness ASTM D2240	>70 Shore D
Water Absorption ASTM D570	<2%
Abrasion Resistance ASTM D4060	<75 mg loss
Flexibility ASTM D522	Pass 3 inch 180°
Cathodic Disbondment ASTM G-95	<10 mm
Tensile Strength ASTM D412	>4000 psi
Dielectric Strength D149	>700 V/mil
Impact Resistance ASTM G14	>100 in-lbs
Impact Resistance ASTM D2794	>120 in-lbs
Chemical Resistance ASTM D543	Pass 30 day immersion

Product Uses

Polyclad 777 is a high performance coating that provides long term protection for steel, ductile iron and concrete pipe

[Steel Pipeline Exteriors](#)

[Steel Valves and Fittings](#)

[Steel Piling](#)

[Steel poles \(below and above ground\)](#)

[Buried tank exteriors](#)

[Penstocks](#)

Other applications where it would require high abrasion resistance, rapid cure and superior corrosion protection for steel

Substrates & Surface Preparation

General Guidelines (steel or ductile iron):

The following recommendations are provided as a guideline for optimum performance of Polyclad 777.

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Application Equipment

General:

Applicators must be knowledgeable with the proper safety guidelines, operation, and maintenance of the spray equipment (pumps, hoses, heaters, and spray gun).

Spray Equipment:

Use only heated plural component airless equipment.

- Plural airless pump must have 1:1 ratio capability along with 1.25 gallons per minute with a fluid pressure up to 3000 psi.
- 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.

Mixing & Thinning

General Mixing Guidelines:

- Power mix Part B until the pigments are dispersed in to a homogenous liquid. **DO NOT BATCH MIX A & B.**
- **DO NOT THIN 777.**

Application Conditions

Condition	Material	Surface	Ambient	Humidity
Optimum	135°F (57°C)	80°F (27°C)	70°F (21°C)	35%
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%

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 is available in four different cure speeds:

Cure

	Dry to Touch (75°F)	Dry to Handle (75°F)
Snap-Set	50-60 seconds	4-5 minutes
Fast-Set	70-90 seconds	6-9 minutes
Medium-Set	2.5-3 minutes	13-15 minutes
Slow-Set	5-7 minutes	18-22 minutes

Lower metal temperatures will slow the dry time and higher metal temperatures will speed up dry times. Polyclad 777 is ready for holiday testing as soon as it reaches its dry to handle state.

Polyclad 777 can be top coated by Carbothane aliphatic polyurethane as soon as it is dry to touch. Maximum recoat time with Carbothane series is 28 days. To topcoat pass the maximum recoat time, the surface must be abraded and cleaned.

Maximum recoat with Polyclad 777 with itself is two hours.

Packaging, Handling & Storage:

Packaging	10, 110 & 528 gal. & dual cartridge kits
Shipping Weight (Approximate)	9.4 lb/gal. (4.3 kg/gal.)
Flash Point (Setaflash)	Part A: >325°F (163°C) Part B: >200°F (93°C)
Storage Temperature	60 to 90°F (16-32°C)
Part A (ISO)	Red colored drums or pails
Part B (Resin)	White color drums or pails
Shelf Life*	Part A or B: 12 months

*Shelf Life: (actual stated shelf life) when kept at recommended storage conditions and in original unopened containers.

Storage Condition:

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

Cleanup & Safety

Cleanup

Use Thinner #2 or #76 solvents. 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 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 MSDS for this product. Employ normal workmanlike safety precautions. Persons should wear proper personnel protection equipment.

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.



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