

SELECTION & SPECIFICATION DATA

Generic Type	Two component, Aromatic modified Polyurethane Polyclad 704 is a solvent free, two component Aromatic modified Polyurethane to be applied by brush, EN 10290 Type 3 Class B, ASTM D16 Type V.
Description	Polyclad 704 is a very high performance structural coating. The product is designed to be used on steel pipe exteriors, coating girth welds on steel pipe and other repairs (PE, PP, etc.) as recommended.
Features	• Low ambient temperature cure system (-10°C to +10°C). • Excellent corrosion resistance to marine environments. • Excellent corrosion resistance to buried pipes and tanks. • Excellent resistance to cathodic disbondment. • Excellent resistance to electric insulation (12.000 Volts/mm). • May be applied in a single coat wet on wet at standard dry film thickness of 2.000 µm. • Superior wetting properties and excellent adhesion to steel. • Can be topcoated with CARBOTHANE® series for long term color and gloss retention.
Color	Polyclad 704 part A (base): green Polyclad 704 part B (hardener): brown Green, after components mixture.
Finish	Gloss Due to its aromatic composition Polyclad 704 will tend to yellow, darken and chalk in exterior UV exposure. This will not affect performance.
Wet Film Thickness	Wet on wet, in single coat from 500 µm up to 2000 µm.
Dry Film Thickness	In single coat from 500 µm up to 2000 µm. Consult Carboline Italia Technical Service, for specific recommendations.
Typical Uses	Recommended where coatings complies to EN10290 and ideal for long term high resistance, such as: • External surfaces for sea lines and pipelines, buried or immersed in sea and fresh water. * • External coating for elbows, valves, joints, fittings etc., buried or immersed in sea and fresh water. * • Piles and structures coating of steel and concrete piers. • Jackets coating of off-shore platforms. * • Coating of immersed areas, topsides, splash zone of any steel or concrete surface to be immersed in sea or fresh water. * • External/Internal coat for sea water inlets. * • Touching up of epoxy coatings, PE, PP on surface mechanically damaged areas. * Immersion: For Immersion service, consult Carboline Italia Technical Service, for specific recommendations, regarding fluids types, film thickness etc.
Solid(s) Content	By volume: 100%

Polyclad 704

PRODUCT DATA SHEET



SELECTION & SPECIFICATION DATA

Theoretical Coverage Rates	1000 µm: 0,99 sq.m./lt. Material losses during mixing and application will vary and must be taken into consideration when estimating job requirements. Other factor is wetdry film thickness nearly 5% by volume.
Dry Temp. Resistance	Dry Temp. Resistance: Maximum: 85°C (185 °F) Minimum: -20°C (14 °F) Temperature resistance underground: Continuous: 60°C (140°F)
Substrates & Compatible Coatings	Substrates: May be applied on steel or concrete, and old coats such as polyethylene, polypropylene, bitumen and itself properly prepared. Compatible coatings: May be applied over old coats such as polyethylene, polypropylene, bitumen, epoxies or itself after suitable power tool cleaning or light blasting for roughness.
Viscosity	Thixotropic product.

SUBSTRATES & SURFACE PREPARATION

General	Remove oil and grease from surface to be coated with clean rags soaked in suitable thinner, according to standard SSPC-SP1.
Steel	Grit blasting or other equivalent abrasives in accordance with ISO 8501-1 (SA 2½) to obtain a blast profile between 40-50 µm (Rz-DIN 30671/ISO 8503). (Rz-DIN 30671). On site: the time in between sandblast and application has to be limited to 2 hour max.
Concrete	Concrete must be cured 28 days at 24°C (75°F) and 50% relative humidity or equivalent. Prepare surfaces in accordance with ASTM D4258 Surface Cleaning of Concrete and ASTM D4259 Abrading Concrete. Voids in concrete may require surfacing.

MIXING & THINNING

Mixing	Mix separately Polyclad 704 A (base) and Polyclad 704 B (hardener), then combine and mix to obtain an homogeneous green color.
Thinning	THINNING IS NOT REQUIRED. Thinner use may cause the detachment of applied coating, voiding the results of all tests such adhesion, mechanical resistance and electrical insulation properties.
Ratio	By Volume: Polyclad 704 A (base): 1 Polyclad 704 B (hardener): 0,42 By Weight: Polyclad 704 A (base): 1,3 Polyclad 704 B (hardener): 0,5
Pot Life	25 minutes at 10°C (40°F) and less at higher temperatures. POT-LIFE ENDS WHEN COATING INCREASES VISCOSITY and gets to HOT.

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 | Apply with brush.

Touch Up | Polyclad 704 is not recoatable without special surface preparation when it has Shore D value higher than 65.
SMALL up to 200 sq./cm. Without substrate exposure.
Power tool grinding of damaged areas and application by brush of one coat of Polyclad 704 up to specified DFT.
LARGE or SMALL areas with substrate exposure.
Blast in accordance with ISO 8501-1 (SA 2 ½) of all exposed substrate and roughing the close coating and then apply Polyclad 704 up to specified DFT.

Brush | Apply with a brush having a width of about 5 – 10 cm, with the following procedure:
a) Mix separately Polyclad 704 A and Polyclad 704 B, then add part B to part A and mix. The proper product mix is checked observing the color uniformity after mixing.
b) Allow an induction time on the mixed product of 2 (at 10 °C) - 3 (at 0 °C) minutes.
c) Apply a first coat of Polyclad 704 properly working it by brush to obtain a good saturation and wetting of the substrate.
d) Apply wet on wet, an homogeneous coat to reach the required thickness.
e) During application check WFT frequently.
g) The use of rigid brushes is recommended; alternatively it is recommended for long bristle brushes, cut them for increase the hardness of the pass during application.

Do not exceed in heating because during increasing of temperature the mixture pot-life decreases. The product should not be applied on ambient temperatures above 10°C.

APPLICATION CONDITIONS

Condition	Material	Surface	Ambient	Humidity
Minimum	0°C (32°F)	-10°C (14°F)	-10°C (14°F)	0%
Maximum	23°C (73°F)	20°C (68°F)	10°C (50°F)	90%

Do not apply when the surface temperature is less than 3°C (5°F) above the dew point.
Do not apply on wet surfaces or if there is presence of condensation on surfaces.

CURING SCHEDULE

Surface Temp.	Pot Life	Dry to Handle	Final Cure
-10°C (14°F)	50 Minutes	3 Days	7 Days
0°C (32°F)	40 Minutes	48 Hours	3 Days
5°C (41°F)	35 Minutes	24 Hours	72 Hours
10°C (50°F)	25 Minutes	8 Hours	48 Hours

Inspection and tests, such adhesion, holiday test, impact test and DFT measurements, must be done only when hardness Shore D reaches a value of 75.
Final Shore D >75.

Polyclad 704

PRODUCT DATA SHEET



CLEANUP & SAFETY

Cleanup	Use Thinner#2 In case of spillage, absorb and dispose 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. Hypersensitive persons should wear protective clothing, gloves and use protective cream on face, hands and all exposed areas.
Ventilation	Quando utilizzato all'interno di serbatoi o in aree chiuse, disporre una circolazione d'aria che deve essere mantenuta per tutto il periodo d'applicazione e polimerizzazione. Il sistema di ventilazione deve consentire che la concentrazione dei solventi usati si mantenga al di sotto del limite d'esplosività. In aggiunta alla ventilazione, il personale deve disporre d'idonei respiratori.
Caution	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. The reaction between the two components is exothermic; so the mixture at the end of the pot-life grows heat.

PACKAGING, HANDLING & STORAGE

Shelf Life	Polyclad 704 A: 12 months* at 24 °C (75°F) Polyclad 704 B: 12 months* at 24 °C (75°F) * From manufacturing date inserted on labels, into sealed container.
Storage Temperature & Humidity	Material should be stored at 24°C (74°F). in general, must be kept: between 5-35°C with RH% between 0-90%.
Flash Point (Setaflash)	Solvent free. data on SDS.
Storage	Store Indoors. Material must be stored in cool dry conditions and kept from direct heat or sunlight and frost. In case the hardener is exposed to winter temperatures, this component could be slightly crystallized. This crystallization is reversible by heating the hardener in a water bath.
Packaging	Polyclad 704 A: 1 liter Polyclad 704 B: 0,42 liters

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 to verify correctness before specifying or ordering. No guarantee of accuracy is given or implied. Carboline warrants our products to be free of manufacturing defects in accord with applicable Carboline quality control procedures. THIS WARRANTY IS NOT VALID WHEN THE PRODUCT IS NOT: (1) APPLIED IN ACCORDANCE WITH CARBOLINE'S SPECIFICATIONS, AND/OR (2) PROPERLY STORED, CURED, AND USED UNDER NORMAL OPERATING CONDITIONS. Carboline assumes no responsibility for coverage, performance, injuries, or damages resulting from use of the product. If this product is found not to perform as specified upon inspection by a Carboline representative during the warranty period, Carboline's sole obligation, if any, is to replace the Carboline product(s) proven to be defective or refund the purchase price thereof, at Carboline's sole option. Carboline shall not be liable for any other losses or damages. This warranty excludes (1) labor and costs of labor for the application or removal of any product, and (2) any incidental or consequential damages, whether based on breach of express or implied warranty, negligence, strict liability or any other legal theory. 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. The whole text of this Product Data Sheet, as well as the documents derived from it, have been written in English, and for legal purposes the English version shall prevail.