



**Protective
&
Marine
Coatings**

**PIPECLAD® 2040 FLEX
ABRASION-RESISTANT OVERCOAT**



Revised: March 29, 2021

PRODUCT INFORMATION

PRODUCT DESCRIPTION

PIPECLAD 2040 FLEX Abrasion-Resistant Overcoat (ARO) is a thermosetting epoxy powder coating engineered to be applied over the Pipeclad 2000 family of fusion bonded epoxy corrosion resistant coatings. These dual layer powder systems provide extremely robust protective coatings to the outside of pipes protecting against corrosive elements and damage throughout storage, transit, construction and service of the pipeline, including during horizontal directional drilling.

PRODUCT CHARACTERISTICS

Color: Black or Brown

Moisture Content
(CSA Z245.20 Section 12.4): <0.5%

Particle Size
(CSA Z245.20 Section 12.5): Larger than 250 microns (10 mils) <0.2%
Larger than 150 microns (6 mils) <3.0%

Density
(CSA Z245.20 Section 12.6): 1.59 ± 0.05

Recommended Coating Thickness:

Dry microns (mils) - Minimum	Dry microns (mils) - Maximum
254 (10)	1,524 (60)

Other thicknesses may be used depending on application conditions and requirements. Contact your Sherwin-Williams representative for assistance.

Gel Times and Cure Times:

Gel Time @ 204°C/400°F	
Fast gel:	8.5 seconds ± 20%
Slow gel:	18 seconds ± 20%
Cure Time @ 232°C/450°F	
Fast gel:	45 seconds
Slow gel:	90 seconds

Shelf Life:	12 months if stored below 27°C (80°F).
Specific Gravity:	1.59 ± 0.05
Theoretical Coverage:	0.630 m ² /kg per mm (121 ft ² /lb per mil)
Operating Temperature Range:	-73°C (-100°F) to 110°C (230°F)
Quench Time:	Depends on pipe wall thickness, line speed and temperature.

PERFORMANCE CHARACTERISTICS

Test Name	Test Method	Results	
Cathodic Disbondment	CSA Z245.20 Section 12.8	24 hours, -3.5V, 65°C	2.1 mm avg.
		48 hours, -1.5V, 65°C	1.2 mm avg.
		28 days, -1.5V, 80°C	6.1 mm avg.
Cathodic Disbondment (Strained Coating)	CSA Z245.20 Section 12.13, 28 days, -1.5V, 20°C, 1.5°/PD	No cracking	
Dielectric Strength	ASTM D149, Breakdown Voltage	>600V/mil	
Flexibility	CSA Z245.20 Section 12.11, fixed mandrel bend, -30°C	>2.5° per pipe diameter length	
Gouge Resistance	CSA Z245.20 Section 12.15, 50kg	11% at -30°C 25% at 50°C	
Hardness	ASTM D2240, Shore D	86	
Hot Water Resistance	CSA Z245.20 Section 12.14	24 hours, 75°C	1 Rating
		28 days, 75°C	1 Rating
Impact Resistance	CSA Z245.20 Section 12.12, 16 mm ball, 3.0J, -30°C	No holidays	
Porosity	CSA Z245.20 Section 12.10, Cross Section	1 Rating	
Volume Resistivity	ASTM D257, Through film, 500V	>1.0 x 10 ¹⁴ ohm-cm	
Yield Strength	ASTM D2370, Tensile Test	>7,200 psi	



Protective & Marine Coatings

PIPECLAD® 2040 FLEX ABRASION-RESISTANT OVERCOAT



Revised: March 29, 2021

PRODUCT INFORMATION

ADDITIONAL INFORMATION

APPLICATION:

Factors such as plant capability, specifications, and pipe construction or characteristics can affect application conditions. Generally recommended application temperature range for FBE systems is 232-253°C (450-488°F)*. Apply corrosion coating by electrostatic spray or fluidized bed dipping. The ARO coating should be applied immediately after corrosion coating. Allow to cure by residual heat before quench.

*Curing conditions outside of these ranges is possible; please consult a Sherwin-Williams representative for details.

SURFACE PREPARATION:

Remove all surface contamination before abrasive blasting. Blast clean using steel grit to SSPC SP-10-near-white metal with a minimum surface profile of 2 mils (50 microns).

STORAGE AND HANDLING:

Store below 27°C (80°F). Protect from temperatures above 33°C (91°F). If stored below the application room temperature, allow to warm to room temperature before opening. Refer to the safety data sheet for more information.

COATING REPAIR:

Damage less than 0.023 m² (36 in²) - Repair using Pipeclad 5000 or Pipeclad 970G patching systems following the instructions on the data sheet. Pipeclad Patch Stick may be used if allowed by the pipe coating applicator and pipe owner.

DISCLAIMER

The information and recommendations set forth in this Product Data Sheet are based upon tests conducted by or on behalf of The Sherwin-Williams Company. Such information and recommendations set forth herein are subject to change and pertain to the product offered at the time of publication. Consult your Sherwin-Williams representative to obtain the most recent Product Data Information and Application Bulletin.

SAFETY PRECAUTIONS

Refer to the SDS sheet before use.

Published technical data and instructions are subject to change without notice. Contact your Sherwin-Williams representative for additional technical data and instructions.

WARRANTY

The Sherwin-Williams Company warrants our products to be free of manufacturing defects in accord with applicable Sherwin-Williams quality control procedures. Liability for products proven defective, if any, is limited to replacement of the defective product or the refund of the purchase price paid for the defective product as determined by Sherwin-Williams. NO OTHER WARRANTY OR GUARANTEE OF ANY KIND IS MADE BY SHERWIN-WILLIAMS, EXPRESSED OR IMPLIED, STATUTORY, BY OPERATION OF LAW OR OTHERWISE, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.