

CE-266
09/13 Supersedes 01/99

PENNCOAT[®] 221 LINING

DESCRIPTION

PENNCOAT 221 Lining is a premium quality 80 mil flake filled novolac epoxy polymer lining applied in two 40 mil WFT coats. No primer is needed for steel substrates. When used on concrete substrates, it is used in conjunction with PENNTROWEL[®] Epoxy Primer (CE-139). **Consult Corrosion Engineering specification [CES-342](#) for complete installation details.**

AREAS OF USE

Used as a chemical resistant lining for continuous immersion service on concrete and steel. PENNCOAT 221 may be spark tested on steel substrates.

Used as a concrete floor lining both interior or exterior, which is exposed to foot traffic, fork truck traffic, chemical splash and spillage, or as a secondary containment coating system.

Suitable as a process vessel lining within its chemical and temperature limitations.

Used to protect steel ducts, stacks, and associated vessels and air pollution control equipment from corrosive acids and fumes. PENNCOAT 221 has a maximum service temperature of 270°F in corrosive flue gas environments.

NOTE: As with many epoxy based linings, PENNCOAT 221 will discolor when exposed to sunlight or certain chemicals. If the chemical exposure is within the recommended limits of the PENNCOAT 221, this discoloration is not a sign of a lining failure. For example, the following color changes can be observed: strong sulfuric acid from gray to red, 37% hydrochloric acid from gray to blue gray, 20% nitric acid from gray to deep red, and sunlight from gray to greenish gray. PENNCOAT 221 is a sophisticated chemical resistant lining for severe chemical exposure and therefore not intended as an architectural/aesthetic finish.

OUTSTANDING FEATURES

- PENNCOAT 221 utilizes premium quality novolac resin technology and shows excellent resistance to a wide range of acids, alkalies, and solvents including strong sulfuric acid and 37% hydrochloric, and others.
- PENNCOAT 221 is flake filled resulting in significantly improved permeation ratings compared to non flake filled systems.
- PENNCOAT 221 is easily installed by flat trowel. Suitable for vertical and overhead surfaces.
- PENNCOAT 221 exhibits excellent adhesion to properly prepared concrete and steel surfaces.

TYPICAL PHYSICAL PROPERTIES

PROPERTY	PENNCOAT 221
Color of Cured Lining	Basecoat - white; Topcoat - concrete gray
Taber Abrasion (CS-17 Wheel)	59 (1000 gm load, 1000 cycles)
Moisture Permeability (ASTM E96)	0.0021 Perm-Inch
VOC Content	PENNCOAT 221 is 100% reactive. Contains no VOC's.
Barcol Hardness (Shore 'D')	>90
Flexural Strength (ASTM C580)	7000 psi
Adhesion	Sandblasted steel - 3100-3400 psi in 7 days Concrete - Greater than concrete tensile strength
Tensile Strength (ASTM C307)	3100 - 3400 psi at 7 days
Mix Ratio of Resin to Hardener	3:1(by weight); 2.5 : 1 (by volume)
Maximum Service Temp	180°F wet in splash and spill 270°F in flue gas environments
Work Life/Tack Free Time/Complete Cure Time:	@ 50°F (10°C) - 55-75 minutes / 10-12 hours / 72 hours @ 70°F (23°C) - 35-45 minutes / 6-7 hours/ 48 hours @ 90°F (32°C) - 20-30 minutes/ 4-5 hours/ 24 hours

ESTIMATING/PACKAGING THEORETICAL QUANTITIES – NO OVERAGE ALLOWANCE

PRODUCT	CODE	PACKAGING	COVERAGE
PENNCOAT 221 Basecoat Resin White	19587	1.8 gal (18 lbs)	1 x 2.5 gal unit of basecoat consists of 1 x 1.8 gal pail resin, and 1 x 0.7 gal pail hardener and will cover 100 sf/unit @ 40 mils WFT
PENNCOAT 221 Hardener	19586	0.7 gal (6 lbs)	
PENNCOAT 221 Topcoat Resin Gray	19585	1.8 gal (18 lbs)	1 x 2.5 gal unit of basecoat consists of 1 x 1.8 gal pail resin, and 1 x 0.7 gal pail hardener and will cover 100 sf/unit @ 40 mils WFT
PENNCOAT 221 Hardener	19586	0.7 gal (6 lbs)	

SAFETY PRECAUTIONS / DISCLAIMER

Mixes and applications of this product present a number of hazards. Read and follow the hazard information, precautions and first aid directions on the individual product labels and [material safety data sheets](#) before using. While all statements, technical information, and recommendations contained herein are based on information our company believes to be reliable, nothing contained herein shall constitute any warranty, express or implied, with respect to the products and/or services described herein and any such warranties are expressly disclaimed. We recommend that the prospective purchaser or user independently determine the suitability of our product(s) for their intended use. No statement, information or recommendation with respect to our products, whether contained herein or otherwise communicated, shall be legally binding upon us unless expressly set forth in a written agreement between us and the purchaser/user.



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