

PUR-CLUM : URETHANE-CEMENT

TECHNICAL DATA SHEET

DESCRIPTION

PUR-CLUM is a self-levelling, medium to heavy duty, three-components; water dispersed polyurethane-based cement and aggregate screed. It is designed to provide excellent resistance to abrasion, impact, and chemical attack. PUR-CLUM can be broadcast with quartz aggregate to increase surface texture and slip resistance. The system is typically installed at 3/16 to 1/4 in (4.5 to 6 mm) thickness.

RECOMMENDED USES

PUR-CLUM floors are primarily used to protect concrete substrates. Typically used in food processing plants, wet & dry process areas, freezers & coolers, dairies, breweries, wineries, distilleries, laboratories, chemical process plants, pulp and paper plants, warehouses and storage areas.

CHARACTERISTICS AND ADVANTAGES

- Can be applied onto 7 to 10 day old concrete after adequate preparation and where substrate has tensile bond strength in excess of 1.5 MPa (218 psi).
- Resists a very wide range of organic and inorganic acids, alkalis, amines, salts and solvents.
- Similar coefficient of thermal expansion to concrete allowing movement with the substrate through normal thermal cycling. It will perform and retain its physical characteristics through a wide temperature range from -40°F (-40°C) up to 248°F (120°C).
- Bond strength in excess of the tensile strength of concrete, concrete will fail first.
- Behaves plastically under impact; deforms but will not crack or debond.
- High abrasion qualities result from its pure silica aggregate structure.
- Highly resistant to fungi and mold growth.

TECHNICAL DATA

PACKAGING	PART A (RESINE): 10.36 lbs (4.7 kg) PART B (HARDENER): 10.36 lbs (4.7 kg) PART C (CEMENT): 44.09 lbs (20 kg)
COLOR	PART A: On request PART B: Amber MIX: White Powder
RECOMMENDED THICKNESS	1/4 in (6 mm) / (60 ft ² /GAL)
SHELF LIFE	Parts A and B: 12 months in original unopened factory sealed containers. Protect from freezing. Part C: 6 months in original unopened packaging. Store dry between 50-77°F (10-25°C).
MIX RATIO	Mix full units only
POT LIFE	20-25 minutes at 68°F (20°C) / 1/4 in (6 mm)
VOC (G/L)	1.2 g/L
APPLICATION TEMPERATURE	45°F (7°C) min. / 86°F (30°C) max.
SERVICE TEMPERATURE	-40°F (-40°C) min. / 248°F (120°C) max.

PROPERTIES

@ 73°F (23°C) AND 50% R.H.

DENSITY (KG/L)	1.9
SOLIDS CONTENT, BY WEIGHT (CLEAR)	PART A: 92% PART B: 75% MIX: 83%
CURING DETAILS	FOOT TRAFFIC: 10-12 hours at 68°F (20°C) / 1/4 in (6 mm) LIGHT TRAFFIC: 14-16 hours at 68°F (20°C) / 1/4 in (6 mm) FULL CURE: 5 days at 68°F (20°C) / 1/4 in (6 mm)
THINNER RECOMMENDED	Xylene
SOFTENING POINT	266°F (130°C)
ABRASION RESISTANCE, ASTM D4060 TABER ABRASER CS-17 WHEEL / 1000G (2.2 LBS.) / 1000 CYCLES	6 mg loss
BOND STRENGTH, ASTM D4541	> 1.9 MPA (275 psi) (substrate failure)
COEFFICIENT OF THERMAL EXPANSION ASTM D696	0.89x10 ⁻⁵ in/in/°F (1.6x10 ⁻⁵ mm/mm/°C)
TENSILE STRENGTH ASTM C307	7.2 MPa (1045 psi)
WATER ABSORPTION ASTM C413	0.12%
IMPACT RESISTANCE	6.81 joules (5.02 ft-lb) at 3mm (1/8 in) of thickness
RESISTANCE TO MOLD GROWTH, ASTM D3273	Rated 10 (highest resistance)
RESISTANCE TO FUNGI GROWTH, ASTM G21	Rated 0 (no growth)
HARDNESS, SHORE D	82-87
FLOW	325 mm (12.80 in)
COEFFICIENT OF FRICTION, ASTM D1894-61T	Steel: 0.3 Rubber: 0.5
INDENTATION MIL-PRF-24613	0%
THERMAL COMPATIBILITY, ASTM C884	Pass
COMPRESSION STRENGTH (PSI (MPA)), ASTM C579	After 24 hours – 3300 psi (22.7 MPa) After 7 days – 5500 psi (38 MPa) After 28 days – 5950 psi (41 MPa)
CHEMICAL RESISTANCE	Please contact a PUREPOXY technical sales representative
FLEXURAL STRENGTH ASTM C580	16.2 MPa (2350 psi)

* Times are approximate and will be affected by changing ambient conditions, especially changes in temperature and relative humidity.

* The indicated mileage is calculated for flat surfaces. A porous or imperfect surface will require more material in order to cover the same mileage. *

SURFACE PREPARATION

Concrete surfaces must be clean and sound. Remove all dust, dirt, existing paint films, efflorescence, exudates, laitance, form oils, hydraulic or fuel oils, brake fluid, grease, fungus, mildew, biological residues or any other contaminants which may prohibit good bond. Prepare the surface by any appropriate mechanical means. The compressive strength of the concrete substrate should be at least 25 MPa (3625 psi) at 28 days and a minimum of 1.5 MPa (218 psi) in tension at the time of application. Repairs to cementitious substrates, filling of blowholes, levelling of irregularities, etc. should be carried out using an appropriate mortar.

Expansion joints: should be provided in the substrates at the intersection of dissimilar materials. Isolate areas subject to thermal stresses, vibration movements or around load-bearing columns and at vessel sealing rings.

MIXING

Mixing will be affected by temperature; condition materials for use to 60 -70°F (15 -21°C). Premix components A and B separately, make sure all pigment is uniformly distributed. Start mixer; add component A and component B blend for 30 seconds. Add component C (powder) pouring slowly over a period of 15 seconds. DO NOT DUMP! Allow component C to further blend for 2 more minutes to ensure complete mixing. During the operations, scrape down the sides and bottom of the container with a flat or straight edge trowel at least once (Components A+B+C) to ensure complete mixing. Mix full units only.

APPLICATION

Body coat: Priming of concrete substrates is not usually required under typical circumstances. However, due to variations in concrete quality, surface conditions, surface preparation and ambient conditions, reference test areas are recommended to determine whether priming is required to prevent the possibility of blisters, debonding, pinholes and other aesthetic variations. Mix and pour the PUR-CLUM materials on the floor. Spread to the desired thickness using a notched squeegee, trowel or screed bar. Take care to spread newly mixed materials across the transition of previous applied mixes before the surface begins to set. Immediately spike roll the surface to release trapped air in the matrix. If required, quartz aggregates can be broadcast on to the PUR-CLUM wet surface. Evenly distribute the matching solid colour aggregate by hand, covering all areas to avoid bald spots. Allow a minimum 10 hours cure period at 68°F (20°C) before foot traffic. As a second option, selected mineral aggregates can be broadcast on to the wet surface and sealed with a top coat of PUR-CPT to lock in the aggregate. This application method requires a minimum 14 hours cure period at 68°F (20°C) before foot traffic, see PUR-CPT Technical Data Sheet.

RESTRICTION ON USE

- Do not apply below 43°F (6°C) or above 86°F (31°C) / maximum relative humidity 85%.
- If any moisture is detectable according to ASTM D4263 Test Method (for indicating moisture in concrete by the polyethylene sheet method) where WUCT cementitious thin screeds and coatings are to be installed, additional tests must be done to quantify the actual relative moisture content or vapour drive.
- Do not apply to porous surfaces where significant moisture vapour transmission (out-gassing) will occur during application.
- Do not apply to polymer modified cement mortars (PCC) that may expand when sealed with an impervious resin.
- Do not apply to water-soaked, glistening-wet concrete substrates.
- Do not apply to un-reinforced sand cement screeds, asphaltic or bitumen substrate, glazed tile or non-porous brick, tile and magnesite, copper, aluminium, soft wood, or urethane composition, elastomeric membranes, fibre reinforced polyester (FRP) composites.
- Do not apply to concrete if air or substrate temperature is within 5°F (3°C) of dew point.
- Protect substrate during application from condensation from pipes or any overhead leaks.
- Do not apply to vertical or overhead surfaces.
- Do not featheredge.
- Do not mix WUCT CEMENTITIOUS materials by hand; mechanical mix only.
- Do not apply to cracked or unsound substrates.
- Do not use on exterior, on-grade substrates; for interior use only.
- Do not apply to surfaces where moisture vapour can condense and freeze.
- Colour uniformity cannot be completely guaranteed from batch to batch.
- Some light custom colours may produce noticeable shade variations between PUR-CLUM systems (e.g. difference between floor and coving mortars). In order to achieve a uniform appearance, the use of top coats may be required.

CLEANING

Clean all tools and equipment immediately after use with an appropriate cleaner. Cured material can only be removed by mechanical means.

HEALTH AND SAFETY

In case of skin contact, wash with water and soap. In case of eye contact, immediately rinse with water for at least 15 minutes. Consult with a doctor. For respiratory problems, transport victim to fresh air. Remove contaminated clothes and clean before reuse.

Components A, B, and C contain toxic ingredients. Prolonged contact of this product with the skin is susceptible to provoke an irritation. Avoid eye contact. Contact with may cause serious burns. Avoid breathing vapors release from this product. This product is a strong sensitizer. Wear safety glasses and chemical resistant gloves. A breathing apparatus filtering organic vapors approved by the NIOSH/MSHA is recommended. Predict suitable ventilation.

Consult the material safety data sheet for further information.

IMPORTANT NOTICE

All statements, recommendations and technical information contained in this document are accurate to the best knowledge of PurEpoxy. The data relates only to the specific material designated herein. It may not be valid if used in combination with any other materials. It is the users' responsibility to verify suitability of this information for their own particular use, and to test this product before use. PurEpoxy assumes no legal responsibility for use upon these data. PurEpoxy assumes no legal responsibility for any direct, indirect, consequential, economic, or any other damage except to replace the product or refund the purchase price as set out in the purchase agreement.