

WALL SYSTEM GUIDE

Eco-DQS™ - Troweled

Decorative Quartz System



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DESCRIPTION:

High build troweled wall system consisting of 100% solids epoxy binder, colored quartz aggregate and a high solids, two component, aliphatic urethane topcoat.

USES:

- Schools, universities, etc.
- Pharmaceutical facilities, laboratories
- Healthcare facilities and clean rooms
- Locker rooms and showers

ADVANTAGES:

- Light stability--Eco-TCU™ and the decorative quartz both resist yellowing
- Superior Abrasion Resistance Over Epoxies
- Reduced Steps
- Creates an attractive surface where appearance is important
- Complies with SCAQMD VOC regulations. LEED credits available.

STORAGE: Materials should be stored indoors between 65°F (18°C) and 90°F (32°C).

SHELF LIFE: One year from date of manufacture.

PACKAGING OPTIONS / PART NUMBERS:

Eco-MPE™: 3 gal (11.34 L) = 370503
Eco-PT™ Topcoat: 2 gal (7.56 L) = 370516
 15 gal (56.7 L) = 370650

Eco-TCU:

4.0 gallons (15.12 L) = 9001270

Quartz / Solids - 50 pound bag

Blend ratio for Troweled quartz is 5 quarts Q-Grade (trowel), 2 quarts F-Grade (broadcast), 1 quart Epoxy Part A (½ Eco-MPE / ½ Eco-PT Topcoat) and 1 pint Epoxy Part B. For Q-Grade and F-Grade Quartz part numbers, refer to Coatings Price List or contact Tennant Customer Service for assistance.

OPTIONS:

Eco-URE/OP™ can be used to seal troweled quartz applications where long-term light stability is not needed.

Cove: A seamless, smooth transition can be created between the flooring and wall. Call Technical Support for assistance or see bulletin on Cove Installation.

Satin: Decrease the gloss by topcoating with a thin coat of Eco-HTS 100.

LIMITATIONS:

Contamination (Fisheyes): Product may fisheye if oil, silicones, mold release agents or other contaminants are present.

Bubbles: Using more than 10 mils of Eco-TCU to seal troweled quartz may cause bubbles.

Property / Test Method	Results - Eco-MPE	Results - Eco-TCU
Flash Point °F/C Seta Closed Cup / ASTM D3278	A - >200 / 93 B - >200 / 93	A - 125 / 93 B - 138 / 93
Percent Solids, by wt / ASTM D2369	A - 99.4 B - 99.8	A - 88.4 B - 93.6 A/B - 90.6
Density lb/gal / kg/L / ASTM D1475	A - 9.22 / 1.11 B - 8.39 / 1.00 A+B - 8.94 / 1.07	A - 8.54 / 1.03 B - 9.46 / 1.13 A/B - 8.91 / 1.07
Viscosity, cps Brookfield / ASTM D2196	A - 700-1000 B - 350-550 A+B - 500-700	A - 175-225 B - 600-650 A/B - 275-375
Volatile Organic Compound - VOC lb/gal (g/L) / ASTM D3960	Mixed A + B 0.04 (4)	A/B 0.8 (100)

CURED COATING PROPERTIES (DRY FILM):

Property / Test Method	Wall System
*Abrasion Resistance, Taber Abraser / ASTM D4060	70-90 ¹ mg loss
*Bond Strength / ASTM D4541 Elcometer Model 106	>500 psi ²
Compressive Strength / ASTM D695	13,500 (93.079) psi (MPa)
*Tensile Strength / ASTM D2370	8,000 (55.158) psi (MPa)
*Percent Elongation / ASTM D2370	7
Sward Hardness / ASTM D2240	35-40 (1 mil film)
Shore D Hardness / ASTM D2240	80-85 @ 0 sec 75-80 @ 15 sec
*König Hardness / ASTM D4366	154 (1 mil / 25.4 micron film)
Water Absorption / ASTM D570 (24 hours)	0.2% weight increase
*Resistance to Yellowing / ASTM G53	<20 increase to yellow value after 1000 consecutive hours exposure to UV ³

Results are based on conditions at 77°F (25°C), 50% RH.

¹CS-17 Taber Abrasion Wheel, 1,000 gram load, 1,000 revolutions

²Result dependent on cohesion of concrete. Field result.

³UVA-351 bulbs, intensity .87 w/m² at 340 nm

*Results apply to Eco-TCU (topcoat). All others apply to Eco-MPE (binder).

APPLICATION CHARACTERISTICS:

Coverage rate will depend upon application coating thickness as well as the texture and porosity of the concrete.

	Eco-TCU	Eco-MPE/Quartz
Coverage Rate	160-267 ft ² /gal	39 ft ² /mix
Application Thickness	6-10 mils	1/16"

CHEMICAL RESISTANCE

CLEAR - ECO-TCU	1 Day	7 Days
Acids, Inorganic		
10% Hydrochloric Acid	E	E
30% Hydrochloric Acid (Muriatic)	E	G
10% Nitric Acid	E	F
50% Phosphoric Acid	E	G
37% Sulfuric Acid (Battery Acid)	E	G
Acids, Organic		
10% Acetic Acid	E	F
10% Citric Acid	E	E
Oleic Acid	E	E
Alkalies		
10% Ammonium Hydroxide	E	E
50% Sodium Hydroxide	E	E
Solvents (Alcohols)		
Ethylene Glycol (Antifreeze)	E	E
Isopropyl Alcohol	F	P
Methanol	G	F
Solvents (Aliphatic)		
d-Limonene	E	G
Jet Fuel - JP-4	E	E
Gasoline	E	G
Mineral Spirits	E	E
Solvents (Aromatic)		
Xylene	F	P
Solvents (Chlorinated)		
Methylene Chloride	P	P
Solvents (Ketones & Esters)		
Methyl Ethyl Ketone (MEK)	P	P
Propylene Glycol Methyl Ether Acetate (PMA)	F	P
Miscellaneous Chemicals		
20% Ammonium Nitrate	E	E
Brake Fluid	G	F
Bleach	E	E
Motor Oil (SAE 30)	E	E
Skydrol® 500B	G	P
Skydrol® LD4	G	P
20% Sodium Chloride	E	E
1% Tide® Laundry Soap	E	E
10% Trisodium Phosphate	E	E

Based on 1-day and 7-day spot testing on concrete.
Coating cured 2 weeks prior to testing.

Legend:

E - Excellent (No Adverse Effect) - Recommended.
G - Good (Limited Adverse Effect--such as softening or staining) - Use for short-term exposure only.
F - Fair (Moderate Adverse Effect) - Not recommended.
P - Poor (Unsatisfactory) - Little or no resistance to chemical.

Note: Reduced chemical resistance and increased staining is possible in pigmented versions of this system.

Tide® is a registered trademark of Proctor and Gamble.
Skydrol® is a registered trademark of Monsanto.

IMPORTANT:
READ AND FOLLOW ALL PRECAUTIONS AND INSTRUCTIONS BEFORE PROCEEDING.

PRELIMINARY WALL INSPECTIONS

CHECK THE WALL: Wall must be structurally sound and free of curing membrane, paint or other sealer. If you suspect that the concrete has been previously sealed, call Tennant Company, technical support for further instructions.

CHECK THE TEMPERATURE AND HUMIDITY: Wall temperature and materials should be between 65°F (18°C) and 90°F (32°C). **Humidity must be less than 70%** or the result may be a hazy appearance. **DO NOT** coat unless floor temperature is more than five degrees over the dew point.

APPLICATION EQUIPMENT

- Protective clothing
- Jiffy® Mixer Blade
[Tennant Part No. 08643-1 (1 gal) or 08643-5 (5 gal)]
- Slow speed drill (500 rpm or less)
- Roller Assembly
- 3/8" Nap Roller (≤9")
- Trowel (stainless steel), (4" x 12") Pool Trowel or (3" x 12") finishing trowels
- Halogen Work Lights
- Cove trowel
- Masonry/Drywall Hawk
- Cove Strip
- Margin Trowel
- Window Squeegee
- Empty Pail
- Step Ladder

ASSEMBLE EQUIPMENT: Due to the limited pot life of the material, all application equipment, etc. should be ready for immediate use.

Isolation or expansion joints must be cut and filled with a flexible material designed for this purpose.

APPLICATION - PRIMER

Eco-DQS Troweled is applied over Eco-PT Topcoat as primer at 200 ft² per gallon.

ADD ECO-MPE / ECO-PT TOPCOAT PART B TO ECO-PT TOPCOAT PART A and mix well using a Jiffy mixer blade and slow speed drill. **NOTE:** *Eco-MPE may be used instead of Eco-PT Topcoat. Add Cab-O-Sil® at the rate of two gallons of Cab-O-Sil® per 3 gallons of Eco-MPE.*

MIX FOR 2-3 MINUTES. POTLIFE: *Mix only enough material which can be applied within 20 minutes.*

IMMEDIATELY POUR ALL OF THE MIXED MATERIAL into an applicator tray.

USING A 3/8" NAP ROLLER, evenly apply the primer to the wall.

LIGHTLY BROADCAST Q-grade (trowel) quartz into the wet primer and allow to dry.

ONCE SET UP, PRIME AGAIN with Eco-PT Topcoat before overlaying.

APPLICATION - OVERLAY

COVERAGE RATE:

One mix of Eco-DQS Troweled will nominally cover:
39 ft² @ 1/16"

ADD ECO-MPE PART B (1 pint) TO ECO-MPE PART A (1 pint) AND ECO-PT TOPCOAT PART A (1 pint) into a pail and mix with Jiffy blade. **POTLIFE:** *Mix only enough material which can be troweled in a 15-minute period. Mix for one minute.*

WHILE CONTINUING TO MIX RESIN, SLOWLY ADD 5 QUARTS OF Q-GRADE (trowel) BLEND AND 2 QUARTS OF F-GRADE (broadcast) BLEND QUARTZ. NOTE: Do not mix together the trowel and broadcast quartz before adding to the resin as the broadcast quartz will settle out from the trowel-grade quartz. Mix until uniform (approximately one minute). The resin needs to only wet out the quartz.

TRANSFER THE MIXED MATERIAL onto the drywall hawk. If the material is too thick or thin, it will be more difficult to level.

LIGHTLY APPLY material to the wall using a flat, hand trowel. Allow excess overlay to fall to the floor. **NOTE:** To achieve desired look/thickness, it is best to lightly apply the quartz mixture onto the wall—filling the voids of the quartz that was broadcast into the primer. Remove excess.

USE HAND TROWELS to compact and smooth material.

NOTE: This system cannot be ground to remove defects, because the color of the quartz is changed in a manner that is not consistent. Extreme care must be taken to ensure that the wall is troweled smooth with no trowel marks or open surface areas evident. It is extremely difficult to see troweling defects with normal overhead lighting. Therefore, it is recommended that all overhead lighting be turned off and floor lights be used to light the area during application.

ALLOW MATERIAL TO CURE 6-8 HOURS [at 75°F (24°C)], before topcoating. Allow more time at low temperatures.

APPLICATION OF SEAL COATING

We recommend sealing the troweled quartz with thickened Eco-TCU for light stability. Eco-URE/OP can be used in a similar manner for applications that do not require long-term light stability. Eco-MPE will show yellowing faster.

NOTE: DO NOT use Eco-RCE/F™ or Eco-RCE™ to seal troweled quartz as these epoxies will yellow/amber more quickly.

ECO-TCU COVERAGE RATE: The seal coating should be applied in multiple thin coats, approximately 4-6 mils per coat. The intent is to fill in any voids without leaving excessive milage on the surface. **NOTE:** Material applied >6 mils will dry milky.

PREMIX PART A using a Jiffy® mixer blade and slow speed drill.

Add Cab-O-Sil® (TS720) at the rate of two gallons of Cab-O-Sil® per unit of Eco-TCU.

ADD ECO-TCU™ PART B TO PART A. POTLIFE: Mix only enough material which can be applied within the work time (time between the addition of Part B to Part A and the completion of all application actions). Check the following chart for work times at various temperatures. For smaller quantities, use 1.5 parts PART A to 1 part PART B by volume.

APPROXIMATE WORK TIME (minutes)

	65°F-70°F	71°F-84°F	85°F-90°F
Eco-TCU	30	25	20

MIX FOR 3 MINUTES using a Jiffy® mixer blade and slow speed drill. (Failure to do so could result in lower/diminished coating properties.)

IMMEDIATELY POUR ALL OF THE MIXED MATERIAL into an applicator tray.

USE A 3/8" NAP ROLLER, to deliver thickened Eco-TCU evenly on the wall.

USING A WINDOW SQUEEGEE, pull with down pressure the Eco-TCU material into the troweled quartz.

The cure of Eco-TCU™ (recoat window) depends on the relative humidity (RH) and temperature. The following chart defines the time period between coats of Eco-TCU™.

RECOAT WINDOWS

>50% RH	≤50% RH	
9-16 hours	>70°F	<70°F
	30-50% RH	24-48 hours
	12-30 hours	
	<30% RH	
	20-48 hours	

NOTE: The beginning of the time period is the approximate set-up time. The seal coat of Eco-TCU™ has to be set up. Eco-TCU™ applied outside of these windows may not adhere.

Apply second coat same as above.

If required, apply third coat same as above.

ALLOW COATING TO CURE 24 hours at 75°F (24°C). Allow more time at low temperatures or for heavier traffic. Full coating properties take 14 days to develop.

TECHNICAL SUPPORT

For any application questions, please call Tennant technical support at 800-553-8033 ext. 6075.

DISPOSAL

Dispose in accordance with federal, state and local regulations.

PLEASE SEE MATERIAL SAFETY DATA SHEET (MSDS) FOR SAFETY AND PRECAUTIONS.

USE PRODUCT AS DIRECTED.

KEEP OUT OF THE REACH OF CHILDREN.

MAINTENANCE GUIDELINES

Detergent: Tennant has a full range of detergents--general purpose to heavy duty--for your cleaning needs. For assistance in determining which detergent is right for your facility or for additional technical information call: 800-553-8033.

Caution: Avoid scratching or gouging the surface. All floor coatings will scratch if heavy objects are dragged across the surface.

Do not drop heavy or pointed items on the floor as this may cause chipping or concrete pop outs in the case of a weak cap.

Rubber tires can permanently stain the floor coating from plasticizer migration. Plexiglas® between the tire and the floor coating can prevent discoloration.

Rubber burns from quick stops and starts can heat the coating to its softening temperature, causing permanent marking.

Repair: Repair gouges or scratches or chip outs as soon as possible to prevent moisture or chemical contamination.

CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY

This warranty applies to all Specialty Surface Coatings, with the following exceptions: Eco-Hard-N-Seal™, Eco-EDP™ (Electrostatic Dissipative Primer), Eco-EDE™ (Electrostatic Dissipative Epoxy), and SDS™ (Static Dissipative System). These products have a separate warranty policy.

Tennant Company warrants its Specialty Surface Coatings to be free from defective manufacture, improper formulation, and defective ingredients. Warranty covers replacement of materials only.

THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

In no event shall Tennant or Seller be liable for any incidental, consequential, or special damages arising out of the use of Tennant Specialty Surface Coatings. **THE ONLY REMEDY OF THE USER OR BUYER, AND THE ONLY LIABILITY OF TENNANT AND SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES, OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, STRICT LIABILITY, OR OTHERWISE) SHALL BE REPLACEMENT OF THE PRODUCT OR, AT THE ELECTION OF TENNANT OR SELLER, RETURN OF THE PURCHASE PRICE.**

No representative of Tennant has authority to give any other warranty or assume other liability.

The presence of a Tennant employee during the application of Tennant's Specialty Surface Coatings does not extend or alter the warranty or limitations in any manner whatsoever.