



THE EUCLID CHEMICAL COMPANY

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EUCO #452 EPOXY SYSTEM

ASTM C 881 COMPLIANT, HIGH MODULUS ADHESIVE

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EUCO #452 EPOXY SYSTEM is a 100% reactive, 2-component material designed as a moisture insensitive adhesive and binder for numerous application needs. This high modulus material is available in a low viscosity (LV), medium viscosity (MV) or GEL consistency. EUCO #452 provides normal working times when bonding concrete at temperatures above 40°F (4°C).

PRIMARY APPLICATIONS

Viscosity Formulation

Application	LV(1)	MV(2)	GEL
Priming	X		
Sealing	X		
Bonding Toppings	X	X	
General Adhesive	X	X	X
Anchoring		X	X
Joint Repair Material	X	X	
Non-Sag Material			X
Vertical and Overhead Coatings			X
Wide Joint Treatment			X

(1) At temperatures above 90°F (32°C) the medium viscosity formulation may be more suitable for these applications. Gel time will be shortened.

(2) At temperatures below 60°F (15°C) the low viscosity formulation may be more suitable for these applications.

FEATURES/BENEFITS

- Excellent adhesive for bonding together concrete, steel, ceramic or wood materials
- Moisture insensitive for bonding to dry or damp surfaces
- Bonds fresh concrete toppings to hardened concrete slabs
- Anchoring bolts, dowels, and pins
- Forms a tough, wear and chemical resistant coating for industrial floor slabs
- May be extended with sand or aggregate for thick applications and mortar repairs
- Designed for use at temperatures of 40°F (4°C) and above
- Used with Hypalon sheeting to seal wide and high movement joints

TECHNICAL INFORMATION

Typical Engineering Data

Typical properties of all EUCO #452 Systems when tested @ 70°F (21°C) under laboratory conditions. Engineering properties will vary slightly with viscosity formulation.

PROPERTY	EUCO #452 SYSTEMS
Gel Time ASTM C 881-90	40 min
Gel Time 1 gal (3.8 liter)	20 min
Working Time Applied Over Concrete	90 min
Bond Strength	
ASTM C 882 @ 48 hours	>1,100 psi (>7.6 MPa)
Bond Strength	
ASTM C 882 @ 14 days	>2,000 psi (>13.8 MPa)
Water Absorption ASTM D 570	<0.65%
Durometer ASTM D2240 "D Scale"	75-85
Tensile Strength	
ASTM D 638	>8,500 psi (>58.6 MPa)
Compressive Modulus of Elasticity	
ASTM D 638	>200,000 psi (>1,379 MPa)
Compressive Strength	
ASTM C 695	>10,000 psi (>69.0 MPa)
Appearance	

EUCO #452 is a 2-part system consisting of a white pigmented Part A and a gray/black pigmented Part B. When these parts are combined, the resultant material is medium gray in color.

PACKAGING

EUCO #452 epoxies are two part systems. Bulk packaged material is mixed at a 2 to 1 ratio by volume, Part A to Part B. The units are pre-proportioned and packaged in 3 gal (11.4 liter) units, 1 gal (3.8 liter) units and 6/1 qt. (.95 liter) units per case. Product packaged in 20 fl. oz. cartridges is mixed at a 1:1 ratio.

Shelf life is 2 years in original, unopened package.
Shelf life of EUCO #452 Cartridge MV is 1 year in original, unopened package.

Repair mortars can be made with these products by adding aggregate. Size, gradation and the amount of aggregate will be determined by the application. The user is advised to consider the use of a pre-packaged mortar, such as EUCO #456 MORTAR.

SPECIFICATIONS/COMPLIANCES

ASTM C 881-90

	LV	MV	GEL	CART(MV)	CART(GEL)
Type I	✓	✓	✓	✓	✓
II	✓	✓	✓	✓	✓
IV	✓	✓	✓	✓	✓
V	✓	✓	✓	✓	✓
VI	✓	✓	✓	✓	✓
Grade 1	✓				
Grade 2		✓		✓	
Grade 3			✓		✓
Class B	✓	✓	✓	✓	✓
Class C	✓	✓	✓	✓	✓

All formulations meet requirements of ASTM C 883 and C 884, AASHTO 235, and all are available for UDSA approval in inspected facilities. All are suitable for use under ACI Specifications 503.1, 503.2, 503.3, and 503.4.

COVERAGE

Coverage Rates ft²/gal (m²/liter)*

Application	#452 LV	#452 MV	#452 GEL
Priming & Sealing	100-125 (9.3-11.6)	-----	-----
Bonding	-----	50-100	55-70
Toppings		(4.6-9.3)	(5.1-6.5)
Repair Mortars	20-24	18-22	12-16
1/4" (6.4 mm)	(1.8-2.2)	(1.6-2.0)	(1.1-1.5)

Cartridges yield 37 in³ of epoxy.

*Note: The coverage rate of each product varies with concrete surface texture and temperature. For repair mortars, the gradation of the aggregate and the workability desired highly affects the amount of epoxy required.

DIRECTIONS FOR USE

Surface Preparation-New concrete must be a minimum of 28 days old and possess an open, porous and textured surface with all curing compounds and sealers removed. Old concrete must be clean and well textured. All oil, dirt, debris, paint and unsound concrete must be removed. The surface should be prepared mechanically using equipment that will give a surface profile commensurate with the application. The final step in cleaning should be the complete removal of all residue with a vacuum cleaner or pressure washer.

Bulk Mixing-All materials should be in the proper temperature range of 60°F (16°C) - 90°F (32°C). Mix parts A and B (resin & hardener) using a drill and mixing prop. The epoxy must be well mixed to a uniform color with no streaking in order to ensure proper chemical reaction. If aggregate is to be added, the aggregate is added to the epoxy after the part A and part B have been premixed together. Place immediately.

APPLICATION-(Priming, Bonding or Sealing)-Use either Low Viscosity or Medium Viscosity formulations in these applications. Apply material by roller, squeegee or airless sprayer in a uniform fashion. Do not allow the material to puddle. Extremely porous surfaces may require a second coat for proper ultimate performance.

Priming & Bonding-If using EUCO #452 as a bonding agent for a cementitious topping, place the topping on the EUCO #452 while the epoxy is still wet. If the epoxy has become "tacky" to the point where it is no longer a sticky liquid, a fresh coat of EUCO #452 must be applied before the topping is placed.

Sealing-If a second coat of EUCO #452 is to be placed on the concrete, the first coat should be slightly tacky (4-10 hours old) when the second coat is applied. A slip resistant surface can be created by broadcasting silica sand (20-50 mesh) into the coating and then backrolling to embed the sand.

Repair Mortars-The surface should be primed with EUCO #452 LV prior to application of the repair mortar. Mix the epoxy unit (Part A with Part B) prior to adding the aggregate. Trowel the mortar into place. If the surface is too rough, a topcoat of either EUCO #452 LV or MV can be applied.

Hypalon Joint Sealing-In a continuous, 2" (5 cm) wide strip, trowel EUCO #452 GEL on each side of the joint. Press Hypalon sheeting into gel and force epoxy up through the perforations. Apply a second layer of gel to seal the sheeting. EUCO #452 GEL usage is approximately 50ft²/coat (4.6m²/coat)

Cartridge Epoxy Application Instructions-Remove cap and divider plugs. Cut static mixer tip up to third notch for easy gunning. Attach mixer tip with retaining nut and dispense epoxy with smooth, constant pressure. Discard epoxy until a uniform, streak-free color is achieved.

For anchor installation, insert the static mixer tip and fill hole from the bottom, slowly withdrawing the tip as the epoxy is dispensed until the hole is approximately half full. Insert the anchor with a slow, twisting motion to ensure complete epoxy contact with no air voids. Stabilize anchor until epoxy is cured.

CLEAN-UP

Clean tools and equipment with solvent such as EUCO SOLVENT, xylene, xylo, toluene or MEK. Do not allow the epoxy to harden on equipment.

PRECAUTIONS/LIMITATIONS

- This product may vary in color and may yellow and chalk in prolonged exposure to sunlight.
- Bring materials as close to 70°F (21°C) as possible. Store in room temperature environment 24 hours prior to use. Do not heat with open flame.
- Store indoors at 45°-110°F (7°-43°C).
- Epoxy components may cause skin irritation.
- Do not apply over freestanding water.
- Do not apply over hardened primer or old epoxy without proper surface preparation.
- Not recommended for use as a surface sealer over new concrete less than 30 days old.
- Not recommended for use when base concrete is at a temperature under 40°F (4°C).



Form Euco #452 Epoxy System-3.01

WARRANTY: The Euclid Chemical Company ("Euclid") solely and expressly warrants that its products shall be free from defects in materials and workmanship for six (6) months from the date of purchase. Unless authorized in writing by an officer of Euclid, no other representations or statements made by Euclid or its representatives, in writing or orally, shall alter this warranty. EUCLID MAKES NO WARRANTIES, IMPLIED OR OTHERWISE, AS TO THE MERCHANTABILITY OR FITNESS FOR ORDINARY OR PARTICULAR PURPOSES OF ITS PRODUCTS AND EXCLUDES THE SAME. If any Euclid product fails to conform with this warranty, Euclid will replace the product at no cost to Buyer. Replacement of any product shall be the sole and exclusive remedy available and buyer shall have no claim for incidental or consequential damages. Any warranty claim must be made within one (1) year from the date of the claimed breach. Euclid does not authorize anyone on its behalf to make any written or oral statements which in any way alter Euclid's installation information or instructions in its product literature or on its packaging labels. Any installation of Euclid products which fails to conform with such installation information or instructions shall void this warranty. Product demonstrations, if any, are done for illustrative purposes only and do not constitute a warranty or warranty alteration of any kind. Buyer shall be solely responsible for determining the suitability of Euclid's products for the Buyer's intended purposes.