

TECHNICAL DATA SHEET

DESCRIPTION

Pro-Poxy 400 is a two component 100% solids, moisture tolerant, all weather epoxy acrylate hybrid anchoring gel that meets ASTM C 881 specification requirements. Pro-Poxy 400 is formulated to set up at room temperatures and down to temperatures of -15°F (-26°C).

USE

Pro-Poxy 400 is ideal for anchoring dowels, bolts, threaded rod, pins and reinforcement steel in concrete. Pro-Poxy 400 can also be used in cooler and freezer applications or anywhere low temperature installations are required.

FEATURES

- All weather and temperature installation
- Ideal for cold weather installations
- Moisture tolerant
- High structural strength adhesive
- Rapid cure and gel time at room temperatures
- Styrene free
- VOC compliant-100% solids
- Non-sag gel consistency for horizontal and vertical installations
- Easy dispensing from dual cartridges
- High bond and adhesion

PROPERTIES

Meets USDA requirements for use in incidental food contact

Complies with ASTM C 881 and AASHTO M-235: Types I, II, IV, V*, classes A, B & C. Grade 3 (*with exception of gel time)

Passed- ASTM E-1512 (Sec.7.1 & 7.5) Elevated temperature creep test

Laboratory test data:

Mix Ratio (A to B by volume) - 10:1

Consistency – Non-sag gel

Gel time 60 GM MASS @ 73°F (23°C) - 7.8 Min.

Compressive Strength ASTM D 695
 Greater than 10,000 PSI (68.95 MPa)

Compressive Modulus ASTM D 695
 270,000 PSI (1,861.6 MPa)

Water Absorption ASTM D 570 - 0.06%

Heat Deflection temp ASTM D 648 - 140°F (60 C)

Bond Strength ASTM C 882

2 days - 2,800 PSI (19.31 MPa)

14 Days: 3,200 PSI (22.06 MPa)

Elongation at break ASTM D 638 1.3%

VOC

Pro-Poxy 400 has a VOC content of 0 g/L . Compliant with all Canadian and U.S. VOC regulations including Federal EPA, OTC, LADCO, SCAQMD & CARB.

Estimating Guide

The rates are theoretical and do not account for loss or waste.

Rebar			
Bot Diameter Rebar Size	Hole Diameter	Hole Depth	Anchors per 28 oz Cartridge Rebar/Dowel
#3 3/8" (1 cm)	1/2" (1.3 cm)	4" (10.2 cm)	104
#4 1/2" (1.3 cm)	5/8" (1.6 cm)	5" (12.7 cm)	65
#5 5/8" (1.6 cm)	3/4" (1.9 cm)	6" (15.2 cm)	45
#6 3/4" (1.9 cm)	7/8" (2.2 cm)	7" (17.8 cm)	31
#7 7/8" (2.2 cm)	1" (2.5 cm)	8" (20.3 cm)	23
#8 1" (2.5 cm)	1-1/8" (2.8 cm)	9" (22.9 cm)	18
#10 1-1/4" (3.2 cm)	1-1/2" (3.8 cm)	9" (22.9 cm)	9

Threaded Rod			
Bolt Diameter Rebar Size	Hole Diameter	Hole Depth	Anchors per 28 oz Cartridge Rebar/Dowel
#3 3/8" (1 cm)	7/16" (1.1 cm)	4" (10.2 cm)	122
#4 1/2" (1.3 cm)	9/16" (1.42 cm)	5" (12.7 cm)	70
#5 5/8" (1.6 cm)	3/4" (1.9 cm)	6" (15.2 cm)	31
#6 3/4" (1.9 cm)	7/8" (2.2 cm)	7" (17.8 cm)	20
#7 7/8" (2.2 cm)	1" (2.5 cm)	8" (20.3 cm)	15
#8 1" (2.5 cm)	1-1/8" (2.8 cm)	9" (22.9 cm)	11
#10 1-1/4" (3.2 cm)	1-3/8" (3.2 cm)	9" (22.9 cm)	9

Packaging

PRODUCT CODE	PACKAGE	SIZE (Liters)
140290	Unicartridge	275 ml
140293	Cartridge	825 ml

STORAGE

The material should be stored at 40° -95°F (5°-35°C). Shelf life of properly stored, unopened containers is 12 months.

APPLICATION

All surfaces that Pro-Poxy 400 will be installed on must be free of frost and ice.

See "General Application Procedures" for Applications in Water Filled Holes

Caution: Wear suitable eye and skin protection. Avoid inhalation of dust during drilling and debris removal. Step 1: Drill hole in concrete using a rotary-percussion power drill (rotary-hammer drill) and a carbide-tipped SDS or SDS-Plus type drill bit complying with ANSI B212.15- 1994,

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to the diameter and embedment depth adhering to minimum spacing, minimum edge distance, and minimum concrete member thickness.

Step 2: Blow out hole using oil-free compressed air at a minimum of 70 psi with a nozzle as described in Table 4. While blowing air, insert the nozzle into the hole until in contact with the bottom for not less than one second, and then withdraw. Repeat.

Step 3: Insert a nylon cleaning brush for the proper drill hole diameter listed in Table 4. Thrust the brush to the bottom of the borehole while twisting. Once the brush is in contact with the bottom of the hole, turn the brush one-half revolution, and then quickly withdraw the brush with a vigorous, twisting pull. Repeat.

Step 4: Repeat blow out of hole with air as per Step 2 above. Concrete shall be dry before injection of adhesive

Step 5: Check cartridge for expiration date to confirm the material is within the expiration date and for any physical defects. Cartridges shall have been stored at temperatures between 40°F and 95°F. Review MSDS before use. Concrete temperature must be 50°F minimum. Condition cartridge and contents to a temperature of 65°F to 95°F for easier dispensing. Note gel time and cure time listed in Table 3 for basematerial temperature. Insert the cartridge into the extrusion tool, and attach the supplied mixing nozzle to the cartridge. Verify mixing elements are in nozzle. Do not modify mixing nozzle. Prior to injection, dispense some mixed epoxy through the mixing nozzle and discard until the color of the extruded material becomes uniform. After uniform color is achieved, insert the end of the mixing nozzle into the borehole until in contact with the bottom. Then, dispense the adhesive while slowly withdrawing the nozzle until borehole is approximately two-thirds full, and then withdraw the mixing nozzle. Keep the nozzle attached on partially used cartridges. A new mixing nozzle must be used if the gel time has been exceeded between injections.

Step 6: Mark the anchor rod with the required embedment depth. Insert the clean and oil-free anchor rod into the adhesive in the borehole, turning it slowly as it is pushed downward until contact with the bottom of the borehole. Make sure the hole is completely filled with adhesive and that no gaps appear between the anchor rod and borehole.

Step 7: Adjust the alignment of the anchor in the hole immediately. Do not disturb it between the Gel Time and the Minimum Cure Time as shown in Table 3. Do not torque or apply load to the anchor until the Recommended Cure Time as shown in Table 3 has elapsed.

Test before placement:

It is advisable to test a small portion of the Pro-Poxy 400 for gel and set times at the temperature for intended use before overall installation. Make sure that the Pro-Poxy 400 will set at the intended temperatures.

Placement:

Condition material to 65° - 85°F (18° - 29°C) before using. Remove the "D" cartridge plugs from the extrusion throat end of the cartridge. Place the retaining nut over the small end of the static mixing tube. Securely hand tighten the retaining nut onto the cartridge making sure that there is no slack in the nut, otherwise leaking will occur. Place the assembled cartridge into either a manual or pneumatic gun. Pneumatic guns are recommended during temperatures below 40°F (5°C) and for large jobs where high production is required. Start installation by extruding material into a waste pail until a smooth uniform color without streaking has been achieved. Discard the first material that is extruded from the end of the nozzle until the uniform streak-free color is achieved. Off color or streaking will result in an off ratio mix, and the Pro-Poxy 400 will not set properly or develop maximum strength. Dispense the Pro-Poxy 400 using constant and even pressure. Start dispensing by placing the static mixing nozzle to the bottom of the hole pulling the mixing nozzle out slowly filling the hole on the way out. Fill to approximately ½ full. Place dowel, rod, rebar, pin, etc. into the back of the hole, rotating the rod slowly, and displacing epoxy as it is inserted. Whenever the dispensing is interrupted or otherwise stopped for more than 15 minutes, recheck the extruded Pro-Poxy 400 for uniform streak-free color before use. Always establish uniform non-streak color before use to verify proper mixing.

General Application Procedure:

Application in Water Filled Holes:

1. Concrete must be a minimum of 21 days old.
2. Drill or core the hole
3. Flush - Insert a suitably sized piece of tubing and flush the hole with water from the bottom up until the water runs clear
4. Clean - Scrub hole with a stainless steel wire brush (available thru Dayton Superior) to remove dust and debris
5. Repeat steps 2 and 3 to ensure all loose matter or mud is expelled.
6. Trial fit the cartridge mixing nozzle extension - Ensure the extension extends to the bottom of the hole
7. Discharge a small amount of epoxy outside the hole - Ensure complete mixing is achieved shown by uniform gray color.
8. Overfill the hole with epoxy from the bottom up in one continuous lift - Withdraw the mixing nozzle extension just below the rising surface of the epoxy. Do not allow water filled voids to occur within the epoxy mass
9. Immediately insert the anchor and rotate to ensure that all embedded surfaces are covered
10. Position or restrain the anchor in its final position immediately after insertion
11. Do not disturb or vibrate the anchor until set has occurred, movement can detrimentally affect the pullout strength of the connection.

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CLEAN UP

Clean up with full strength Unitex Citrus Cleaner or Xylene. Cured, hardened Pro-Poxy 400 can only be removed mechanically. Do not let Pro-Poxy 400 set up on surfaces that are not to be bonded.

Cure Time

Minimum		
Substrate Temp.	Gel Time	Cure Time
100°F / 38°C	5 min.	25 min.
70°F / 21°C	7 min.	35 min.
0°F / -18°C	4 hrs.	24 hrs.
-15°F / -26°C	8 hrs.	36 hrs.

LIMITATIONS

FOR PROFESSIONAL USE ONLY

All surfaces that Pro-Poxy 400 will be installed on must be free of frost and ice. Do not thin or mix the Pro-Poxy 400 with any other material, solvent, thinner or other bonding agent or epoxy. Do not use Pro-Poxy 400 that has exceeded its shelf life as physical properties will be adversely affected. Minimum age of concrete must be 21-28 days from date of placemen depending on curing and drying conditions.

PRECAUTIONS

READ SDS PRIOR TO USING PRODUCT

- Component A – Irritant
- Component B – Corrosive
- Product is a strong sensitizer
- Use with adequate ventilation
- Wear protective clothing, gloves and eye protection (goggles, safety glasses and/or face shield)
- Keep out of the reach of children
- Do not take internally
- In case of ingestion, seek medical help immediately
- May cause skin irritation upon contact, especially prolonged or repeated. If skin contact occurs, wash immediately with soap and water and seek medical help as needed.
- If eye contact occurs, flush immediately with clean water and seek medical help as needed
- Dispose of waste material in accordance with federal, state and local requirements
- Cured epoxy resins are innocuous

MANUFACTURER

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WARRANTY

Dayton Superior Corporation ("Dayton") warrants for 12 months from the date of manufacture or for the duration of the published product shelf life, whichever is less, that at the time of shipment by Dayton, the product is free of manufacturing defects and conforms to Dayton's product properties in force on the date of acceptance by Dayton of the order. Dayton shall only be liable under this warranty if the product has been applied, used, and stored in accordance with Dayton's instructions, especially surface preparation and installation, in force on the date of acceptance by Dayton of the order. The purchaser must examine the product when received and promptly notify Dayton in writing of any non-conformity before the product is used and no later than 30 days after such non-conformity is first discovered. If Dayton, in its sole discretion, determines that the product breached the above warranty, it will, in its sole discretion, replace the non-conforming product, refund the purchase price or issue a credit in the amount of the purchase price. This is the sole and exclusive remedy for breach of this warranty. Only a Dayton officer is authorized to modify this warranty. The information in this data sheet supersedes all other sales information received by the customer during the sales process. THE FOREGOING WARRANTY SHALL BE EXCLUSIVE AND IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, AND ALL OTHER WARRANTIES OTHERWISE ARISING BY OPERATION OF LAW, COURSE OF DEALING, CUSTOM, TRADE OR OTHERWISE.

Dayton shall not be liable in contract or in tort (including, without limitation, negligence, strict liability or otherwise) for loss of sales, revenues or profits; cost of capital or funds; business interruption or cost of downtime, loss of use, damage to or loss of use of other property (real or personal); failure to realize expected savings; frustration of economic or business expectations; claims by third parties (other than for bodily injury), or economic losses of any kind; or for any special, incidental, indirect, consequential, punitive or exemplary damages arising in any way out of the performance of, or failure to perform, its obligations under any contract for sale of product, even if Dayton could foresee or has been advised of the possibility of such damages. The Parties expressly agree that these limitations on damages are allocations of risk constituting, in part, the consideration for this contract, and also that such limitations shall survive the determination of any court of competent jurisdiction that any remedy provided in these terms or available at law fails of its essential purpose.