

## Anchoring Epoxy

### Product Description

PIONEER PRO ANCHORING EPOXY is a two-component, high-strength structural epoxy designed for anchoring bolts, dowels and reinforcing bars into concrete and masonry.

### Key Features

- Heavy-duty epoxy adhesive
- 100% solids content
- Solvent-free formulation
- Forms strong bonds on a wide variety of rigid materials like glass, metals, ceramics, concrete, wood and some plastics
- Low odor
- Moisture insensitive after cure
- High tensile, flexural and compressive strengths

### Product Specifications / Typical Properties / Physical Characteristics

Table 1. Wet Properties\*

| Parameters          | Component A (RESIN) | Component B (HARDENER)     |
|---------------------|---------------------|----------------------------|
| 1. Appearance       | Black, soft gel     | Clear, Yellowish, soft gel |
| 2. Specific Gravity | 1.09                | 0.78                       |
| 3. Viscosity @ 25°C | 50,000 cps          | 20,000 cps                 |
| 4. Solids Content   | 100%                | 100%                       |

Table 2: Mixed State Properties\*

| Parameters             | Results                         |
|------------------------|---------------------------------|
| 1. Mixing Ratio        | 2 parts A: 1 part B (by volume) |
| 2. Appearance          | Black, soft paste               |
| 3. Potlife @ 25°C      | 60-120 minutes                  |
| 4. Setting Time @ 25°C | 8 hours                         |

### Applications

Anchoring threaded rod and rebar to concrete and masonry

### Application Procedure

**Important:** Use proper personal protective equipment (PPEs) as outlined by OSHA or the relevant work safety authority in the workplace. Consult the Safety Data Sheets (SDS) for safety, first aid and clean up information.



Table 3. Cured State Properties\*

| Parameters                                                   | Results                                                                            |
|--------------------------------------------------------------|------------------------------------------------------------------------------------|
| 1. Full cure time                                            | 48 hours                                                                           |
| 2. Hardness (after 24 hours), shore D                        | 75 minimum                                                                         |
| 3. Shrinkage                                                 | nil                                                                                |
| 4. Water resistance                                          | Excellent                                                                          |
| 5. Chemical Resistance                                       | Resistant to most acids, alkalis and other organic solvents                        |
| 6. Weathering Resistance                                     | Color will fade through time (epoxy-based products are typically not UV-resistant) |
| 7. Adhesive strength (concrete to stainless steel)           | 1000 psi minimum                                                                   |
| 8. Pull-out strength (concrete to 12 mm rebar, 110 mm depth) | 12,080 psi                                                                         |
| 9. Tensile Strength ASTM D638                                | 4,500 psi                                                                          |
| 10. Flexural Strength ASTM D790                              | 8,200 psi                                                                          |
| 11. Compressive Strength ASTM D695                           | 7,200 psi                                                                          |

\*Typical Values and characteristics only.

### Guidelines for Hole Dimensions

The annular space between anchor and hole should be as small as possible yet still provides ease of placement. Hole diameter is typically 1/8" or 3 mm greater than the anchor diameter. Typically, recommended minimum anchor hole depth is 1 inch. But if the compressive strengths of the substrates are known, refer to the following:

- When the substrate has a compressive strength of 3000 psi or greater, or the anchor bolts are threaded, minimum depth is 10 times the bolt diameter
- When the substrate has a compressive strength lower than 3000 psi or when anchor bolts are smooth, minimum depth is 15 times the bolt diameter

It is still highly encouraged to consult project specifications and regulation.

### Surface Preparation

Ensure that bolts, dowels or rebar is clean, dry and degreased.

- Dry Drilling: Vacuum or Blow out hole using oil-free compressed air
- Wet Drilling: Wash out hole with clean water to remove residues. Remove any standing water. It is recommended to allow holes to dry.

### Application

1. Use recommended heavy duty professional caulking gun.
2. Remove plastic plug from cartridge. Save this for closing of cartridge if needed.
3. Attach mixing nozzle to the cartridge.
4. On an separate dish or container, gun a small amount of epoxy until a uniform color is achieved.

Note: Use only within the specified potlife period. Mixing nozzle will harden if unused after this period. Discard and replace if necessary.

5. Dispense the epoxy at the bottom of the hole while withdrawing the nozzle. Fill only about 5/8 of the hole so that once the threaded rod or bar is inserted, the hole becomes completely filled up.
6. Insert threaded rod or rebar at the bottom of the hole while turning clockwise.
7. Remove excess material.
8. Leave anchor undisturbed for 4 hours, or longer for lower temperatures.

### Cleaning

Clean all tools or equipment used while adhesive is still in its uncured state. Use solvents or adhesive removers. Cured epoxy can only be removed mechanically.

**Table 4. Theoretical Usage per 240 mL cartridge.\*\***

| Rebar size |       | Hole diameter |       | Hole depth |        | Number of Anchors<br>per 240 mL Cartridge |
|------------|-------|---------------|-------|------------|--------|-------------------------------------------|
| (inches)   | (mm)  | (inches)      | (mm)  | (inches)   | (mm)   |                                           |
| 3/8"       | 25.40 | 1/2"          | 12.70 | 7 1/2"     | 190.50 | 16-19                                     |
|            |       | 7/16"         | 11.18 | 3 3/4"     | 95.25  | 68-82                                     |
|            |       | 7/16"         | 11.18 | 5 3/4"     | 146.05 | 43-51                                     |
| 1/2"       | 12.70 | 9/16"         | 14.22 | 4 1/2"     | 114.30 | 47-56                                     |
|            |       | 9/16"         | 14.22 | 7 1/2"     | 190.50 | 28-33                                     |
| 5/8"       | 15.88 | 3/4"          | 19.05 | 5 5/8"     | 143.00 | 14-16                                     |
|            |       | 3/4"          | 19.05 | 9 3/8"     | 238.25 | 8-10                                      |
| 3/4"       | 19.05 | 7/8"          | 22.23 | 6 3/4"     | 171.45 | 10-11                                     |
|            |       | 7/8"          | 22.23 | 11 1/4"    | 285.75 | 6-7                                       |
| 1"         | 25.40 | 1 1/8"        | 28.70 | 9"         | 228.60 | 5-6                                       |
| 1 1/4"     | 31.75 | 1 3/8"        | 34.93 | 11 1/4"    | 285.75 | 4                                         |

\*\* Actual quantity may vary depending on material losses during preparation and use.

### Application Equipment

-Heavy duty professional caulking gun

### Packaging

| SKU       | Packaging         | Weight<br>of set, kg                | Quantity<br>per box |
|-----------|-------------------|-------------------------------------|---------------------|
| Cartridge | Plastic cartridge | A=160 mL<br>B=80 mL<br>Total=240 mL | 12 sets             |

### Storage

Store in a dry place at ambient temperature.

### Shelf Life

12 months from manufacturing date when kept in a sealed, unopened container following the required storage condition.

### Health and Safety Precautions

#### For Component A



#### WARNING

##### Hazards

Causes skin and eye irritation or serious eye damage.  
May cause an allergic skin reaction.  
Toxic to aquatic life with long lasting effects.

##### Precaution

Wash skin thoroughly after handling.  
Wear protective gloves/clothing/eye/face protection.  
Contaminated work clothing should not be allowed out of the workplace.  
Avoid release to the environment

**If on skin or hair:** Wash with plenty of soap and water.  
Take off contaminated clothing and wash before re-use.  
If skin irritation or rash occurs, get medical attention.

**If in eyes:** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical advice/attention.

**Collect spillage.**

**KEEP OUT OF REACH OF CHILDREN.**

#### For Component B



#### DANGER

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