TECHNICAL DATA SHEET

DESCRIPTION
Pro-Poxy 400 is a Made in the USA, two component, moisture tolerant, styrene free, acrylic anchoring gel that meets ASTM C881 and AASHTO M235 specification requirements.
Pro-Poxy 400 is formulated to be applied in a wide temperature range of 5°F (-15°C) to 110°F (43°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 as a Bonding Agent for fresh to hardened and hardened to hardened concrete.

FEATURES
- ASTM C881 / AASHTO M235 Type I, II, IV, & V Grade 3 Class A, B, & C.
- Ideal for cold weather installations
- Wide service temperature range between -40 °F to 176 °F (-40°C to 80 °C)
- Moisture tolerant
- High bond strength with fast cure times
- Styrene free
- Non-sag gel consistency for horizontal and vertical installations
- 10:1 by volume
- Tested and compliant per CDPH V1.2

PROPERTIES
Color & Ratio: Part A (Resin) Gray: Part B (Hardener) Beige, Mixed
Ratio: 10:1 by volume, Mixed Color - Gray
See Appendix A

Packaging

PRODUCT CODE	PACKAGE	SIZE	
		Ounce	Milliliters
100923	Cartridge	28 oz	828 ml

STATIC MIXERS		
140941	Each	Standard Static Mixer
100878	Each	Standard Static Mixer w/ Hanger
141628	Each	Standard Static Mixer w/ Extension

DISPENSING GUNS			
141680	Each	Manual Dispensing Gun	28 oz

STORAGE
Store between 41 °F (5° C) and 77 °F (25 °C). Shelf life 18 months when stored in unopened containers in dry conditions.

APPLICATION
Manufacturer's Printed Installation Instructions (MPII) / Instruction Card (IC) are available within this Technical Data Sheet (TDS). Due to occasional updates and revisions, always verify and use the most current instructions.
All surfaces that Pro-Poxy 400 will be installed on must be free of frost and ice. Check the expiration date on the cartridge to ensure it is not expired. Do not use expired product!

Recommended Working & Cure Times

Substrate Temp.		Working Time	Full Cure Time- Dry Concrete	Full Cure Time- Wet Concrete
°F	°C			
5	-15	40 mins	24 hours	48 hours
20	-7	30 mins	3 hours	6 hours
40	4	15 mins	90 mins	3 hours
75	24	6 min	30 min	60 min
110	43	3 min	15 min	30 min

CURING
1. Application Temperature: Substrate temperature should be from 5 - 110 °F (-15 - 43 °C).
2. When ambient or base material temperature falls below 60 °F (15 °C), condition the adhesive to 75 °F (24 °C) prior to use.
3. For installations above 95°F (35 °C), condition the adhesive to 75 °F (24 °C) prior to use.

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.

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 placement 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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Technical Services: 877-266-7732
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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.

Appendix A

TABLE 1: Pro-Poxy 400 Performance to ASTM C881-20a[1,2,3]

Property	Cure Time	ASTM Standard	Units	Sample Conditioning Temperature		
				Class A	Class B	Class C
				32 °F (0 °C)	50 °F (10 °C)	73 °F (22 °C)
Gel Time – 60 Gram Mass[4]	----	C881	Min	46	16	6
Property	**Cure Time**	**ASTM Standard**	**Units**	**Class A**	**Class B**	**Class C**
				35 °F (1 °C)	40 °F (4 °C)	60 °F (15 °C)
Compressive Yield Strength	7 day	D695	PSI (MPa)	11,180 (77.0)	11,300 (77.9)	11,090 (76.4)
Compressive Modulus			PSI (MPa)	703,200 (4,848)	721,300 (4,973)	740,100 (5,102)
Viscosity	----	C881	----	Non-Sag		
Bond Strength Hardened to Hardened Concrete	2 day	C882	PSI (MPa)	2,710 (18.6)	2,550 (17.5)	2,670 (18.4)
	14 day		PSI (MPa)	2,870 (19.7)	2,760 (19.0)	3,010 (20.7)
Bond Strength Fresh to Hardened Concrete			PSI (MPa)	1,830 (12.6)		
Heat Deflection Temperature	7 day	D648	°F (°C)	209 (98.3)		
Water Absorption	24 hr	D570	%	0.2		
Linear Coefficient of Shrinkage	48 hr	D2566	in/in	0.002		

1. Results based on testing conducted on a representative lot(s) of product. Average results will vary according to the tolerances of the given property.
2. Full cure time is listed above to obtain the given properties for each product characteristic.
3. Results may vary due to environmental factors such as temperature, moisture and type of substrate.
4. Gel time may be lower than the minimum required for ASTM C881.

TABLE 2 – Pro-Poxy 400 Adhesive Dispensing Tools and Nozzles

Product	28 fl. oz. (828 ml) Cartridge
SDS Brush Adaptor	100876
Brush Extension	100877
Nozzle Extension Tubing	100882
Retention Wedge	100883

TABLE 3: Pro-Poxy 400 Installation Parameters and Brushes

Threaded Rod in.	Rebar	Drill Bit Diameter in.	Maximum Installation Torque ft-lbs. (N-m)	Brush Part #	Brush Length in.
3/8	#3	7/16	7 (10)	100865	6
1/2	#4	9/16	25 (34)	100868	
5/8	#5	3/4	50 (68)	100869	
3/4	#6	7/8	85 (115)	100871	
7/8	#7	1	115 (156)	100872	9
1	#8	1 1/8	145 (197)	100873	

TABLE 4 – Milwaukee Tool Vacuum Drill Components[1]

Part #	Drill Type	Drill Bit Size in.	**Overall Length in.**	**Useable Length in.**
48-20-2102	SDS+	7/16	13	7 7/8
48-20-2106		1/2	13	7 7/8
48-20-2110		9/16	14	9 1/2
48-20-2114		5/8	14	9 1/2
48-20-2118		3/4	14	9 1/2
48-20-2152	SDS-Max	5/8	23	15 3/4
48-20-2156		3/4	23	15 3/4
48-20-2160		7/8	23	15 3/4
48-20-2164		1	25	17 1/2
48-20-2168		1 1/8	35	27
48-20-2172		1 3/8	35	27
8960-20	8 Gallon Dust Extractor Vacuum			

1. Vacuum drill accessories available from Milwaukee distributors nationwide.

TABLE 5: Pro-Poxy 400 ultimate and allowable Tension & Shear loads for THREADED ROD in normal-weight concrete[1,2]

Threaded Rod Diameter in.	Nominal Drill Bit Diameter in.	Embedment Depth in. (mm)	Tension Load Based on Bond Strength/ Concrete Capacity		Allowable Loads Based on Steel Strength[3]					
			$f'_c \geq 4{,}000$ psi (27.5 MPa)		Tension			Shear		
			Ultimate lbs. (kN)	Allowable lbs. (kN)	ASTM F1554 Grade 36 lbs. (kN)	ASTM A193 Grade B7 lbs. (kN)	ASTM F593 304/316 SS lbs. (kN)	ASTM F1554 Grade 36 lbs. (kN)	ASTM A193 Grade B7 lbs. (kN)	ASTM F593 304/316 SS lbs. (kN)
3/8	7/16	3 3/8 (86)	7,127 (31.7)	1,782 (7.9)	2,114 (9.4)	4,556 (20.3)	3,645 (16.2)	1,089 (4.8)	2,347 (10.4)	1,878 (8.4)
1/2	9/16	4 1/2 (114)	13,273 (59.0)	3,318 (14.8)	3,758 (16.7)	8,099 (36.0)	6,480 (28.8)	1,936 (8.6)	4,172 (18.6)	3,338 (14.8)
5/8	3/4	5 5/8 (143)	16,800 (74.7)	4,200 (18.7)	5,872 (26.1)	12,655 (56.3)	10,124 (45.0)	3,025 (13.5)	6,519 (29.0)	5,216 (23.2)
3/4	7/8	6 3/4 (171)	22,231 (98.9)	5,558 (24.7)	8,456 (37.6)	18,224 (81.1)	12,392 (55.1)	4,356 (19.4)	9,388 (41.8)	6,384 (28.4)
7/8[4]	1	7 7/8 (200)	32,174 (143.1)	8,043 (35.8)	11,509 (51.2)	24,804 (110.3)	16,867 (75.0)	5,929 (26.4)	12,778 (56.8)	8,689 (38.7)
1	1 1/8	9 (229)	41,474 (184.5)	10,369 (46.1)	15,033 (66.9)	32,398 (144.1)	22,030 (98.0)	7,744 (34.4)	16,690 (74.2)	11,349 (50.5)

1. Allowable bond strength/concrete capacity was calculated using a safety factor of 4.0.
2. The lower value of either the allowable bond strength/concrete capacity or steel strength should be used as the allowable tension value for design.
3. Allowable steel strengths calculated in accordance with AISC Manual of Steel Construction: Tensile = $0.33*F_u*A_{nom}$.Shear=$0.17*F_u*A_{nom}$
4. .Values for bond strength of 7/8 in. rebar were linearly interpolated from 3/4 in. & 1 in. data.

TABLE 6: Pro-Poxy 400 ultimate and allowable TENSION & SHEAR loads for REBAR in normal-weight concrete[1,2]

Rebar Size	Nominal Drill Bit Diameter in.	Embedment Depth in. (mm)	Tension Load Based on Bond Strength/ Concrete Capacity		Allowable Loads Based on Steel Strength[3]			
			$f'_c \geq 4{,}000$ psi (27.5 MPa)		Tension		Shear	
			Ultimate lbs. (kN)	Allowable lbs. (kN)	ASTM A615 Grade 60 lbs. (kN)	ASTM A615 Grade 75 lbs. (kN)	ASTM A615 Grade 60 lbs. (kN)	ASTM A615 Grade 75 lbs. (kN)
#3	7/16	3 3/8 (86)	9,723 (43.3)	2,431 (10.8)	2640 (11.7)	3300 (14.7)	1683 (7.5)	1870 (8.3)
#4	9/16	4 1/2 (114)	14,830 (66.0)	3,708 (16.5)	4,800 (21.4)	6,000 (26.7)	3,060 (13.6)	3,400 (15.1)
#5	3/4	5 5/8 (143)	19,838 (88.2)	4,960 (22.1)	7,440 (33.1)	9,300 (41.4)	4,743 (21.1)	5,270 (23.4)
#6	7/8	6 3/4 (171)	28,762 (127.9)	7,191 (32.0)	10,560 (47.0)	13,200 (58.7)	6,732 (29.9)	7,480 (33.3)
#7[4]	1	7 7/8 (200)	33,598 (149.5)	8,400 (37.4)	14,400 (64.1)	18,000 (80.1)	9,180 (40.8)	10,200 (45.4)
#8	1 1/8	9 (229)	39,623 (176.3)	9,906 (44.1)	18,960 (84.3)	23,700 (105.4)	12,087 (53.8)	13,430 (59.7)

1. Allowable bond strength/concrete capacity was calculated using a safety factor of 4.0.
2. The lower value of either the adjusted allowable bond strength/concrete capacity or steel strength should be used as the allowable tension or shear value for design.
3. Allowable steel strengths calculated in accordance with AISC Manual of Steel Construction: Tensile = $(F_y * A_{nom})/2.5$, Shear = $0.17 * F_u * A_{nom}$
4. Values for bond strength of #7 rebar were linearly interpolated from #6 & #8 data.

TABLE 7: Pro-Poxy 400 reduction factors for EDGE DISTANCE in TENSION[1,2]

Diameter	in.	3/8	1/2	5/8	3/4	7/8	1
Embedment Depth	in. (mm)	3 3/8 (86)	4 1/2 (114)	5 5/8 (143)	6 3/4 (171)	7 7/8 (200)	9 (229)
Critical Edge Distance	in. (mm)	4 1/2 (114)	5 7/8 (149)	7 3/8 (187)	8 7/8 (225)	10 1/4 (260)	11 3/4 (298)
Min. Edge Distance	in. (mm)	2 1/4 (57)	2 7/8 (73)	3 5/8 (92)	4 1/4 (108)	5 (127)	5 7/8 (149)
Edge Distance		Allowable Load Capacity Reduction Factor					
in.	(mm)						
2 1/4	(57.2)	0.63					
2 7/8	(73.0)	0.73	0.63				
3 5/8	(92.1)	0.86	0.72	0.63			
4	(101.6)	0.92	0.77	0.67			
4 1/4	(108.0)	0.96	0.80	0.69	0.63		
4 1/2	(114.3)	1.00	0.83	0.72	0.65		
5	(127.0)		0.89	0.77	0.69	0.63	
5 7/8	(149.2)		1.00	0.85	0.76	0.69	0.63
6 1/2	(165.1)			0.91	0.81	0.74	0.67
7 3/8	(187.3)			1.00	0.88	0.80	0.72
7 3/4	(196.9)				0.91	0.82	0.75
8 1/4	(209.6)				0.95	0.86	0.78
8 7/8	(225.4)				1.00	0.90	0.82
9 1/4	(235.0)					0.93	0.84
9 3/4	(247.7)					0.96	0.87
10 1/4	(260.4)					1.00	0.91
10 3/4	(273.1)						0.94
11 1/4	(285.8)						0.97
11 3/4	(298.5)						1.00

1. Minimum slab thickness equals 1.5 x embedment depth.
2. Linear interpolation may be used for intermediate edge distances.

TABLE 8: Pro-Poxy 400 reduction factors for EDGE DISTANCE in SHEAR[1,2]

Diameter	in.	3/8	1/2	5/8	3/4	7/8	1
Embedment Depth	in. (mm)	3 3/8 (86)	4 1/2 (114)	5 5/8 (143)	6 3/4 (171)	7 7/8 (200)	9 (229)
Critical Edge Distance	in. (mm)	3 3/4 (95)	5 (127)	6 1/4 (159)	7 1/2 (191)	8 3/4 (222)	10 (254)
Min. Edge Distance	in. (mm)	2 (51)	2 1/2 (64)	3 1/4 (83)	3 3/4 (95)	4 3/8 (111)	5 (127)
Edge Distance		Allowable Load Capacity Reduction Factor					
in.	(mm)						
2	(50.8)	0.25					
2 1/2	(63.5)	0.46	0.25				
2 3/4	(69.9)	0.57	0.33				
3 1/4	(82.6)	0.79	0.48	0.25			
3 1/2	(88.9)	0.89	0.55	0.31			
3 3/4	(95.3)	1.00	0.63	0.38	0.25		
4	(101.6)		0.70	0.44	0.30		
4 3/8	(111.1)		0.81	0.53	0.38	0.25	
4 3/4	(120.7)		0.93	0.63	0.45	0.31	
5	(127.0)		1.00	0.69	0.50	0.36	0.25
5 1/2	(139.7)			0.81	0.60	0.44	0.33
6	(152.4)			0.94	0.70	0.53	0.40
6 1/4	(158.8)			1.00	0.75	0.57	0.44
7	(177.8)				0.90	0.70	0.55
7 1/2	(190.5)				1.00	0.79	0.63
8	(203.2)					0.87	0.70
8 3/4	(222.3)					1.00	0.81
9 1/4	(235.0)						0.89
10	(254.0)						1.00

1. Minimum slab thickness equals 1.5 x embedment depth.
2. Linear interpolation may be used for intermediate edge distances.

TABLE 9: Pro-Poxy 400 reduction factors for SPACING in TENSION[1,2]

Diameter	in.	3/8	1/2	5/8	3/4	7/8	1
Embedment Depth	in. (mm)	3 3/8 (86)	4 1/2 (114)	5 5/8 (143)	6 3/4 (171)	7 7/8 (200)	9 (229)
Critical Spacing Distance	in. (mm)	8 7/8 (225)	11 3/4 (298)	14 5/8 (371)	17 5/8 (448)	20 1/2 (521)	23 1/2 (597)
Min. Spacing Distance	in. (mm)	2 1/4 (57)	3 (76)	3 5/8 (92)	4 3/8 (111)	5 1/8 (130)	5 3/4 (146)
Spacing Distance		Allowable Load Capacity Reduction Factor					
in.	(mm)						
2 1/4	(57.2)	0.63					
3	(76.2)	0.67	0.63				
3 1/4	(82.6)	0.69	0.64				
3 5/8	(92.1)	0.71	0.66	0.63			
4	(101.6)	0.73	0.67	0.64			
4 3/8	(111.1)	0.75	0.69	0.66	0.63		
5 1/8	(130.2)	0.79	0.72	0.68	0.65	0.63	
5 3/4	(146.1)	0.83	0.75	0.70	0.67	0.65	0.63
6 3/4	(171.5)	0.88	0.79	0.74	0.70	0.67	0.65
7 3/4	(196.9)	0.94	0.83	0.77	0.72	0.69	0.67
8 7/8	(225.4)	1.00	0.88	0.81	0.76	0.72	0.70
10 1/4	(260.4)		0.94	0.85	0.79	0.75	0.72
11 3/4	(298.5)		1.00	0.90	0.84	0.79	0.76
13	(330.2)			0.95	0.87	0.82	0.78
14 5/8	(371.5)			1.00	0.92	0.86	0.82
16 1/4	(412.8)				0.96	0.90	0.85
17 5/8	(447.7)				1.00	0.93	0.88
19	(482.6)					0.96	0.91
20 1/2	(520.7)					1.00	0.94
22	(558.8)						0.97
23 1/2	(596.9)						1.00

1. Minimum slab thickness equals 1.5 x embedment depth.
2. Linear interpolation may be used for intermediate spacing distances.

FIGURE 2 – MPII for Pro-Poxy 400 All Weather Anchoring Epoxy

DRILLING AND CLEANING

Hammer Drilled Holes - Dry, Water Saturated (Damp) or Water-Filled (Wet) in Cracked and Uncracked Concrete

1a. Recommended Dust Extractor System for drilling into dry and damp uncracked concrete - Attach appropriate size drill bit to the Dust Extractor Vacuum System. The drill bit should conform to ANSI B212.15 and be the appropriate size for the anchor diameter to be installed. Drill hole to the specified embedment depth.

➔ GO TO STEP 6 FOR CARTRIDGE OR BULK SYSTEMS

1b. Traditional Drilling Method for dry, damp and wet cracked and uncracked concrete: Using a rotary hammer drill, and while following the manufacturer's operations manual, select appropriate size drill bit in compliance with ANSI B212.15, drill hole into the base material to the specified embedment depth. **CAUTION:** Always wear appropriate personal protection equipment (PPE) for eyes, ears and skin. Avoid inhalation of dust during the drilling and cleaning process. Refer to the Safety Data Sheet (SDS) for details prior to proceeding.

BLOW (2X) - BRUSH (2X) - BLOW (2X)

2. BLOW - NOTE: Remove any standing water from hole prior to beginning the cleaning process by using oil-free compressed air using a minimum pressure of 87 psi (6 bar). Insert the air wand to the bottom of the drilled hole and blow out the debris with an up/down motion for a minimum of 2 seconds/cycles (2X).

3. BRUSH - Select the correct wire brush size for the drilled hole diameter, making sure that the brush is long enough to reach the bottom of the drilled hole. Reaching the bottom of the hole (use brush extension if required), brush in an up/down and twisting motion for 2 cycles (2X). **CAUTION:** The brush should be clean and contact the walls of the hole. If it does not, the brush is either too worn or small and should be replaced with a new brush of the correct diameter.

4. BLOW - Blow the hole out once more to remove brush debris using oil free compressed air with a minimum pressure of 87 psi (6 bar). Insert the air wand to the bottom of the drilled hole and blow out the debris with an up/down motion for a minimum of 2 seconds/cycles (2X). Visually inspect the hole to confirm it is clean. **NOTE:** If installation will be delayed for any reason, cover cleaned holes to prevent contamination.

➔ GO TO STEP 6 FOR EITHER CARTRIDGE OR BULK SYSTEMS

Core Drilled Holes - Dry or Water Saturated (Damp) in Uncracked Concrete

1. Using a core drill, and while following the manufacturer's operations manual, select appropriate size drill bit. Drill hole into the base material to the specified embedment depth. Remove center core and ensure that the specified embedment depth can be achieved. **CAUTION:** Always wear appropriate personal protection equipment (PPE) for eyes, ears and skin. Avoid inhalation of dust during the drilling and cleaning process. Refer to the Safety Data Sheet (SDS) for details prior to proceeding.

2. FLUSH - Using pressurized water, place the tip of the water nozzle at the bottom or back of the drilled hole. Rinse the drilled hole with pressurized water until the water flows clean and free of debris.

BLOW (2X) - BRUSH (2X) - BLOW (2X)

3. BLOW - NOTE: Remove any standing water from hole prior to beginning the cleaning process. Using oil-free compressed air with a minimum pressure of 87 psi (6 bar), insert the air wand to the bottom of the drilled hole and blow out the debris with an up/down motion for a minimum of 2 seconds/cycles (2X).

4. BRUSH - Select the correct wire brush size for the drilled hole diameter, making sure that the brush is long enough to reach the bottom of the drilled hole. Reaching the bottom of the hole (use brush extension if required), brush in an up/down and twisting motion for 2 cycles (2X). **CAUTION:** The brush should be clean and contact the walls of the hole. If it does not, the brush is either too worn or small and should be replaced with a new brush of the correct diameter.

5. BLOW - Blow the hole out once more to remove brush debris using oil free compressed air with a minimum pressure of 87 psi (6 bar). Insert the air wand to the bottom of the drilled hole and blow out the debris with an up/down motion for a minimum of 2 seconds/cycles (2X). Visually inspect the hole to confirm it is clean. **NOTE:** If installation will be delayed for any reason, cover cleaned holes to prevent contamination.

➔ GO TO STEP 6 FOR CARTRIDGE OR BULK SYSTEMS

DISPENSING PREPARATION

Cartridge Systems

6. CAUTION: Check the expiration date on the cartridge to ensure it is not expired. **Do not use expired product!** Remove the protective cap from the cartridge and insert the cartridge into the recommended dispensing tool. Before attaching mixing nozzle, balance the cartridge by dispensing a small amount of material until both components are flowing evenly. For a cleaner environment, hand mix the two components and let cure prior to disposal in accordance with local regulations.

7. Only after the cartridge has been balanced, screw on the proper Dayton Superior Corporation mixing nozzle to the cartridge. Do not modify mixing nozzle and confirm that internal mixing element is in place prior to dispensing adhesive. Take note of the air and base material temperatures and review the working/full cure time chart prior to starting the injection process.

8. Dispense an initial amount of material from the mixing nozzle onto a disposable surface until the product is a uniform gray color with no streaks, as adhesive must be properly mixed in order to perform as published. Dispose of the initial amount of adhesive according to federal, state and local regulations prior to injection into the drill hole. **CAUTION:** When changing cartridges, never re-use nozzles. For a new cartridge (or if working time has been exceeded), ensure that cartridge opening is clean, install a new nozzle and repeat Steps 6 and 7 accordingly. Leave the mixing nozzle attached to the cartridge upon completion of work.

➔ GO TO STEP 11

FIGURE 2 – MPII for Pro-Poxy 400 All Weather Anchoring Epoxy (continued)

Bulk Systems

The bulk pump uses a two component delivery system whereby metering individual components and mixing of the two components are automatically controlled during dispensing through a metering manifold and disposable mixing nozzle. The bulk pump has a minimum input air pressure requirement of 80-90 psi @ 15 CFM, supplied through a regulator which reduces the pressure in order to control the rate of dispensing. The two individual adhesive components stay separate throughout the system, until they reach the specified disposable mixing nozzle via a manifold at the end of the bulk pump wand. Under normal operation, the bulk pump must be capable of dispensing the individual components at a 1:1 mix ratio by volume with a tolerance of ± 2%.

6. **CAUTION:** Check the expiration date on each product container to ensure it is not expired. **Do not use expired product!** Epoxy materials may separate. This is normal and can be expected when stored over a period of time. Part A Resin should not be remixed. Part B Hardener should be remixed with a clean 5 gallon paint stick in a "butter churning" motion to homogenize the product prior to pouring the hardener into the appropriate side of the bulk dispensing pump. **CAUTION:** Stir carefully to avoid whipping air into product.

7. **NOTE: Review Bulk Pump Operations Manual thoroughly before proceeding and follow all steps necessary for set- up and operation of the pump.** Pour Resin into Side A pump reservoir. Close lid on Side A. Pour Hardener into Side B pump reservoir. Close lid on Side B. **NOTE:** Fill hoppers at least one-half full. Incoming air supply pressure should be maintained at approximately 100 psi (6.9 bar). Follow bulk pump instructions for filling the metering pump and outlet assembly, then bleed the air from the system and fill the hose and applicator.

8. Balance the bulk pump machine following instructions in the Bulk Pump Operations Manual. **NOTE:** Be sure to establish proper flow of both materials at the applicator tip prior to attaching mixing nozzle. A ratio check should always be performed before installation begins to ensure that equal volumes of Part A and Part B are being dispensed.

9. After the proper pump dispensing ratio has been verified, place the appropriate mixing nozzle onto the bulk pump wand. Do not modify mixing nozzle. Confirm that the internal mixing element is in place prior to dispensing adhesive. Never use without the mixing nozzle.

10. Dispense the initial amount of material from the mixing nozzle onto a disposable surface until the product Dispose of the initial amount of adhesive according to federal, state and local regulations prior to injection into the drill hole. Take note of the air and base material temperatures and review the working/full cure time chart prior to starting the injection process.

INSTALLATION AND CURING
Vertical Down, Horizontal and Overhead

11. **NOTE:** The engineering drawings must be followed. For any applications not covered by this document, or for installation questions, please contact Dayton Superior Corporation. Insert the mixing nozzle, using an extension tube if necessary, to the bottom of the hole and fill from the bottom to the top approximately 2/3 full, being careful not to withdraw the nozzle too quickly as this may trap air in the adhesive. For internally threaded inserts only fill the hole to approximately half. **NOTE:** Building Code Requirements for Structural Concrete (ACI 318-11 / ACI 318-14) requires the Installer to be certified where adhesive anchors are to be installed in horizontal or overhead installations. If extension tubing is needed, it may be connected onto the outside of the tip of both the small mixing nozzle and the large mixing nozzle. **NOTE:** When using a pneumatic dispensing tool, ensure that pressure is set at 90 psi (6.2 bar) maximum.

12. Piston plugs must be used for overhead installations and those between horizontal and overhead. Select the proper piston plug for the drill hole diameter. The piston plug fits directly onto the tip of both the small and large mixing nozzle. Extension tubing may also be used if needed in order to reach the bottom of the drill hole.

13. Prior to inserting the threaded rod or rebar into the hole, make sure it is straight, clean and free of oil and dirt and that the necessary embedment depth is marked on the anchor element. Insert the anchor element into the hole while turning 1-2 rotations prior to the anchor reaching the bottom of the hole. Excess adhesive should be visible on all sides of the fully installed anchor. For installing the internally threaded inserts, thread a bolt into the insert and press it into the hole with a slight twisting motion. To finish, drive the insert down with sharp blows to the head of the bolt with a hammer until it is flush with the surface of the concrete. **CAUTION:** Use extra care with deep embedment or high temperature installations to ensure that the working time has not elapsed prior to the anchor being fully installed.

14. For overhead installations, horizontal and inclined (between horizontal and overhead), wedges should be used to support the anchor while the adhesive is curing. Take appropriate steps to protect the exposed threads of the anchor element from uncured adhesive until after the full cure time has elapsed.

15. Do not disturb, torque or apply any load to the installed anchor until the specified full cure time has passed. The amount of time needed to reach full cure is base material temperature dependent.