



Manhole & Catch Basin Grade Adjustment System

**SAFER, FASTER, LIGHTER & MORE COST EFFECTIVE
THAN CONCRETE**



*Approved by DOT's and Sewer Agencies
throughout the U.S. and Canada*

THE ABSOLUTE BEST VALUE FOR THE LONG HAUL

PRO-RING™ is the worlds first and only manhole grade adjustment system made from Expanded Polypropylene (EPP), the same engineered polymer material that has been used in the automotive industry since the 1980's.

ANGLE RING >

For slope adjustments

FINISH RING >

For finite adjustments

GRADE RING >

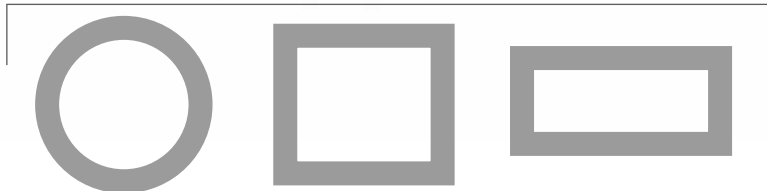
For gross adjustments



TESTED TO MEET OR EXCEED THE FOLLOWING STANDARDS:

- AASHTO M306
HS-20 & HS-25 Load
- ASTM C1244
- ASTM C969
- ASTM D4819-13
- SAE J1885

AVAILABLE IN MULTIPLE ROUND, SQUARE & RECTANGULAR SIZES



PRO-RING ADVANTAGES

The Best Warranty in The Business!

Ours is simply the best in the business! The PRO-RING™ system is backed by an industry leading 25 Year Material Warranty. Since first being introduced in 2010, not a single failure or claim has been made against the warranty.

Cost savings every where you look

They say time is money, see for yourself how the PRO-RING™ system dramatically reduces the time and equipment required to construct or reconstruct a single manhole adjustment. Manhole repair sites can be opened and closed in a single day or in a few hours depending on pavement type and site conditions. This results in significant savings and minimizes the impact on traffic when it is necessary to close traffic lanes or streets to complete the work. The use of the PRO-RING™ system may result in as much as a **20% to 30% Overall Savings** when considering the expected 50 Year Design Life.

Safer

Concrete grade rings are heavy and may cause injury during handling and installation. The PRO-RING™ system reduces the risk of injury, lost time and comp claims. At 7.5 pcf density, a single 36" x 24" x 6" PRO-RING™ weighs just 14 pounds and is easy to handle and install by a single worker. The ability to hand carry these adjustment rings into back yards, easements and remote locations, makes the overall process safer and less disruptive.

Faster

People are amazed at our demonstrations, when one person can install an entire PRO-RING™ system in just minutes. The adjustment system is easy to assemble, watertight, and can be installed to within one quarter inch of the desired elevation.

Lighter

On average, a typical concrete grade ring weighs 40 to 70 pounds per vertical inch making PRO-RING™ almost 20 times (95%) lighter. The PRO-RING can literally be lifted with your finger. ARPRO® Expanded Polypropylene (EPP) has been used for challenging automotive applications and is renowned for its exceptional strength-to-weight ratio, its stability and toughness. EPP is not only durable, it has excellent chemical resistance and a long service life under the harshest conditions.



HOW MUCH ARE YOU CURRENTLY PAYING?

PRO-RING VS CONCRETE CALCULATOR Up to **30%** savings over the lifetime*



Download our cost calculator and see for your self
Also available on the PRO-RING web page



*Based on a 50 year design life. Results may vary depending on specific costs associated with the installation such as labor, equipment and other variables.

THE CHOICE IS EASY



VS



VS



VS



CONDENSED SPECIFICATIONS



MANHOLE AND CATCH BASIN GRADE ADJUSTMENTS

Manhole and catch basin grade adjustments shall consist of a variety of heights (thicknesses), diameters and shapes all conforming to the following requirements:

- A. Grade Adjustments – The grade adjustments shall be manufactured from ARPRO® Expanded Polypropylene (EPP), black, 5000 series meeting ASTM D3575 and ASTM D4819-13; B6D7G4L3M₂4S2T₁7W7. The grade adjustments shall be manufactured using a high compression molding process to produce a finished density of 120 g/l (7.5 pcf). The grade adjustments shall meet or exceed the load rating requirements of AASHTO M306, HS-20 and HS-25.
- B. “Grade” adjustments may contain either an upper and lower keyway (tongue and groove) for vertical alignment and/or an adhesive trench on the underside with a flat top.
- C. “Finish” or “Flat” adjustments may either have a keyway (groove) on the underside for vertical alignment and/or an adhesive trench with a flat upper surface. These adjustments shall be available in heights (thicknesses) which will allow final adjustment of the frame and cover or grate to within ¼” (one quarter inch) of the specified final elevation. “Finish” adjustments may also have a keyway on the upper surface of the inner diameter to facilitate installation of an “Angle” adjustment.
- D. “Angle” adjustments may either have an upper and lower keyway (tongue and groove) for vertical alignment and/or an adhesive trench on the underside. When required, the “Angle” adjustments shall allow final adjustment of the frame and cover or grate to within ¼” (one quarter inch) of the specified final elevation.

ADHESIVE/SEALANT

- A. Any adhesive or sealant used for watertight installation of the grade adjustment rings shall be M-1 Structural Adhesive/Sealant or equal meeting the following specifications: ASTM C-920, Type S, Grade NS, Class 25, Uses NT, T, M, G, A and O Federal Specification TT-S-00230-C Type II, Class A . Corps of Engineers CRD-C-541, Type II, Class A Canadian Standards Board CAN 19, 13-M82 AAMA 802.3-08 Type II, AAMA 803.3-08 Type I and AAMA 805.2-08 Group C
- B. Other adhesives or sealants may only be used with engineer or owner’s written authorization.

INSTALLATION

- A. Installation and surface preparation shall be in accordance with the manufacturer’s instructions.
- B. The joint between the first grade ring and top of the manhole, catch basin or utility structure shall be sealed using the specified adhesive/sealant.
- C. If the top of the manhole, catch basin or utility structure is not level or is irregular, then a bed of specified mortar or grout shall be placed on the top surface of the utility structure and the first grade ring shall be embedded and leveled into the bed of material.
- D. The remaining joints between all grade adjustments and the frame and cover or grate shall be sealed using the specified adhesive/sealant.
- E. No other materials shall be used in the construction of the grade adjustment area beyond those specified above. Prohibited materials include, but are not limited to wood or wood shims of any kind, concrete, brick, block, stones, etc.

M-1 ADHESIVE/SEALANT



Product Description

M-1® is a moisture curing, polyether adhesive/sealant designed for applications in damp, dry, or cold climates. M-1® is solvent free and contains no isocyanates. M-1® will not shrink upon curing, will not discolor when exposed to UV light, and can not “out-gas”, or bubble on damp surfaces as urethane sealants often do. M-1® is capable of joint movement in excess of 35% in both compression and extension. M-1® can be used effectively in many difficult construction site conditions such as wet or dry climates and at temperatures as low as 32°F (0°C).

Applicable Performance Standards

- ASTM C920, Type S, Grade NS, Class 35
Uses NT, T1, M, G, A & O
- ASTM E84, Class A
- Federal Specification TT-S-00230-C Type II, Class B
- Corps of Engineers CRD-C-541, Type II, Class B
- Canadian Standards Board CAN 19, 13-M82

Advantages

- Solvent free, 100% solids will not shrink
- Non-slump, applies vertically and overhead
- 20 minute skin over
- No outgassing on damp surfaces
- Good color stability, will not suntan
- Paintable within 24 hours (See limitations)
- Gun grade, no special tools or mixing required
- Application at temperatures as low as 32°F (0°C)

INSTALLATION INSTRUCTIONS



1.

Clean the surface of the manhole to be sure no loose material or debris is left behind. Use a chipping hammer or chisel and whisk broom.



2.

Measure the distance from the top of the manhole to the desired final elevation, subtract the height of the casting and select the rings.



5.

Repair any minor surface defects that may be present with a non-shrink repair mortar to ensure a flat, level surface.



6.

Dry stack the selected rings and verify the measurements to ensure the desired elevation has been attained.



9.

Apply a $\frac{1}{4}$ " to $\frac{1}{2}$ " bead of M-1 adhesive to the groove and to the outer glue trench of the next Grade Ring or proceed to step 10 for a Finish Ring.



10.

Apply M-1 as before to each groove on the underside of the Finish Ring and position with the grooves down onto the Grade Ring.



13.

Place two $\frac{1}{2}$ " beads of M-1 adhesive on the top surface of the Finish or Angle Ring prior to setting the manhole frame casting.



14.

Install and center the manhole frame casting. With installation complete, backfilling and paving may proceed immediately. Take care as to not displace the rings or the frame.



3.

If the surface on top of the manhole is too damaged, rough or irregular, place a ½” thick bed of non-shrink mortar or grout on the surface and rough in.



4.

Embed the first ring directly into the mortar, center it and make sure the ring is level. Proceed to step 6 to determine remaining rings required. If step 3&4 are not required, proceed to step 5.



7.

If Angle Rings are used, a paint mark should be made on the rings during dry fit alignment to ensure proper position once installed with the adhesive. Once final elevation is set, remove the ring stack and set upside down off to the side.



8.

Overfill the grooves in underside of the Grade Ring with the M-1 adhesive. Flip the ring with adhesive side down on-to manhole, making sure it is centered.



11.

For Angle Rings, place a ¼” bead of M-1 into the groove on the underside of the Angle Ring and to the inside shoulder of the Finish Ring.



12.

Place the Angle Ring onto the Finish Ring with the adhesive facing down, making sure to align with any previously applied marks.



PRO RING VIDEO >

Or visit our PRO-RING web page



PRO-RING SIZES

ROUND RINGS 34" O.D. X 24" I.D.

PART NUMBER	RING TYPE	RING HEIGHT
34-24F-075	FINISH	3/4"
34-24F-100	FINISH	1"
34-24F-125	FINISH	1-1/4"
34-24F-150	FINISH	1-1/2"
34-24F-175	FINISH	1-3/4"
34-24F-200	FINISH	2"
34-24F-225	FINISH	2-1/4"
34-24F-250	FINISH	2-1/2"
34-24F-400	FINISH	4"
34-24F-600	FINISH	6"
34-24A-100	ANGLE	3/4" TO 1-3/4"
34-24G-200	GRADE	2"
34-24G-400	GRADE	4"
34-24G-600	GRADE	6"

ROUND RINGS 35" O.D. X 25" I.D.

PART NUMBER	RING TYPE	RING HEIGHT
35-25F-075	FINISH	3/4"
35-25F-100	FINISH	1"
35-25F-125	FINISH	1-1/4"
35-25F-150	FINISH	1-1/2"
35-25F-175	FINISH	1-3/4"
35-25F-200	FINISH	2"
35-25F-225	FINISH	2-1/4"
35-25F-250	FINISH	2-1/2"
35-25F-400	FINISH	4"
35-25F-600	FINISH	6"
35-25A-100	ANGLE	3/4" TO 1-3/4"
35-25G-200	GRADE	2"
35-25G-400	GRADE	4"
35-25G-600	GRADE	6"

ROUND RINGS 36" O.D. X 24" I.D.

PART NUMBER	RING TYPE	RING HEIGHT
36-24F-075	FINISH	3/4"
36-24F-100	FINISH	1"
36-24F-125	FINISH	1-1/4"
36-24F-150	FINISH	1-1/2"
36-24F-175	FINISH	1-3/4"
36-24F-200	FINISH	2"
36-24F-225	FINISH	2-1/4"
36-24F-250	FINISH	2-1/2"
36-24F-400	FINISH	4"
36-24F-600	FINISH	6"
36-24A-100	ANGLE	3/4" TO 1-3/4"
36-24G-200	GRADE	2"
36-24G-400	GRADE	4"
36-24G-600	GRADE	6"

ROUND RINGS 40" O.D. X 27" I.D.

PART NUMBER	RING TYPE	RING HEIGHT
40-27F-075	FINISH	3/4"
40-27F-100	FINISH	1"
40-27F-125	FINISH	1-1/4"
40-27F-150	FINISH	1-1/2"
40-27F-175	FINISH	1-3/4"
40-27F-200	FINISH	2"
40-27F-225	FINISH	2-1/4"
40-27F-250	FINISH	2-1/2"
40-27F-400	FINISH	4"
40-27F-600	FINISH	6"
40-27A-100	ANGLE	3/4" TO 1-3/4"
40-27G-200	GRADE	2"
40-27G-400	GRADE	4"
40-27G-600	GRADE	6"

ROUND RINGS 40" O.D. X 31" I.D.

PART NUMBER	RING TYPE	RING HEIGHT
40-31G-075F	GRADE FLAT	3/4"
40-31G-100F	GRADE FLAT	1"
40-31G-125F	GRADE FLAT	1-1/4"
40-31G-150F	GRADE FLAT	1-1/2"
40-31G-200F	GRADE FLAT	2"
40-31A-100	ANGLE	3/4" TO 1-3/4"
40-31G-400F	GRADE FLAT	4"
40-31G-600F	GRADE FLAT	6"

ROUND RINGS 46" O.D. X 36" I.D.

PART NUMBER	RING TYPE	RING HEIGHT
46-36F-075	FINISH	3/4"
46-36F-100	FINISH	1"
46-36F-125	FINISH	1-1/4"
46-36F-150	FINISH	1-1/2"
46-36F-175	FINISH	1-3/4"
46-36F-200	FINISH	2"
46-36F-225	FINISH	2-1/4"
46-36F-250	FINISH	2-1/2"
46-36F-400	FINISH	4"
46-36F-600	FINISH	6"
46-36A-100	ANGLE	3/4" TO 1-3/4"
46-36G-200	GRADE	2"
46-36G-400	GRADE	4"
46-36G-600	GRADE	6"

RECTANGULAR 36" I.D. X 24" I.D.

PART NUMBER	RING TYPE	RING HEIGHT
RT 36-24-075	FLAT	3/4"
RT 36-24-100	FLAT	1"
RT 36-24-125	FLAT	1-1/4"
RT 36-24-150	FLAT	1-1/2"
RT 36-24-200	FLAT	2"
RT 36-24-300	FLAT	3"
RT 36-24-400	FLAT	4"
RT 36-24A1-2L	ANGLE (long)	1" TO 2"
RT 36-24A1-2S	ANGLE (short)	1" TO 2"

RECTANGULAR 30" I.D. X 24" I.D.

PART NUMBER	RING TYPE	RING HEIGHT
RT 30-24-075	FLAT	3/4"
RT 30-24-100	FLAT	1"
RT 30-24-125	FLAT	1-1/4"
RT 30-24-150	FLAT	1-1/2"
RT 30-24-200	FLAT	2"
RT 30-24-300	FLAT	3"
RT 30-24-400	FLAT	4"
RT 30-24A1-2L	ANGLE (long)	1" TO 2"
RT 30-24A1-2S	ANGLE (short)	1" TO 2"

RECTANGULAR 24" I.D. X 20" I.D.

PART NUMBER	RING TYPE	RING HEIGHT
RT 24-20-075	FLAT	3/4"
RT 24-20-100	FLAT	1"
RT 24-20-125	FLAT	1-1/4"
RT 24-20-150	FLAT	1-1/2"
RT 24-20-200	FLAT	2"
RT 24-20-300	FLAT	3"
RT 24-20-400	FLAT	4"
RT 24-20A1-2L	ANGLE (long)	1" TO 2"
RT 24-20A1-2S	ANGLE (short)	1" TO 2"

SQUARE RINGS 30" I.D. X 30" I.D.

PART NUMBER	RING TYPE	RING HEIGHT
SQ 30-30-075	FLAT	3/4"
SQ 30-30-100	FLAT	1"
SQ 30-30-125	FLAT	1-1/4"
SQ 30-30-150	FLAT	1-1/2"
SQ 30-30-200	FLAT	2"
SQ 30-30-300	FLAT	3"
SQ 30-30-400	FLAT	4"
SQ 30-30A1-2	ANGLE	1" TO 2"

SQUARE RINGS 24" I.D. X 24" I.D.

PART NUMBER	RING TYPE	RING HEIGHT
SQ 24-24-075	FLAT	3/4"
SQ 24-24-100	FLAT	1"
SQ 24-24-125	FLAT	1-1/4"
SQ 24-24-150	FLAT	1-1/2"
SQ 24-24-200	FLAT	2"
SQ 24-24-300	FLAT	3"
SQ 24-24-400	FLAT	4"
SQ 24-24A1-2	ANGLE	1" TO 2"



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MADE IN USA

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