

Advantages of Round Manhole Collars over Square Manhole Collars

The use of round manhole collars over square manhole collars is growing in popularity in the United States. This is primarily due to recent advances in cutting technology, which now makes a quick, clean, round cut possible. The absence of affordable cutters to achieve this perfect round excavation around the manhole frame has limited the use of round manhole collars in the past.

The following is a partial list of advantages afforded by the use of round concrete manhole collars over square concrete manhole collars:

1. With a round cutter you can achieve a perfect circular cut from the surface of the roadway all the way to the depth of the manhole cone. In order to get a good cut for a square collar, you must cut past the corners, which then requires a repair of the pavement beyond the collar. The sides of the excavation are not always completely machine cut, which causes them to be less than perfect, and more likely to be adversely affected by upward forces.
2. It is very difficult to properly steel reinforce a square concrete collar. With a round collar, the use of circular reinforcing rods allows for perfect placement and maximum strength.
3. A round collar requires less excavation and utilizes less concrete by eliminating the square corners, which allows for a more economical repair by reducing both materials and labor.
4. A round collar makes the gradient transition from the frame to the road surface easier as it is a uniform distance from the frame to the road in all directions around the manhole.
5. The elimination of the corners on the collar helps minimize the destructive forces that the collar is subjected to by reducing the length of the moment arm.
6. When a square collar is placed around a round manhole frame the planes of weakness created by the varying collar thickness encourages the concrete collar to crack, which leads to premature failure.
7. A round collar has a smaller perimeter than the same size concrete collar. The smaller the perimeter, the smaller the entry point for water between the collar and the pavement. Water making its way into and under the pavement can be detrimental to pavement life. This smaller perimeter is also less costly to seal at the time of the repair and less costly to maintain over time.
8. In cold weather states, a round collar is less likely to be adversely affected by freeze/thaw forces. A round collar is also much easier on a snow plow.
9. A round manhole collar is aesthetically more pleasing than square because it mimics the shape of the manhole lid.
10. If some movement in the collar does occur, a round collar will not present a sharp corner to traffic or plows.



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