

## MANHOLE SHIELDS

### DESCRIPTION AND USE

#### 1. GENERAL

1.01 This section describes the B, C, and D Manhole Shields which are used to keep surface water and dirt out of open manholes. The adjustable manhole shield is retained as a superseded type, because of the large number still in use.

1.02 This section is reissued to include the D Manhole Shield.

#### 2. B, C AND D MANHOLE SHIELDS

2.01 The B and C Shields, illustrated in Fig. 1, are made of aluminum. The C Manhole Shield is the same as the B Shield except that it has a highway-yellow baked enamel finish. One end of the shield is equipped with a clamp. It is designed to fit circular manhole frames 24 to 36 inches in diameter. The ends of the shield overlap and the desired size is obtained by increasing or decreasing the amount of the overlap. The shield is held at the desired position by tightening the thumb screws in the clamp.

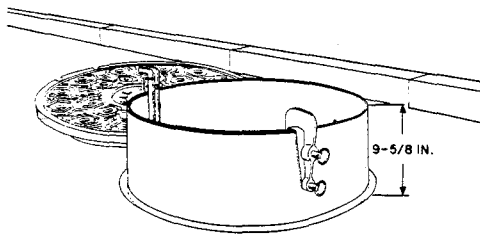


Fig. 1—B or C Manhole Shield

2.02 The D Manhole Shield (Fig. 2), is a steel rim having a circumferential channel at each end to accept an inflatable rubber tube which is furnished as part of the shield. The tube, a 26-inch by 1.25-inch thorn proof bicycle tube, when inflated provides a seal to the manhole frame seats with diameters from 28-1/2 to 29-1/2 inches and from 31-1/2 to 33-1/2 inches. It will not fit manhole frames having seat diameters of 24 or 36 inches. The shields are available in 8 and 12-inch heights.

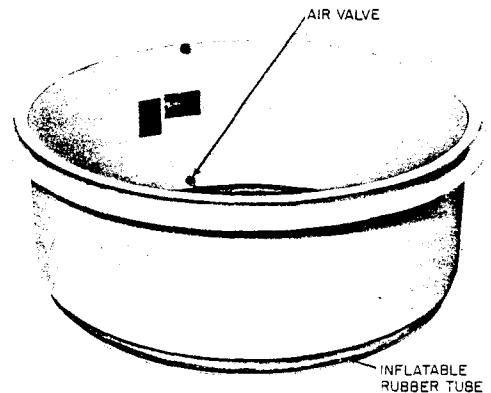


Fig. 2—D Manhole Shield

#### 3. ADJUSTABLE MANHOLE SHIELD

3.01 The adjustable manhole shield, illustrated in Fig. 3, is painted red. One end of the shield is equipped with two clamps. The shield is designed to fit circular manhole frames 24 to 36 inches in diameter. The ends of the shield overlap and the desired size is obtained by increasing or

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decreasing the amount of the overlap. The shield is held at the desired position by tightening the thumb screws in the clamps.

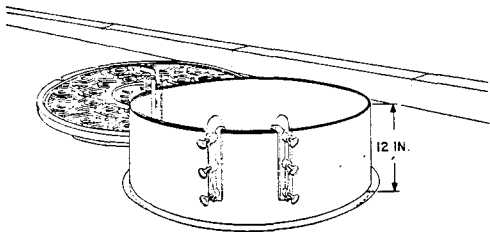


Fig. 3—Adjustable Manhole Shield

#### 4. USE OF B, C, AND ADJUSTABLE SHIELDS

**4.01** Adjust the shield so that it will rest in the seat of the manhole frame and then place it in position. When the shield is used to keep out water, seal the space between the shield and the frame with plastic duct seal. Form the duct seal into a rope having a diameter about twice as large as the opening to be filled, wrap it around the base of the shield and press the duct seal into the opening.

**4.02** Before a sealed shield is lifted from the manhole frame, remove the duct seal, knead it, and place it in its original package or other suitable container to prevent gathering dirt or other foreign material. Duct seal will not harden and it can be reused.

**4.03** Commercially available caulking guns filled with compound for waterproofing the joint between the shield and the manhole rim may also be used. The compound should be discarded when the manhole shield is removed.

#### 5. USE OF D MANHOLE SHIELD

**5.01** After removing the manhole cover, the cover seat should be cleaned to prevent damage to the tube and to assure sealing. Select the proper end of the shield, install the tube in the channel and place the shield in the cover seat. Inflate the tube until pressure is sufficient to seal. The 8-inch height shield is for use under normal conditions but the 12-inch height should be used when higher water conditions are expected. Either size may be stacked for extra high protection.

**5.02** When the shield is not in use, the rubber tube should be removed and stored with protection from mechanical damage.