

Whitepaper

Innovative Design of Manhole Covers



Aug 4th, 2010

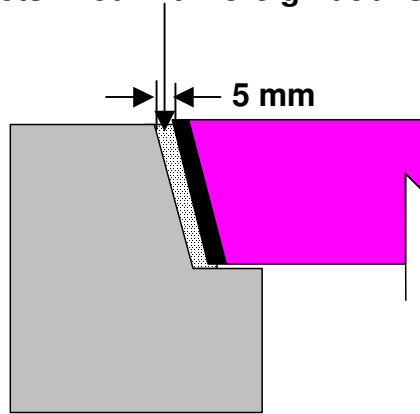
KK Manhole & Gratings Co. Pvt. Ltd.
"Committed to Innovation and Quality"

Background & Problem

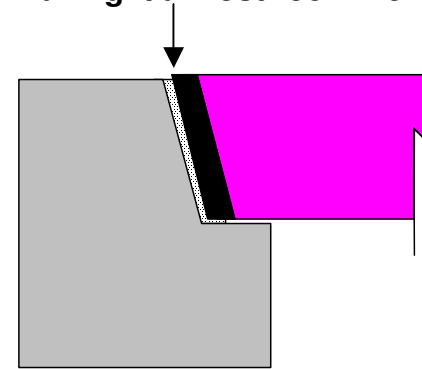
- ▶ IS standard for precast concrete manhole covers provides for a 2 mm m.s. strip around the periphery of the manhole cover
- ▶ It also provides for a 5 mm gap between the cover and the frame, and ...
- ▶ ... two mild steel lifting hooks placed around 2 to 3 inches away from the extreme edge of the cover
- ▶ Finally, it provides for a test load of 20 MT for HD, 10 MT for MD and 2.5 MT for LD
- ▶ **All of the above except the test load have failed to provide a manhole cover that can be opened and closed as and when required**

Problem 1: Corrosion of M.S. strip makes it very difficult to remove the cover of the frame

At the time of erection, gap gets filled with foreign debris



After one year or so, swelling of the m.s. strip compresses the debris from 5 mm to 2 mm, making it almost rock like

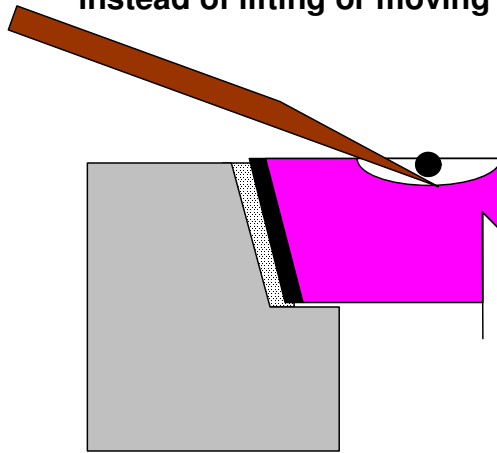


SOLUTION

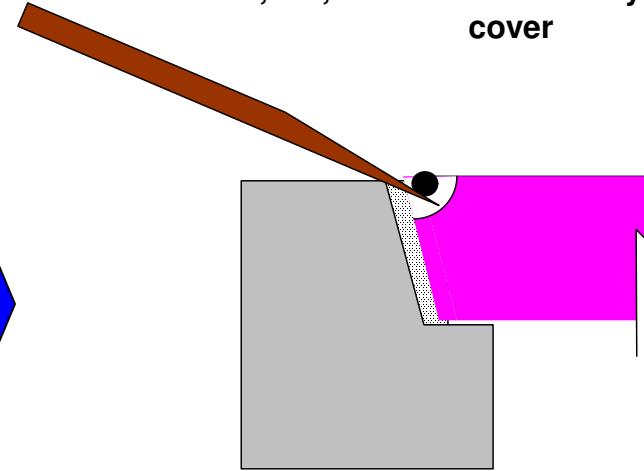
Eliminate the m.s strip around the cover

Problem 2: Position of the lifting hooks does not facilitate easily moving or lifting the cover

CURRENT SITUATION: Cover itself has become fulcrum, i.e., workman is pressing the cover instead of lifting or moving the cover



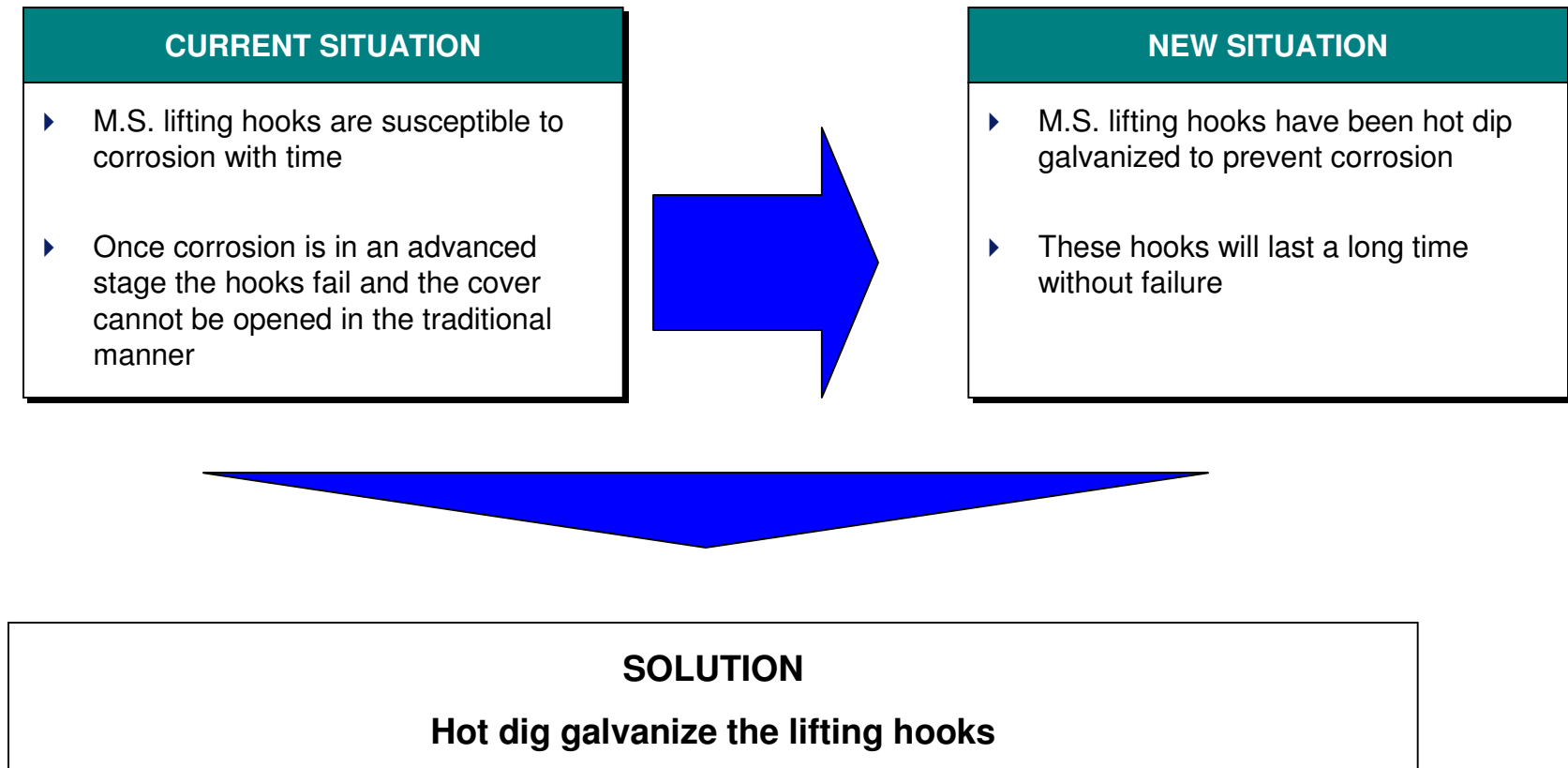
NEW SITUATION: Frame edge has become the fulcrum, i.e., workman can easily lift or move the cover



SOLUTION

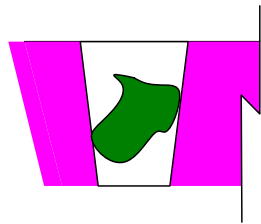
Relocate the lifting hooks to the edge of the cover

Problem 3: Eventual corrosion of lifting hooks again makes it difficult to open the cover



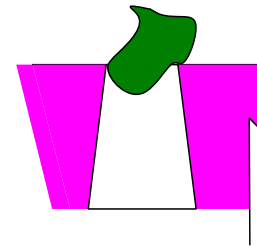
Problem 4: Holes provided for drainage on gully gratings get blocked as dust and other foreign material collect in them

CURRENT SITUATION: Holes get blocked with stones which cannot be removed

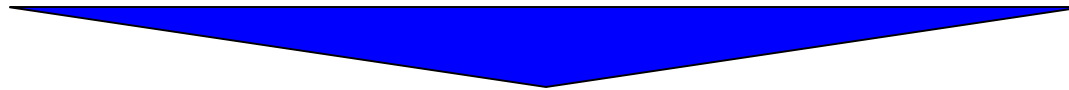


CONVERGENT HOLES

NEW SITUATION: Stone stays on top and can be removed easily



DIVERGENT HOLES



SOLUTION

Make holes diverging in shape

FOR FURTHER INQUIRIES CONTACT

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