

# Vanstone Precast (Pty) Ltd

REINFORCED CONCRETE ROUND MANHOLE COVER – ECONO COVER  
600mm dia x 100mm Thick

## STRENGTH TEST IN ACCORDANCE WITH SANS 558

Date of Test 6 September 2019

### Design

The Cover was designed to comply with SANS 558 for class “M” medium duty class (40kN load) on a 100mm diameter test block in the centre of the Cover. This load class is meant for where heavy commercial vehicles have no access e.g. domestic vehicle access, pavements, cycle tracks etc.

It will be seen herein later that the cover is able to withstand a much larger static load but being made of unframed concrete is not recommended for high frequency vehicular traffic.

The size of the Cover is 600mm diameter x 100mm thick extreme. It is made of high strength reinforced concrete.



### Test Procedure

1. The Test Cover was placed in a suitable cast concrete frame and evenly supported all around.
2. A softboard buffer was placed between the Cover and the test block.
3. The test block is a steel cylinder of 100mm diameter x 100mm thick.
4. The load was gradually applied until a system hydraulic pressure of 220 Bar was reached. This corresponds to a force of 136kN. No sign of failure was visible.
5. The load was then increased to a system pressure of 1000 Bar (617 kN) after which the load was removed. Upon turning the cover over, some cracks could be seen in the corner of the recess of the lid. This is either shear or bending failure.



## Comment

The load cell on the test press was calibrated to 1250 bar or 779kN and the result is reliable.

## Conclusion

Based on this test the cover complies with the following standards:

Standard	Class	Load	Comment
SANS 558	HD	135kN	Tested
SANS 50124	B125	125kN	Safe assumption
SANS 1294	HD	150kN	Safe assumption

Please note:

Being made of unframed concrete the cover is not recommended for high frequency vehicular traffic.

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9 April 2019