

23 September 2015

Rob Dickerson
Transnet NZ Ltd.
P O Box 39383
Howick
Manukau 2145

Project No. 1-LA105.15
Lab Ref No. 003/15
Page 1 of 3

LOAD TESTING OF SERVICE BOX AND LID

Client instructions

Carry out testing to test method AS3996-2006 to determine which class from AS3996-2006 - Appendix C the service box and lid meets while installed in situ. First attempt to meet requirements for class A, if successful attempt to meet requirements of class B.

Description

400mmØ Service box and lid. Installed in situ in soil at 98 Cryers Road.

Manufacture Date

2015

Place of manufacture

Whangarei, New Zealand

Material Type

Lid: Injection moulded composite plastic
Base: Rotationally moulded plastic

Clear Opening Size

320mmØ

Test Block Size/Shape

250mmØ Circle

Testing Equipment

10 tonne Enerpac jack, gauge and hand pump, calibrated against a Shimadzu REH100TV Universal Testing Machine complying with Class 1 of International Standard EN ISO 7500-1:2004.

The jack was set up underneath the back of a truck which was hydraulically jacked up off the suspension, using the truck hydraulic rams to give the jack something solid to push against.

Refer to figure 1 on page 3 for test set up photo.



Test Results (Class A)

Testing carried out by Opus International Consultants Albany Laboratory at 98 Cryers Road, East Tamaki on 15/09/15.

Testing Standard:	AS3996-2006 - Appendix C – Class A
Class A Serviceability design load:	6.7kN
Class A Ultimate Limit Design Load:	10.0kN
Permanent Set Measured at 6.7kN load:	1.34 mm
Permanent Set Permissible at 6.7kN load:	3.20 mm
Maximum Deflection at 6.7kN Load:	5.30 mm
Maximum Permissible Deflection at 6.7 kN Load:	7.11 mm
Maximum Applied Load:	10 kN

Observations for Class A

No obvious defects at 10kN applied load

Conclusion for Class A

Product as tested complies with the requirements of the standard for Class A.

Test Results (Class B)

Testing carried out by Opus International Consultants Albany Laboratory at 98 Cryers Road, East Tamaki on 15/09/15.

Testing Standard:	AS3996-2006 - Appendix C – Class B
Class B Serviceability design load:	53.0kN
Class B Ultimate Limit Design Load:	80.0kN

Observations for Class B

While attempting to reach 53.0kN, there was failure in the base at 26.9kN applied load– The lid being pushed down created a bulging effect in the base where the inside of the service box was buckling.

Conclusion for Class B

Product as tested does not comply with the requirements of the standard for Class B.



Figure 1 - Test set up. Photo shows load of 26.9kN applied hence the deformation in the service box.

Tested by: B Richardson
QA Manager/Senior Engineering Technician

Gaith Ali
Engineering Technician

Date tested: 15/09/2015

Approved by: B Richardson 
QA Manager/Senior Engineering Technician

Date approved: 24/09/15

