AS 1180.5—1993

Australian Standard®

Methods of test for hose made from elastomeric materials

Method 5: Hydrostatic pressure

PREFACE

This Standard was prepared by the Standards Australia Committee on Industrial Hose, under the direction of the Multitechnics Standards Policy Board, to supersede the following Standards:

AS		
1180	Methods of test for hose made from elastomeric materials	
1180.4A	Method 5A:	Hydrostatic pressure—Burst test
1180.5B	Method 5B:	Hydrostatic pressure—Proof test
1180.5C	Method 5C:	Hydrostatic pressure—Change-in-length test
1180.5D	Method 5D:	Hydrostatic pressure—Leakage test
1180.5E	Method 5E:	Hydrostatic pressure—Expansion and distortion test

This Standard amalgamates the five separate test methods specified in AS 1180.5A, 5B, 5C, 5D and 5E into a single test method as all the tests are inter-related.

In the preparation of this Standard, account was taken of BS 5173, *Methods of test for rubber and plastics hoses and hose assemblies*, Part 2: *Hydraulic pressure tests*, and ISO 1402, *Rubber and plastics hoses and hose assemblies—Hydrostatic testing.*

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STANDARDS AUSTRALIA

METHOD

1 SCOPE This Standard specifies methods for the hydrostatic testing of general industrial elastomeric hose and hose assemblies.

NOTE: Elastomeric materials include natural rubber, synthetic rubber and thermoplastic materials.

2 TEST CONDITIONS Unless otherwise specified or impractical, all tests shall be carried out at 23 ±2°C.

3 APPARATUS

3.1 Calibrated pressure gauges—to indicate pressures between 15% and 85% of the full-scale reading, within an accuracy of ±2% of full-scale deflection.

NOTE: Calibrated pressure gauges should be checked for accuracy at frequent intervals, and the fitting of restrictors is recommended to minimize shock damage.

3.2 Hydraulic pump—capable of applying a pressure equal to four times the design working pressure at a uniform rate of increase, so that the final pressure is reached within 2 min.

3.3 Measuring tape—with graduations of 1 mm and capable of measuring at least 1 m.

3.4 Protractor

3.5 Sliding vernier callipers—having a minimum useable tip width of 5 mm and capable of measuring the maximum hose diameter within an accuracy of ±1 mm.

3.6 Timing device—accurate to within 1 s.

4 TEST MEDIUM The test medium shall consist of water or other suitable liquid.

NOTE: The use of air and other gaseous materials as test media is precluded because of possible injury to testing personnel.

WARNING: ALL AIR MUST BE EXPELLED FROM THE TEST PIECE BECAUSE OF THE RISK OF INJURY TO TESTING PERSONNEL DUE TO THE SUDDEN EXPANSION OF TRAPPED AIR RELEASED WHEN THE HOSE BURSTS.

5 TEST PIECES The minimum length of test pieces, complete with end fittings, shall be 750 mm for all tests.

6 TEST PROCEDURES

6.1 Proof pressure test The procedure shall be as follows:

(a) Connect a test piece (see Clause 5) to the outlet of the hydraulic pump.

(b) Fill the test piece with water or other liquid, expelling all air in the test piece through the valve or stopcock in the other (free) end.

(c) Apply the proof pressure specified in the Product Standard at a controlled rate and maintain the pressure for a minimum of 5 min. Release the pressure and then reapply the pressure specified in the Product Standard. Maintain the pressure for a further 5 min.

(d) Inspect the test piece for any signs of leakage during the application and maintenance of the pressure specified in the Product Standard.

(e) Examine the test piece for any visible signs of defects.