



4. Attach micrometer dial via suitable means, e.g., a magnetic base, to the moving head of the testing machine. Position dial so that it may be read easily, to the nearest 0.25 mm, during the compression test cycles.
  5. Advance moving head slowly until specimen just contacts both faces of the testing machine. Stop motion of machine. Bring the micrometer dial to zero. The distance between test machine faces at this point should equal the maximum uncompressed width of the specimen as measured in step 1.
  6. Set test machine to advance at the rate of 12.5 mm/min.
  7. Compress specimen to 50 % of the minimum uncompressed width as measured in step 1.
  8. Release compression at the rate of 12.5 mm/min. Repeat 50 % compression and release cycle. Observe to ensure that the top and bottom edges of the seal do not lose contact with testing machine face while under compression.
  9. On the third compression cycle, load the specimen at the same rate of 12.5 mm/min, but also record total load in N at each 2.5 mm of deflection (reading to the nearest 0.25 mm).
  10. Continue taking readings on the third cycle to a point sufficient to determine W2 (see Section F-7).
  11. Release the load at any convenient rate.
  12. Ink one end of the seal, as received, on a rubber stamp pad and make a print of the cross-section on the test data sheet.
- test procedure step 5 minus the micrometer deflection reading.
3. Calculate the applied pressure at each reading in MPa (newtons per square millimeter) as total load divided by contact area.
  4. Plot the pressure-deflection curve as actual width in mm for each reading versus MPa.
  5. Determine width W1 as follows:
    - a. For Type B1 (heavy wall) seal, W1 shall be the smaller of the following two values:
      - (1) 0.85 times the MUWASBM.
      - (2) The width of seal on the third successive cycle of the pressure-deflection test when compressed to an average of 0.0207 MPa.
    - b. For Type B2 (thin wall) seal, W1 shall be the smaller of the following three values:
      - (1) 0.85 times the minimum uncompressed width of seal, as specified by the manufacturer.
      - (2) 1.15 times the minimum depth of seal measured along the contact surface when compressed to 85 % of the minimum uncompressed width of seal.
      - (3) The width of seal on the third successive cycle of the pressure-deflection test, when compressed to an average pressure of 0.0138 MPa.
  6. Read the pressure developed at width W1 from the pressure-deflection curve.
  7. Read W2 from the pressure-deflection curve as the width of seal corresponding to pressure of four times the pressure measured at W1.

#### **F. CALCULATIONS**

1. Calculate the contact area of the specimen as height of contact face times length.
2. Calculate actual width of specimen in mm at each load reading as width measured in

8. Calculate the movement rating to the nearest 1 mm, as W1 minus W2.

**G. NOTES**

As an alternate to plotting the pressure-deflection curve, the values of W1 and W2 may be obtained by interpolation between data points.

**H. RECORDING TEST RESULTS**

Record on Form TL-610 the actual minimum uncompressed width, the minimum depth at 85 % of minimum uncompressed width for Type B2 seal, W1, W2, movement rating, and any other pertinent comments regarding the

physical properties of the seal which might be detrimental to the intended performance characteristics.

**I. SAFETY AND HEALTH**

Prior to handling, testing or disposing of any waste materials, testers are required to read: Part A (Section 5.0), Part B (Sections: 5.0, 6.0 and 10.0) and Part C (Section 1.0) of Caltrans Laboratory Safety Manual. Users of this method do so at their own risk.

**End of Text (California Test 673 contains 3 pages)**