

**STRENGTH OF ADHESION BETWEEN TUBE AND COVER OF
OPEN WEAVE REINFORCED RUBBER HOSE****Application**

This procedure is used to determine the tube to cover adhesion strength of open weave reinforced rubber hose.

Apparatus Required

Sharp Knife or equivalent

Tension Testing Machine

Must meet the requirements of ASTM D 413.

Conditioning and Test Conditions

All test values indicated herein are based on material conditioned in a controlled atmosphere of 23 +/- 2 °C and 50 +/- 5 % relative humidity for not less than 24 h prior to testing and tested under the same conditions unless otherwise specified.

Procedure

1. Specimens shall be cut at least .20 inch from end of hose.
2. On hose samples with I.D. of 1 inch or over, a 1 inch wide transverse ring must be cut. On hose samples under 1 inch I.D., a 1 inch wide longitudinal specimen must be cut. On hose samples under 2 inches in circumference, a longitudinal specimen shall be cut having a width equal to 1/2 the circumference.

Note: Specimens must not be cut from a transition area (i.e., hose which has a larger I.D. on the ends than in the middle). If the larger I.D. is long enough for sampling, a test specimen can be made from it. Specimens shall not be cut from an area which has a formed bend or ribs and plateau elements.

Date	Action	Revisions
2001 04 10	Revised	Editorial – no technical change A. Cockman
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3. When a transverse ring is used, it must be cut through to form a rectangular strip specimen (see photograph).
4. Separate the cover from the reinforcement and tube at the end of the test specimen so that they will fit into opposing jaws or clamps of the test machine.
5. The testing machine shall separate the tube from the cover at an angle of 180°. Rate of separation shall be 1 inch/minute (machine speed of 2 inches/minute). Continue the separation a distance of 4 inches or full specimen length to indicate the adhesion value.
6. Record the average of the peak adhesion loads as seen on the indicating dial or autographic chart and report results in pounds per inch of width.

Note: Adhesion for this type of hose is recognized as the force necessary to separate the tube from the cover rather than separation of either from its ply as ordinarily done with fully reinforced hose. The cord in this type of hose is only a reinforcing element and not an adhering element.

Chemicals, materials, parts, and equipment referenced in this document must be used and handled properly. Each party is responsible for determining proper use and handling in its facilities.