

CRD-C 515-81

**METHOD OF PREPARATION OF TEST SPECIMENS FROM RUBBER OR PLASTIC WATERSTOP**

**1. Scope**

1.1 This method provides instructions for preparation of test specimens of rubber or plastic waterstop as required for use in tests performed in accordance with CRD-C 513 or 572.

**2. General**

2.1 All test specimens will be prepared from samples of finished waterstop.

2.2 *Rubber.*- Test specimens from samples of finished rubber waterstop will be prepared by cutting and, as needed, by grinding and buffing.

2.3 *Plastic.*- Test specimens from samples of finished plastic waterstop will be prepared by pressure and cutting. Buffing will be employed as needed to insure proper thickness.

**3. Slicing**

3.1 A 12-in.-long (30.48 cm) sample approximately 1-3/4 in. (4.44 cm) in width cut from the waterstop will be sliced using equipment of the type shown in Fig. 1 (Note).

NOTE: This equipment is based on a design developed by B. F. Goodrich Co., Akron, Ohio.

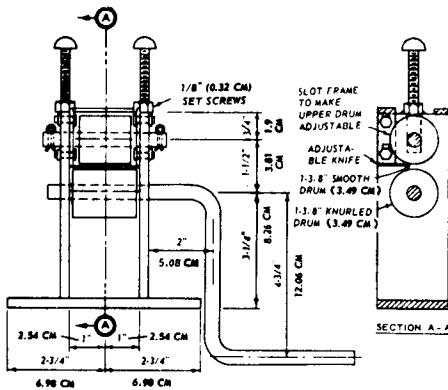


Fig. 1 Waterstop sample slicer

**4. Pressing**

4.1 *Press.*- The press shall be as described in CRD-C 567, heated either electrically or by steam. The temperature in each platen shall be capable of control to within  $\pm 0.5$  C ( $\pm 0.9$  F) in the range 150 to 190 C (300 to 370 F). The platens shall be equipped so as to allow for water cooling.

4.2 *Mold.*- The mold shall be as described in CRD-C 567 except that, if desired, a single cavity mold may be used.

4.3 *Procedure.*- Bring the temperature of the mold to a selected temperature within the range 150 to 180 C (310 to 360 F) in the closed press and hold at this temperature to within  $\pm 0.5$  C ( $\pm 0.9$  F) for at least 20 min before the sample to be molded is inserted. Verify the temperature of the molds by means of a thermometer or other suitable measuring device inserted in one of the overflow grooves and in intimate contact with the mold. Open the press, insert enough material cut from the finished waterstop to overflow the mold when plastic, and close the press in the minimum time possible. Protect the mold from cool metal surfaces and air drafts while inserting the polyvinylchloride.

4.4 The time of molding shall be considered to be the period between the instant the pressure is applied fully and the instant the pressure is released. Hold the mold under a minimum pressure of 35 kgf/cm<sup>2</sup> (500 psi) and at the selected temperature within  $\pm 0.5$  C ( $\pm 0.9$  F) for 5 min after which cut off the heat and cool the platens immediately by running cold water through them.

4.5 *Selection of Temperature.*- The molding temperature selected should approximate the manufacturer's extrusion temperature, normally about 5.6 C (10 F) below the temperature at which the material begins to degrade by bubbling and blistering. If manufacturer's information is not available, it may be necessary to mold more than one set of specimens to determine the proper molding temperature. A 5.6 C (10 F) increment between sets is recommended.

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NOTE 2.-The intent of this procedure is to select a molding temperature which will yield a specimen having properties similar to the parent finished waterstop. It has been noted that the use of a molding temperature too far below the proper molding temperature may produce erroneous elongation properties.

**5. Grinding and Buffing**

5.1 *Grinder and Buffer.*- The grinder and buffer shall be as described in CRD-C 567 except that the wheel shall have a minimum width of 2 in. The grinder shall preferably be mounted on a floor stand enclosing a dust-collecting unit and a removable catch pan. A grinding wheel and backup roller assembly shall be mounted on each end of the motor. The roller distance from the grinding wheel shall be precisely adjustable, by

means of a thickness adjusting screw calibrated in divisions corresponding to 0.001 in. (0.25 mm). The wheels shall be mounted directly on the motor shaft, within dust-collection guards and shall be easily removed or replaced. The grinder shall be equipped with a wheel-dressing attachment. The attachment shall be attachable to the roller frame and shall be capable of accurately dressing the face of the wheel by traversing an industrial diamond completely across the face of the wheel. The grinder shall be equipped with a cylindrical specimen attachment capable of sizing cylindrical pieces of from 3/4- to 2-1/4-in. (1.9- to 5.7-cm) diameter.

5.2 *Procedure.*- The procedure shall be as prescribed in CRD-C 567.