STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard

METHODS OF TEST FOR UNPLASTICIZED PVC (UPVC) PIPES AND FITTINGS

AS 1462.5
METHOD FOR DETERMINING THE SOFTENING POINT OF UPVC PIPES AND FITTINGS

1 SCOPE. This standard sets out the method for determining the softening point of unplasticized PVC (UPVC) pipes and fittings.

2 RELEVANCE OF TEST. The softening point of a thermoplastics material is the temperature at which a given load will deflect a sample of the material by a set amount. The softening point is useful in making comparisons, but bears no direct relationship to the service temperature suitability of a product.

3 APPARATUS. The following apparatus is required:

(a) Clamp and quadrant conforming to the dimensions shown in Fig. 1. The quadrant shall be marked at 30 degrees from the horizontal (see Fig. 1).

(b) Brass loading device as illustrated in Fig. 2, of mass 20.0 ± 0.1 g.

(c) Water or liquid paraffin bath. The bath shall be equipped with a means of control capable of raising the temperature of the liquid at a rate of 1 ± 0.2°C/min and shall incorporate a stirrer to ensure uniform circulation.

(d) A mercury-in-glass thermometer of appropriate range and graduated in intervals of 0.1°C. The thermometer shall be accurate to 0.2°C. Digital or analogue thermometers complying with the above requirements may be used.

4 TEST SPECIMENS. Two test specimens conforming to the dimensions shown in Fig. 3 shall be tested.

5 PROCEDURE. The procedure shall be as follows:

(a) Mount one test specimen horizontally in a clamp as shown in Fig. 1, so that the plane of its upper surface is level with the zero graduation of the quadrant and 25 ± 0.25 mm of it is free in the form of a cantilever.

(b) Attach the brass weight of 20.0 ± 0.1 g mass with a looped thread as shown in Fig. 2, the weight being supported temporarily so that no load is applied to the test specimen.

(c) Immerse the assembly in a bath of water or liquid paraffin which shall be at a temperature 25°C to 30°C below the softening point specified in the relevant pipe or fitting standard.

(d) Apply the load to the test specimen and raise the temperature of the bath at the rate of 1 ± 0.2°C/min over the period of loading. Stir the liquid continuously during the period of test.

(e) Note and record the temperature of the bath when the upper edge of the free end of the test specimen coincides with the 30 degrees graduation on the quadrant.

(f) Repeat the procedure of steps (a) to (e) for the other test specimen.

(g) Calculate the mean of the temperatures obtained for the two test specimens and record this as the softening point of the material.

6 REPORT. The following information shall be reported:

(a) The Type and/or Class of pipe or fitting tested.
(b) The softening point of the material.