STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard

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

AS 1462.7
METHOD FOR DETERMINING EXTRACTABILITY OF LEAD AND TIN FROM UPVC PIPES AND FITTINGS

1 SCOPE. This standard sets out the method for determining the extractability of lead and tin from unplasticized PVC (UPVC) pipes and fittings.

2 REFERENCED DOCUMENTS. The following standards are referred to in this standard:

AS 2134 Code of Practice for the Chemical Analysis of Materials by Flame Atomic Absorption Spectroscopy

BS 2690 Method of Testing Water Used in Industry
Part 5: Alkalinity, Acidity, pH Value and Carbon Dioxide

BS 3505 Unplasticized PVC Pipe for Cold Water Services

BS 3978 Water for Laboratory Use.

3 TEST SPECIMENS.

3.1 Pipes. Each test specimen shall be a complete section of pipe approximately 500 mm long. Three test specimens shall be tested.

3.2 Fittings. A test specimen shall be a complete fitting or section thereof. If the total area of internal surface to be exposed is less than 0.02 m^2, a number of fittings of the same size and type shall be tested together so that the total internal surface area to be extracted exceeds 0.02 m^2.

4 PROCEDURE. The procedure shall be as follows:

(a) Pre-wash each test specimen for a period of 6 + 0.5, -0 h using cold tap water. Pass the water through the test specimen at a velocity not less than 0.05 m/s while the test specimen is kept full.

NOTES:

1. In order to reduce the quantity of water used in the pre-wash, a non-contaminating cylinder may be inserted inside the pipe or fitting to reduce the volume of flowing water, while maintaining the specified velocity. A non-contaminating cylinder is one which does not contain and will not react with any of the substances being determined.
2. A convenient method of washing is to fit a stopper at one end in which is inserted a glass stopcock. With the test specimen in a vertical position, and the stopcock at the bottom opened to give the desired velocity of flow of water through the test specimen, sufficient water is added to cause it to overflow at all times.

(b) After washing, fill the test specimen with a fresh solution of distilled water at 20 ± 2°C containing 150 + 20, -0 mg of carbon dioxide per litre, and seal both ends with materials which are free of likely contaminants.

NOTE: The solution may be prepared by saturating a quantity of distilled water (complying with BS 3978) with carbon dioxide. Then, after determining the carbon dioxide content by standard methods described in BS 2690, Part 5, the solution may be adjusted to 150 + 20, -0 mg of carbon dioxide per litre by dilution with a calculated amount of carbon dioxide-free distilled water. A fresh solution should be prepared for each determination.

(c) After maintaining the specimen at 20 ± 2°C for 48 + 4, -0 h, decant the solution into a suitable container and retain for analysis as the first extraction.

(d) Repeat the procedure a second and third time without pre-wash to obtain a second and third 48 + 4,-0 h extraction. Retain the third extraction for analysis.

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