

Indian Standard

POLYETHYLENE-ALUMINIUM-POLYETHYLENE COMPOSITE PRESSURE PIPES FOR HOT AND COLD WATER SUPPLIES — SPECIFICATION

(First Revision)

1 SCOPE

1.1 This standard covers coextruded polyethylene composite pressure pipes with an aluminium welded tube reinforced between the inner and outer layers of polyethylene (PE). The inner and outer polyethylene layers are bonded to the aluminium tube by melt adhesive. The nominal pipe sizes, 12 mm to 75 mm outside diameter are covered in this standard. These pipes are used for conveyance of hot and cold water supply for domestic and industrial purposes, municipal water services including internal and external plumbing, air conditioning and heating installations within buildings, and underground irrigation systems.

1.2 This standard relates only to metal and plastic composite pipes incorporating a welded metallic tube. The welded metallic tube itself is capable of sustaining internal pressures. The pipes consisting of metallic layers not welded together are outside the scope of this standard.

1.3 This standard excludes cross-linked polyethylene-aluminium-cross-linked polyethylene (PEX-Al-PEX) pipes.

2 REFERENCES

The standards listed below contain provisions which through reference in this text, constitute provision of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below:

IS No.	Title
737 : 2008	Wrought aluminium and aluminium alloy sheet and strip for general engineering purposes — Specification (fourth revision)

IS No.	Title
2530 : 1963	Methods of test for polyethylene moulding materials and polyethylene compounds
4905 : 2015/ ISO 24153 : 2009	Random sampling and randomization procedures (first revision)
4984 : 2016	Polyethylene pipes for water supply — Specification (fifth revision)
7328 : 2020	Specification for polyethylene material for moulding and extrusion (third <u>second</u> revision)
9845 : 1998	Determination of overall migration of constituents of plastics materials and articles intended to come in contact with foodstuffs — Method of analysis (second revision)
10146 : 1982	Specification for polyethylene for its safe use in contact with foodstuff, pharmaceuticals and drinking water
14885 : 2021	Polyethylene pipes for supply of gaseous fuels — Specification (first revision) 2/
16738 : 2018	Positive list of constituents for polypropylene, polyethylene and their copolymers for its safe use in contact with food stuffs and pharmaceuticals

3 TERMINOLOGY

For the purpose of this standard, terms and definitions given in IS 4984 shall apply.

4 PIPE DESIGNATION

PE-Al-PE composite pipes are designated by nominal outside diameters.

NOTE — The concept of dimension ratio is not relevant to PE-Al-PE pipe and are not used to relate pressure rating with total wall thickness.