



## BSI Standards Publication

# **Plastics piping systems for non-pressure underground drainage and sewerage - Structured-wall piping systems of unplasticized poly(vinyl chloride) (PVC-U), polypropylene (PP) and polyethylene (PE)**

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Part 1: General requirements and performance characteristics

## National foreword

This British Standard is the UK implementation of EN 13476-1:2018. It supersedes BS EN 13476-1:2007, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee PRI/88/1, Plastics piping for non-pressure applications.

A list of organizations represented on this committee can be obtained on request to its secretary.

The responsible UK committee gives the following advice concerning the scope and contents of EN 13476-1:2018.

- Attention is drawn to the scope of this standard, which, together with BS EN 13476-2:2018 and BS EN 13476-3:2018, is applicable to structured-wall plastic piping systems made of unplasticized poly(vinyl chloride) (PVC-U), polypropylene (PP) or polyethylene (PE) with any additives needed to facilitate the manufacture of components conforming to this standard.
- Multilayer composite pipes with an intermediate layer of metal; reinforced pipes; and pipes made of polymers other than PVC-U, PP or PE are not covered by the scope of this standard. The test methods and performance criteria are not applicable to these types of pipe.
- **Recycled material:** The use of recycled or reprocessed materials is encouraged in the UK. However, their use should be strictly in accordance with this standard.
- **Interchangeability:** This standard does not guarantee interchangeability between manufacturers. It is strongly advised that users specify the bore series of pipes (DN/ID) as specified in BS EN 13476-2:2018 and BS EN 13476-3:2018 to maximize the hydraulic performance of these products.
- **Initial ring stiffness:** The BS EN 13476 series specifies four nominal ring stiffness classes (SN): SN2, SN4, SN8 and SN16.
  - DN ≤ 500: SN4, SN8 or SN16;
  - DN > 500: SN2, SN4, SN8 or SN16.

From the viewpoint of installation, SN4 and SN8 are the traditionally recommended classes used in the UK for water company adopted sewers and are to be used if the system is to be installed in accordance with BS EN 752:2017 or BS EN 1610:2015 to achieve the intended resistance to long-term deformation. If use of the SN2 class of pipe or fittings is intended, the installation should first be subject to a structural design soil load / traffic load calculation and the installation technique modified to suit the results of that calculation. The appropriate calculation method is given in the National Annex NA to BS EN 1295-1. The short-term *E* modulus for the material should be taken from Table A.1 of BS EN 13476-1:2018. The long-term value of *E* should be taken as the short-term value divided by the creep ratio. The creep ratio is derived from the tests specified in the 'Mechanical characteristics' section of BS EN 13476-2:2018 or BS EN 13476-3:2018 as appropriate.

- **Impact:** Annex G of BS EN 13476-2:2018 and BS EN 13476-3:2018 details an impact resistance test at 23°C. This is the preferred test in the UK. Annex H therefore becomes informative in the UK.