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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 35451.2-2018

**Polypropylene structure-wall piping systems for underground
drainage and sewerage - Part 2: Polypropylene spirally
enwound structure-wall pipes**

埋地排水排污用聚丙烯(PP)结构壁管道系统 第2部分：聚丙烯缠绕结构壁管材

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Foreword

GB/T 35451 "Polypropylene (PP) structural wall pipe system for buried drainage and sewage disposal" is divided into two parts.

---Part 1. Polypropylene double wall corrugated pipe;

--- Part 2. Polypropylene winding structural wall pipe. This part is the second part of GB/T 35451. This part is drafted in accordance with the rules given in GB/T 1.1-2009. Please note that some of the contents of this document may involve patents. The issuing organization of this document is not responsible for identifying these patents. This part was proposed by the China Light Industry Federation. This part is under the jurisdiction of the National Plastics Standardization Technical Committee (SAC/TC48). This section drafted

by: Asia University Group, Fujian Nachuan Pipe Industry Technology Co., Ltd., Yonggao Co., Ltd., Hangzhou Unicom Industry Co., Ltd., Hebei Yourong Pipe Industry Co., Ltd., Guangdong Baoku Intelligent Pipe Network System Co., Ltd., Gudi Technology Co., Ltd., Jiangsu River Majing Co., Ltd., Hongsheng Plastic (Hangzhou) Co., Ltd. The main drafters of this section. Li Yu, Wei Zuoyou, Huang Jian, Chen Yiming, Niu Jianying, Si Yuan, Li Xianmei, Zhou Minwei, Chen Xiaolin, Yu Shichao. Polypropylene (PP) structural wall pipe for buried drainage and sewage System Part 2. Polypropylene wound structural wall pipe

1 Scope

Part 2 of China's national standard for polypropylene structured wall pipes for buried drainage and sewerage, covering spirally wound pipe. It specifies the terms, definitions, symbols and abbreviations, the materials, the pipe classification, the structure types and connection methods, the requirements, the test methods, the inspection rules and the marking. Spiral winding makes a pipe differently from extrusion: a profiled strip is wound helically onto a mandrel and welded to itself at the seam, which means one machine can make any diameter simply by changing the mandrel. That is why the large sizes are made this way - beyond about a metre, extruding a whole pipe becomes impractical while winding does not care. The trade is the seam, which runs the length of the pipe as a helix and is the feature the standard has to control, since a wound pipe fails at its weld before it fails in its wall. The connection methods matter for the same reason: these pipes are joined in a trench, and the joint is where a sewer leaks.

This part of GB/T 35451 specifies the polypropylene (PP) wound structural wall pipe (hereinafter referred to as "pipe") for buried drainage and sewage. And definitions, symbols and abbreviations, materials, pipe classification, structural types and connections, requirements, test methods, inspection rules and signs, transport And storage. This section is applicable to polypropylene (PP) resin as the main raw material, and polymer material (usually polypropylene) as the auxiliary support structure. Structural wall pipe and pipe fittings (or solid wall pipe fittings) which are formed by winding and forming. This section is applicable to polypropylene winding structural wall pipe systems for non-pressure buried drainage and sewage drainage with long-term use temperature not exceeding 45 °C. test After considering the chemical resistance and temperature resistance of the material, it can also be used for the underground drainage drainage pipe without pressure.

2 Normative references

The following documents are indispensable for the application of this document. For dated references, only the dated version applies to this article. Pieces. For undated references, the latest edition (including all amendments) applies to this document. Plastics -- Determination of density of non-foam plastics -- Part 1 . Dipping method, liquid pycnometer method and titration method Plastics -- Determination of tensile properties of plastics - Part

2. Test conditions for moulding and extruded plastics

GB/T 2828.1-2012. Sampling procedures for counting sampling - Part 1. Quantitative inspection by batches plan

GB/T 2918-1998 Standard environment for conditioning and testing of plastic specimens

GB/T 3682-2018 (all parts) Plastic thermoplastic melt mass flow rate (MFR) and melt volume flow rate Rate (MVR) determination

GB/T 6111-2018 Determination of internal pressure resistance of thermoplastic piping systems for fluid transport

GB/T 6671-2001 Determination of longitudinal shrinkage of thermoplastic pipes Plastics -- Determination of tensile properties of thermoplastic pipes - Part 3. Polyolefin pipes

GB/T 8806-2008 Determination of dimensions of plastic parts for plastics piping systems

GB/T 9341-2008 Determination of bending properties of plastics

GB/T 9345.1-2008 Determination of ash - Part 1. General method

GB/T 9647-2015 Determination of the stiffness of thermoplastic pipe rings

GB/T 14152-2001 Test method for resistance to external impact of thermoplastic pipes -

GB/T 18042-2000 Test method for creep ratio of thermoplastic pipes

GB/T 19278-2018 General terms and definitions for thermoplastic pipes, fittings and valves

GB/T 19466.6-2009 Plastic Differential Scanning Calorimetry (DSC) Part 6. Oxidation induction time (isothermal OIT) and oxygen Determination of induced temperature (dynamic OIT)

3.1 Terms and definitions The following terms and definitions as defined in

GB/T 19278-2018 apply to this document.

3.1.1 Winding structural wall pipe spiralyenwoundstructured-walpipes Structural wall tubing made by a winding process.

Note. The wall structure made by different winding processes is different. For example. A-type structural wall tube (shown in Figure 2), B-type structural wall tube (shown in Figure 3) is usually preheated The monolithic core mold is wound and the inner wall is smooth.

3.1.2 Fitting fitting Articles made by secondary processing of thermoformed parts and/or several pipe sections (which can be used with solid walled tubes).

3.1.3 Nominal size DN/ID nominalsizeDN/ID DN/ID The nominal size associated with the inner diameter.

3.1.4 Any point outside diameter outsidediameter(atany point) De The outer diameter

measured by the cross section of any point of the pipe.

Note. For structural wall tubing, the outer contour of the cross section may not be circular (eg spiral wound tubes) or circular of equivalent size (eg double wall corrugations) Tube or structural wall tube with ring ribs), where the outer diameter of the tube is theoretically defined as the smallest cylindrical surface that can accommodate the tube body (excluding the socket) path. For ease of use, it can also be technically defined as the sum of the inner diameter and the double structural height.

3.1.5 Any point inside diameter insidediameter (at any point) D_i The distance between the line passing the center of the circle and the two intersections of the inner surface of the section in the cross section perpendicular to the axial direction of the pipe member.

3.1.6 Mean inner diameter $\bar{D}_i$ The arithmetic mean of two or more inner diameter measurements that are perpendicular to each other on the same section.

3.1.7 Any point wall thickness t (at any point) The distance between the inner and outer walls at any point on the pipe or fitting.

Note. For multi-layer tubes or structural wall tubes, the wall thickness of each layer or different parts may have different design values, and the qualifiers may be added to clarify the position of the measurement. Such as the overall wall thickness, inner wall thickness, outer wall thickness, core wall thickness, reinforcement layer wall thickness and so on.

3.1.8 Structure height E_c The radial distance between the inner and outer surfaces of the pipe wall (A-shaped structural wall pipe), or between the inner surface of the pipe wall and the top end of the rib (B-shaped structural wall pipe).

3.1.9 Inner wall thickness E

4 The wall of the B-shaped pipe has a wall thickness at any point between the ring ribs.

3.1.10 Wall thickness under the inner wall thickness E_u

5 The wall thickness between the inner wall and the inner surface below the cavity portion of the A-type pipe.

3.1.11 Nominal ring stiffness S_N The nominal value of the ring stiffness, usually a convenient round integer, represents the minimum specified value of the ring stiffness. [

GB/T 19278-2018, definition 2.4.3]

3.2 symbol The following symbols apply to this document. A joint length, or the maximum draw length in the sealed state D_i socket diameter $\bar{D}_{i,min}$ minimum average inner diameter of the socket D_e OD $\bar{D}_{e,min}$ average outer diameter D_i inner diameter $\bar{D}_{i,min}$ average inner diameter e pipe wall thickness (excluding structural height) E_c structure height E_1 socket wall thickness E_2 wall thickness E_3 wall thickness at the seal ring groove E_4 inner