

ISO 23856

Title: Plastics piping systems for pressure and non-pressure water supply, drainage or sewerage — Glass reinforced thermosetting plastics (GRP) systems based on unsaturated polyester (UP) resin

Scope: This document specifies the properties of piping system components made from glass-reinforced thermosetting plastics (GRP) based on unsaturated polyester resin (UP). It is suited for all types of water supply, drainage and sewerage with or without pressure. Types of water supply include, but are not limited to, raw water, irrigation, cooling water, potable water, salt water, sea water, penstocks in power plants, processing plants and other water-based applications. This document is applicable to GRP UP piping systems, with flexible or rigid joints with or without end thrust load-bearing capability, primarily intended for use in direct buried installations.

NOTE 1 For the purpose of this document, the term polyester resin (UP) also includes vinyl-ester resins (VE).

NOTE 2 Piping systems conforming to this document can also be used for non-buried applications, provided the influence of the environment and the supports are considered in the design of the pipes, fittings and joints.

NOTE 3 This document can also apply for other installations, such as slip-lining rehabilitation of existing pipes.

NOTE 4 ISO 10467 and ISO 10639, which are replaced by this document, are also referenced in ISO 25780, which specifies requirements for GRP-pipes used for jacking installation. The requirements for the hydrostatic pressure design of pipes referring to this document meet the requirements of ISO/TS 20656-1 and the general principle for the reliability of structures detailed in ISO 2394 and in EN 1990. These International Standards provide procedures for the harmonization of design practices and address the probability of failure, as well as possible consequences of failures. The design practices are based on a partial safety factor concept, as well as on risk management engineering. This document is applicable to circular pipes, fittings

and their joints of nominal sizes from DN 50 to DN 4000, which are intended to be used for the conveyance of water, sewage and drainage at normal service conditions, with or without pressure.

ISO/TS 20656-1:2017

Title: Plastics piping systems — General rules for structural design of glass-reinforced thermosetting plastics (GRP) pipes — Part 1: Buried pipes

Scope: This document describes how partial factors for buried GRP pipes are developed, and are primarily intended to define the necessary safety measures for GRP pipes that meet the requirements of ISO 10639, ISO 10467 and ISO 25780, and EN 1796 and EN 14364. The same methodology can be utilised for other pipe product standards, although other parameters would apply