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Plastics piping systems — Glass-reinforced thermosetting plastics (GRP) pipes — Test method to prove the resistance to initial ring deflection

Systèmes de canalisations en plastiques — Tubes en plastiques thermodurcissables renforcés de verre (PRV) — Méthode d'essai pour établir la résistance à la déflexion annulaire initiale

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies) The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval of at least 75% of the member bodies casting a vote.

International Standard ISO 10466 was prepared by Technical Committee ISO/TC 138, *Plastics pipes, fittings and valves for the transport of fluids,* Subcommittee SC 6, *Reinforced plastics pipes and fittings for all applications,* in collaboration with CEN/TC 155, *Plastics piping systems and ducting systems.*

This International Standard is one of a series of standards on test methods for plastics piping systems and ducting systems

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Plastics piping systems — Glass-reinforced thermosetting plastics (GRP) pipes — Test method to prove the resistance to initial ring deflection

1 Scope

This International Standard specifies a method for testing the ability of glass-reinforced thermosetting plastics (GRP) pipes to withstand specified levels of initial ring deflection without displaying surface damage and/or structural failure.

2 Definitions

For the purposes of this International Standard, the following definitions apply:

2.1 vertical deflection (y)**:** The vertical change in diameter of a pipe in a horizontal position in response to a vertical compressive load (see 7.3).

It is expressed in metres.

2.2 relative vertical deflection (y/d_m)**:** The ratio of the vertical deflection y (see 2.1) to the mean diameter of the pipe d_m (see 2.3).

2.3 mean diameter (d_m)**:** The diameter of the circle corresponding with the middle of the pipe wall cross section.

It is given, in metres, by either of the following equations:

$$d_m = d_i + e$$

$$d_m = d_e - e$$

where:

d_i is the average of the measured internal diameters (see 5.3.2), in metres;

d_e is the average of the measured external diameters (see 5.3.2), in metres;

e is the average of the measured wall thicknesses of the pipe (see 5.3.1), in metres.

2.4 visual evidence of structural failure: Unless otherwise specified by the referring standard, a failure apparent in any of the following forms (see 7.3):

- interlaminar separation;
- tensile failure of the glass fibre reinforcement;
- buckling of the pipe wall;
- if applicable, separation of the thermoplastic liner from the structural wall.