
**Plastics piping systems — Glass-reinforced
thermosetting plastics (GRP) pipes —
Determination of the apparent initial
circumferential tensile strength**

*Systèmes de canalisations en matières plastiques — Tubes en plastiques
thermodurcissables renforcés de verre (PRV) — Détermination de la
résistance en traction circonférencielle initiale apparente*



Foreword

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This standard is one of a series of standards on test methods which support standards for plastics piping systems and ducting systems.

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Plastics piping systems — Glass-reinforced thermosetting plastics (GRP) pipes — Determination of the apparent initial circumferential tensile strength

1 Scope

This standard specifies six test methods for the determination of the apparent initial tensile strength in the circumferential direction per unit length of glass-reinforced thermosetting plastics (GRP) pipes.

The burst test (method A) is suitable for all types and sizes of pipes. It is the reference method.

The split disc test (method B) may not be suitable for pipes with helically wound reinforcing layers.

The strip test (method C) and the modified strip test (method D) are suitable for pipes with a nominal size of DN 500 and greater.

The restrained strip test (method E) is suitable for all types of pipes with a nominal size greater than DN 500.

The notched plate test (method F) is primarily intended for use for helically wound pipes of nominal size greater than DN 500 with a winding angle other than approximately 90°.

Results from one method are not necessarily equal to the results derived from any of the alternative methods.

2 Definitions

σ_{cA}^* , σ_{cB}^* , σ_{cC}^* , σ_{cD}^* , σ_{cE}^* , σ_{cF}^*): Ultimate circumferential tensile force per unit length in the circumferential direction (the upper-case subscripts denote the method of test used).

It is expressed in newtons per millimetre of circumference.

2.2 burst pressure (p_{ult}): The internal pressure at bursting.

It is expressed in bars¹⁾ (or megapascals).

2.3 bursting: Failure by rupture of the pipe wall.

2.4 ultimate tensile force (F_{ult}): The tensile force at failure.

It is expressed in newtons.

2.5 width (b): The width of the test piece in the notched area.

It is expressed in millimetres.

¹⁾ 1 bar = 10⁵ N/m² = 0,1 MPa

For the purposes of this standard, the following definitions apply:

2.1 apparent initial circumferential strength (