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**JIS K 7037** : 1998

(ISO/FDIS 8521 : 1997)

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

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ICS 23.040.20

**Descriptors** : thermosetting polymers, plastics, reinforcing materials, glass, pipework systems, pipes, tensile strength

**Reference number** : JIS K 7037 : 1998 (E)

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## **Foreword**

This translation has been made based on the original Japanese Industrial Standard established by the Minister of International Trade and Industry through deliberations at Japanese Industrial Standards Committee in accordance with the Industrial Standardization Law:

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

**Introduction** This Japanese Industrial Standard has been prepared based on ISO/FDIS 8521 issued in 1997, "*Plastics piping systems—Glass-reinforced thermosetting plastics (GRP) pipes—Determination of the apparent initial circumferential tensile strength,*" without changing the technical contents.

In addition, items with dotted underline in this Standard are items which are not contained in the original International Standard.

**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. And, it is suitable, when the split disc test is not suitable.

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

**2.1 apparent initial circumferential strength** ( $\sigma_{cA}^*$ ,  $\sigma_{cB}^*$ ,  $\sigma_{cC}^*$ ,  $\sigma_{cD}^*$ ,  $\sigma_{cE}^*$ ,  $\sigma_{cF}^*$ ): 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. (MPa)

**2.3 bursting** Failure by rupture of the pipe wall.

**2.4 ultimate tensile force** ( $F_{ult}$ ) The tensile force at failure. (N)

**2.5 width** ( $b$ ) The width of the test piece in the notched area. (mm)