JIS

JAPANESE
INDUSTRIAL
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JIS K 7020 : 1998

(ISO 10928 : 1997)

Glass-reinforced thermosetting plastics (GRP) pipes and fittings— Methods for regression analysis and their use

K 7020 : 1998 (ISO 10928 : 1997)

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 the Japanese Industrial Standards Committee in accordance with the Industrial Standardization Law:

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Divisional Council on Chemical

In the event of any doubts arising as to the contents, the original JIS is to be the final authority.

Glass-reinforced thermosetting plastics (GRP) pipes and fittings—Methods for regression analysis and their use

Introduction This Japanese Industrial Standard has been prepared based on the first edition issued in 1997 of **ISO 10928**, *Plastics piping systems — Glass-reinforced thermosetting plastics (GRP) pipes and fittings — Methods for regression analysis and their use* without changing the contents.

This Standard has been prepared to describe the procedures intended for analysing the regression of test data, usually with respect to time, and the use of the results in design and assessment of conformity with performance requirements. Its applicability has been limited to use with data obtained from tests carried out on samples. The referring standards require estimates to be made of the long-term properties of the pipe for such parameters as circumferential tensile strength, deflection and creep.

The committee investigated a range of statistical techniques that could be used to analyse the test data produced by tests that were destructive. Many of these simple techniques required the logarithms of the data to

 a) be normally distributed;

 b) produce a regression line having a negative slope; and

 c) have a sufficiently high regression correlation (see Table 1).

Whilst the last two conditions can be satisfied, analysis has shown that there is a skew to the distribution and hence this primary condition is not satisfied. Further investigation into techniques that can handle skewed distributions resulted in the adoption of the covariance method for analysis of such data for this Standard.

The results from non-destructive tests, such as creep or changes in deflection with time, often satisfy these three conditions and hence simpler procedures, using time as the independent variable, can also be used in accordance with this Standard.

1　Scope

This Standard specifies procedures suitable for the analysis of data which, when converted into logarithms of the values, have either a normal or a skewed distribution. It is intended for use with the test methods and