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Compressed fiber jointing

ICS 73.080

Descriptors : sheet materials, joints, gaskets, pipework systems

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Foreword

This translation has been made based on the original Japanese Industrial Standard established by the Minister of Economy, Trade and Industry through deliberations at the Japanese Industrial Standards Committee. Consequently, **JIS R 3453:1995** is replaced with this Standard.

In this revision, the contents of standard is revised to the specifications which centre around performance.

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Compressed fiber jointing

1 Scope This Japanese Industrial Standard specifies compressed fiber jointing. The compressed fiber jointing is used as the gasket for pipes or machineries to convey water, oil, air, steam and the like. It is made in the form of a sheet by mixing fiber, rubber, vulcanizing agent and various fillers and by heat-compressing densely and uniformly.

2 Normative references The following standards contain provisions which, through reference in this Standard, constitute provisions of this Standard. The most recent editions (including the amendments) of the standards indicated below shall be applied.

JIS B 0601 *Surface roughness — Definitions and designation*

JIS B 7502 *Micrometer callipers*

JIS B 7503 *Dial gauges*

JIS K 6251 *Tensile testing methods for vulcanized rubber*

JIS K 6258 *Testing methods of the effect of liquids for vulcanized rubber*

3 Classification The compressed fiber jointing shall be classified into two types by service temperature and working pressure as shown in table 1.

Table 1 Classification

Type	Service temperature °C	Working pressure ⁽¹⁾ MPa		
		Case of air	Case of steam	Case of water and oil
Type A	120 max.	0.50 max.	0.20 max.	1.00 max.
Type B	220 max.	1.00 max.	1.60 max.	1.60 max.

Note ⁽¹⁾ Working pressure indicates gauge pressure.

Remarks : The values in the table are the rough standard when the tightening condition of gasket specified by manufactures is met, and they are not to assure every case.

4 Quality The compressed fiber jointing shall be free from crack, fissure, unevenness, etc. detrimental to use, and shall comply with the specifications in table 2 when tested according to clause 6.

Table 2 Quality

Characteristics			Classification	
			Type A	Type B
Tensile strength		MPa	9.8 min.	15.7 min.
Compressibility ratio		%	5 to 19	7 to 17
Recovery ratio		%	35 min.	45 min.
Oil resistance	Thickness increase ratio	%	30 max.	30 max.
	Tensile strength decrease ratio	%	40 max.	40 max.
Flexibility			Not broken	Not broken
Steaming test	Tensile strength decrease ratio (vapour pressure 1.57 MPa)	%	50 max.	—
	Tensile strength decrease ratio (vapour pressure 4.90 MPa)	%	—	50 max.
Stress relaxation ratio		%	50 max.	40 max.
Ignition loss		%	—	28 max.

5 Dimensions The dimensions of compressed fiber jointing shall be expressed by thickness, width ⁽²⁾ and length ⁽³⁾.

Notes ⁽²⁾ The width means the length of right-angled direction to fiber.

⁽³⁾ The length means the length of parallel direction to fiber.

6 Test

6.1 General condition of test

6.1.1 Sample The sample shall be cut off to have a width of 150 mm from the end of compressed fiber jointing with $1.5 \text{ mm} \pm 0.1 \text{ mm}$ thickness.

6.1.2 Standard condition of sample The sample in standard condition shall be made by putting in Geer type aging tester maintained at $100^\circ\text{C} \pm 2^\circ\text{C}$ or a thermostat equivalent to this, holding for 60 min, then taking out and cooling in a desiccator to room temperature as it is. All the test shall be carried out on the samples in standard condition.

Moreover, the standard condition of test place shall be $25^\circ\text{C} \pm 5^\circ\text{C}$ in test temperature and the test humidity shall be recorded for reference.

6.1.3 Rounding method of test results The rounding method of numerical values according to test results shall be in accordance with table 3.