

JIS

JAPANESE INDUSTRIAL STANDARD

Manila and sisal fibre ropes

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Manila and sisal fibre ropes

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1. Scope

This Japanese Industrial Standard specifies the Manila and sisal fibre ropes (hereafter referred to as the "ropes"), to be used mainly for shipping, fisheries, loading, railways and mining, and for general land use.

Remarks 1. The applicable standards to this Standard are as follows:

JIS K 1425-Bleaching Powder and High Test Hypochlorite

JIS K 8085-Ammonia Water

JIS K 8102-Ethanol (95) (Ethyl Alcohol (95))

JIS K 8593-Petroleum Ether

2. The units and numerical values given in { } in this Standard are in accordance with the customary unit system, and are appended for informative reference.

2. Classification

The ropes are classified as given in Table 1 by purpose and quality.

Table 1. Classification

Classification		Purpose
Group 1	No. 1 Manila rope	For shipping use
	No. 2 Manila rope	
	Sisal rope	
Group 2	No. 1 Manila rope	For fisheries and others
	No. 2 Manila rope	
	Sisal rope	

3. Quality

3.1 Linear density and mass The linear density and mass of the ropes shall be as specified in Attached Tables 1-1, 1-2 and 2, and the tolerances thereon shall be $\pm 5\%$.

3.2 Length The length of a line of the rope shall measure 200 m, unless otherwise specified, but it shall be altered otherwise, if so specified. The tolerance on length is not permitted on the minus side.

Every line of Group 1 ropes and, when designated specifically, of Group 2 ropes shall have the marginal length needed for the tensile test (breaking test).

3.3 Tensile strength The ropes shall prove that they have the tensile strength (breaking load) given in Attached Tables 1-1, 1-2 or 2, when subjected to the tensile test.

4. Materials and manufacture

4.1 Materials The ropes shall be made of Manila fibre (*Musa textilis*) or sisal fibre (*Agave sisalance*), which shall not contain any similar fibre, blending it well to obtain a homogeneous nature through their whole length.

4.2 Oily and fatty content The oily and fatty matter used for the manufacture of the ropes shall be within 7 to 15 % to the mass of the finished ropes.

4.3 Plaiting The plaiting of the ropes shall be as specified below.

- (1) The ropes shall be three-strand plaited, unless otherwise specified. The yarns constituting a strand shall count over the number specified in Attached Tables 1-1 or 1-2.
- (2) The yarns constituting a strand of four-strand plaited ropes shall count over the number specified in Attached Table 2.
- (3) The ropes shall be twisted in the direction of Z twist (left twist), unless otherwise specified.
- (4) The lead⁽¹⁾ of the strands contained in the ropes shall be as specified below:
 - (a) Under 3.4 times incl. the nominal thickness, for the ropes of 12 mm or less in nominal thickness⁽²⁾, and
 - (b) Over 3.2 times incl. the nominal thickness, for the ropes exceeding 12 mm in nominal thickness.

Notes (1) The lead herein stated is defined as a pitch of one time twist of the strand.

(2) The nominal thickness herein stated denotes the diameter of the ropes. However, the sizes of diameter itself are unspecified in this standard.

5. Test methods

5.1 Condition of testing room The condition of testing room and the tolerances thereon shall be $20 \pm 2^\circ\text{C}$ in temperature and $65 \pm 2\%$ in humidity. If a testing room cannot keep such a condition, the temperature and humidity under which the tests are carried out shall be noted in the test report.

5.2 Preparation of test specimen Cut off a test specimen of the length suitable to the test specified in 5.7 from one end of every line of the ropes, leave it still in a testing room specified in 5.1, measure the mass at an interval of 1 h or longer, and, if the difference in mass between a weighing and the succeeding weighing comes within 0.3 % of the succeeding mass, take the mass as the mass (m) (kg) of the specimen, and then furnish the specimen thus obtained to the tests.

5.3 Mass Measure the mass of every line in the testing room specified in 5.1.

5.4 Length After measuring the mass by the method specified in 5.3, stretch both ends of the test specimen by both hands, put it on a flat table, and then measure its length (l_1). Put two marks at the interval of 30 cm or 50 cm in the middle part of the test specimen, and then measure the distance (d_1) of the marks.

Attach this test specimen to a constant rate of traverse type tensile tester, increase the load gradually, and, when the load reaches the initial load given in Attached Tables 1-1, 1-2 or 2, stop the loading, and measure the distance (d_2) of the two marks put previously in the middle part of the specimen.

Calculate the length (l) of the sample by the following formula:

$$l = l_1 \times \frac{d_2}{d_1}$$

where, l : length of test sample (m)

l_1 : length of test sample before initial load is applied (m)