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JIS

JAPANESE INDUSTRIAL STANDARD

Polypropylene ropes

JIS L 2706–1992

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Polypropylene ropes L 2706-1992

1. Scope

This Japanese Industrial Standard specifies the polypropylene ropes manufactured from polypropylene multifilament yarns, polypropylene monofilament yarns and polypropylene spun yarns (hereafter referred to as the "ropes").

Remarks 1. The corresponding international standard to this Standard is as follows:

ISO 1346 Three-strand (hawser-laid) and eight-strand (plaited) polypropylene monofilament or film ropes—Required characteristics

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 into the following three categories:

(1) Polypropylene multifilament rope

(2) Polypropylene monofilament rope

(3) Polypropylene spun yarn rope

3. Quality requirements

3.1 Appearance The ropes shall be finished well without any remarkable stain and friction mark.

3.2 Linear density and mass The linear density and the mass of the ropes shall be as specified in Attached Tables 1 to 3. The tolerances thereon shall be ± 5 % for 3-strand ropes and ± 7 % for 8-strand ropes.

The increase of linear density and mass due to dyeing process or resin finishing shall be within 15 % of the linear density and the mass specified in Attached Tables 1 to 3.

3.3 Length A line of the ropes shall have 200 m length, unless otherwise specified. When otherwise specified, it shall have the specified length. The tolerance on minus side is not admitted.

Only when particularly specified, a margin length necessary to the tensile strength test (breaking test) shall be added.

3.4 Tensile strength The ropes shall prove that they have the tensile strength over the value given in Attached Tables 1 to 3, when subjected to the test specified in 6.7.

3.5 Elongation percentage The ropes shall show the elongation percentage less than 45 % incl. for polypropylene multifilament ropes, less than 40 % incl. for polypropylene monofilament ropes and less than 50 % incl. for polypropylene spun yarn ropes, when the elongation percentage is calculated by the formula given in 6.8.

4. Materials and manufacture

4.1 Materials The raw yarns used shall be only polypropylene multifilament yarns, polypropylene monofilament yarns or pure polypropylene spun yarns suitable to rope use.

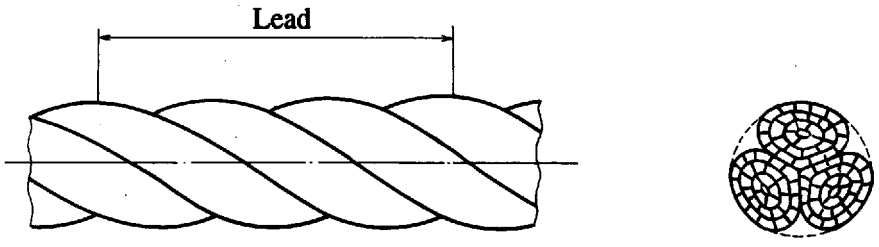
The remade material shall not be used.

4.2 Manufacture The ropes may be subjected to dyeing process or resin finishing, when particularly designated.

4.3 Plaiting The plaiting shall be made as follows:

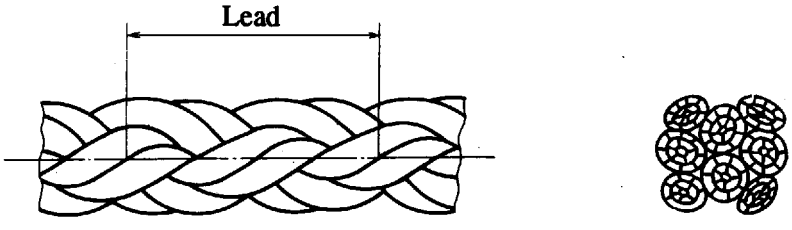
(1) The ropes shall be made to a form of three strands or of eight strands, and the former form shown in Fig. 1 shall be adopted, unless otherwise specified.

Fig. 1. Structure of three-strand rope



(2) The 8-strand ropes shall consist of each two pairs of doubled four Z-twist strands and of doubled four S-twist strands, and the above two pairs shall be braided together as shown in Fig. 2.

Fig. 2. Structure of eight-strand rope



(3) The number of yarns constituting each strand of the ropes shall be the same with each other.

(4) The 3-strand ropes shall have Z-twist, unless otherwise specified.

(5) A lead([1]) of strands in the ropes shall be 3.3 times the rope nominal thickness([2]) or smaller for 3-strand ropes and 3.5 times or smaller for 8-strand ropes.

Notes ([1]) The lead is defined as a far-off of a strand generated by one time twisting.

([2]) The rope nominal thickness means the rope diameter, but the rope diameter itself is unspecified.

Remarks: Plaiting herein stated implies twisting or braiding the strands.

5. Initial load

The initial load is defined as a load enough to stretch a rope without allowing it to elongate. For the test in which the result is liable to be affected by loading (for example, the tests on length, lead and elongation percentage), the value given in Attached Tables 1 to 3 shall be applied as the initial load. The tolerance on initial load shall be ± 5 %.