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**Textiles - Test Method for Fatigue Resistance on
Visual Change of Elastic Straps**

纺织品 弹性织带耐疲劳外观变化试验方法

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Textiles - Test Method for Fatigue Resistance on Visual Change of Elastic Straps

1 Scope

This Standard stipulates test method for fatigue resistance on visual change of elastic straps after repeated stretching.

This Standard is applicable to various kinds of elastic straps.

2 Normative References

The following documents are indispensable to the application of this document. In terms of references with a specified date, only versions with a specified date are applicable to this document. In terms of references without a specified date, the latest version (including all the modifications) is applicable to this document.

GB/T 6529 *Textiles - Standard Atmospheres for Conditioning and Testing*

3 Principle

Under stipulated conditions, stretch elastic straps for multiple times; evaluate their visual change before and after the stretching, which may be used to represent the fatigue resistance performance of the elastic straps.

4 Instruments

Fatigue resistance tensile tester, which shall comply with the following requirements (please refer to Figure 1 for its sketch map):

- Sample set rod: round metal rod with the diameter of (16 ± 0.1) mm. 2 sample set rods shall be 1 pair: 1 rod shall be installed on the gauge adjustment table; 1 rod shall be installed on the reciprocating mobile table;
- Gauge adjustment table: it shall be installed on the guide rod. Gauge adjustment table can be moved by adjusting the adjustment lever between 2 guide rods. It can adjust sample's initial tensile gauge. The minimum gauge shall be 100 mm, accurate to 1 mm;
- Reciprocating mobile table: it shall be installed on the guide rod and driven by a driving device. The speed of reciprocating motion shall be able to satisfy (20 ± 0.5) times/min. The maximum reciprocating stroke shall be at least 60 mm;

6.2 At a distance of at least 100 mm from both ends of the sample, at a certain interval, clip at least 3 strip samples with the length of (300 ± 2) mm and the width of the breadth of the strap. The samples shall be representative. There shall be no defects that might affect the test result, such as wrinkling and damage, etc.

6.3 Oppositely overlap both ends of the strip samples; sew into an annular sample, whose perimeter is (250 ± 2) mm.

NOTE 1: tests may also be conducted in accordance with other appointed dimensions; this content shall be indicated in the test report.

NOTE 2: seam joints shall be firm; stitches shall be parallel and level, so as to prevent from disconnection or uneven tensile force during the tensile test.

7 Test Procedures

7.1 In accordance with Figure 1, install the annular sample on the sample set rod. Adjust the gauge adjustment table, so that the annular sample on the set rod can maintain a natural straightened state. Set up the speed of the reciprocating mobile table to be 20 times/min; set up the stroke to be 60 mm.

NOTE: tests may also be conducted in accordance with other parameters appointed by both parties; this content shall be indicated in the test report.

7.2 Initiate the fatigue resistance tensile tester, then, start the test. In accordance with the following two modes, observe the visual change of the annular sample:

a) In terms of test with stipulated fatigue stretching times, firstly, set up the stipulated stretching times, then, start the test. Take 20% of the stipulated stretching times as the interval of inspection; inspect and record the visual change of the annular sample after reaching the stipulated stretching times. Generally speaking, visual change has the following circumstances:

---Partial existence of bending deflection;

---Exposure of yarn;

---Breakage of yarn.

NOTE: if the stipulated stretching times is less than 1,000 times, directly inspect and record the visual change of the annular sample after reaching the stipulated stretching times.

b) In terms of test which needs to determine the limit of fatigue stretching times, in accordance with the inspection interval stipulated in Table 1, observe the visual change of the sample. When it is found that the annular sample manifests fiber breakage or exposed yarn, stop the test and record the times.

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