

भारतीय मानक मसौदा

विस्कोस कट स्टेपल रेशों की ग्रेडिंग का निर्धारण (सामान्य)

(आई एस 5874 का पहला पुनरीक्षण)

BUREAU OF INDIAN STANDARDS

Draft Indian Standard

**SPECIFICATION FOR GRADING OF VISCOSE RAYON CUT
STAPLE FIBRES (REGULAR)**

(First Revision of IS 5874)

ICS 59.060.20

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Last date for receipt of comment is
22 March 2023

Man-made Fibres, Cotton and their Products Sectional Committee, TXD 31

FOREWORD

(Formal clauses will be added later)

With the increase in the use of viscose rayon cut staple fibres in the different sectors of the textile industry, the demand for appropriate grade of fibre has arisen. This standard has, therefore, been prepared with the intention of clearly defining the various grades of viscose rayon cut staple fibres. It is hoped that this standard would enable the buyer to select the correct grade of fibre to suit his end requirement.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1 SCOPE

This standard prescribes a method for grading of viscose rayon cut staple fibres (regular).

2 REFERENCES

The standards listed in Annex A contain provisions which through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subjected to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated in Annex A.

3 REQUIREMENTS — CHARACTERISTICS TO BE TESTED

3.1 The material shall be tested in respect of the following characteristics:

- a) Fibre length,
- b) Denier and
- c) Dry strength.

3.1.1 The fibre shall be identified by the method prescribed in IS 667.

4 SAMPLING

Representative material for testing the requirements shall be sampled according to **3** of IS 4807.

5 ATMOSPHERIC CONDITIONS FOR TESTING

All the tests shall be carried out in a standard atmosphere of 65 ± 2 percent relative humidity and $27 \pm 2^\circ\text{C}$ (*see also* IS 196). When the fibres have been left in such an atmosphere for at least 4 hours in such a way as to expose as far as possible all portions of the fibres to the atmosphere, they shall be deemed to have reached moisture equilibrium.

6 CONDITIONING OF TEST SAMPLE

6.1 Prior to test, the fibres shall be conditioned to moisture equilibrium in a standard atmosphere of $27 \pm 2^\circ\text{C}$ temperature and 65 ± 2 percent RH.

6.2 When the fibres have been left in such an atmosphere for at least 24 hours in such a way as to expose as far as possible all portions of the fibres to the atmosphere, they shall be deemed to have reached moisture equilibrium.

7 TEST METHODS

7.1 Fibre Length — Fibre length characteristics, such as mean length and effective length, shall be evaluated according to **6.2** of IS 4807.

7.1.1 Evaluation of Proportion of Overlong Fibres — From the effective length obtained as in **6.1**, add 3 mm if the declared staple length of the consignment is below 50 mm and 10 mm if the declared staple length of the consignment is above 50 mm to the effective length. Collect such fibres (from the oiled glass sheet) which are longer than the sum total of this Length and weigh them. From this weight, calculate the percentage of overlong fibres in the consignment. Repeat the test once again and take the average of the two values as the percentage of overlong fibres.

7.1.2 Fibre Length Deviation — Calculate the fibre length deviation by the following formula:

$$F = \frac{100(A-B)}{B}$$

Where,

F = fibre length deviation,

A = effective length, and

B = declared staple length of the consignment.

7.2 Denier — Calculate the denier of the fibres by following the method given in **6.3** of IS 4807.

7.2.1 Deviation in Denier — Calculate the percentage deviation in denier by the following formula:

$$D = \frac{100(A-B)}{B}$$

where

D = deviation in denier,

A = denier of conditioned fibre, and

B = declared denier of the consignment.

7.3 Strength — The dry strength of the fibres shall be determined according to **6.4** of IS 4807.

8 GRADING

The material shall be graded into any one of the three grades depending upon the number of points obtained. For grading the material into Grade 1, the material shall receive more than 400 points. For grading the material into Grade 2, the material shall receive points from 300 to 400. For grading the material into Grade 3, the material shall receive points less than 300.

9 METHOD FOR AWARDING POINTS

The material shall be awarded points for the individual characteristics based on the details given in Table 1.

Table 1 Method of Awarding Points

(Clause 9)

Characteristic	Points	Points	Points	Points
A.	<i>When the Declared Denier is Below 2:</i>			
Extra-long fibre, percent	150 if 6.0 m below	120 if between 8.0 and 6.0	90 if between 12.0 and 8.0	60 if beyond 12
Fibre length (effective) deviation, percent	150 if ± 6.0 and below	120 if between ± 8.0 and ± 6.0	90 if between ± 10.0 and ± 8.0	60 if beyond ± 10.0
Denier deviation, percent	100 if up to and including ± 10.0	80 if between ± 12.0 and ± 10.0	60 if between ± 14.0 and ± 12.0	40 if beyond ± 14.0

Dry strength on single fibre tester (g/d)	100 if above 2.3	80 if between 2.15 and 2.3 (including)	80 if between 1.9 and 2.15 (including)	40 if below 1.9
B	<i>When the Declared Denier is Above 2:</i>			
Extra-long fibre, percent	150 if 6.0 m below	120 if between 8.0 and 6.0	90 if between 12.0 and 8.0	60 if beyond 12
Fibre length (effective) deviation, percent	150 if ± 6.0 and below	120 if between ± 8.0 and ± 6.0	90 if between ± 10.0 and ± 8.0	60 if beyond ± 10.0
Denier deviation, percent	100 if up to and including ± 10.0	80 if between ± 12.0 and ± 10.0	60 if between ± 14.0 and ± 12.0	40 if beyond ± 14.0
Dry strength on single fibre tester (g/d)	100 if above 2.0	80 if between 1.8 and 2.0 (including)	80 if between 1.6 and 1.8 (including)	40 if below 1.6

10 BASIS FOR ALLOCATION OF POINTS

Fibre length being the most important characteristic among all the characteristics from the point of view of spinning, it has been allotted the maximum number of points. Other characteristics have been allotted points in the order of their importance.

ANNEX A (Clause 2)

LIST OF REFERRED INDIAN STANDARDS

<i>IS NO.</i>	<i>Title</i>
196 : 1966	Atmospheric conditions for testing (<i>Revised</i>)
667 : 1981	Methods for identification of textile fibres (<i>first revision</i>)

4807 : 1968 Methods of testing viscose rayon staple fibres