Designation: D 2255 – 02

Standard Test Method for Grading Spun Yarns for Appearance[1]

This standard is issued under the fixed designation D 2255; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

INTRODUCTION

Cotton yarn appearance standards were first adopted in 1938 and revised in 1964, with Series III being revised again in 1975. The 1964 boards had different yarn sizes for the four-grade exhibits on each board. The 1975 Series III board used the same yarn number for each grade.

The appearance grade of yarn is based on the composite evaluation of several factors, such as unevenness, fuzziness, and neppiness. The differences in the yarn numbers in the 1964 standards along with the differences in other factors distort the comparison between grades and makes grading more difficult.

To overcome this shortcoming, in 1975 the Series III board was revised using the same size yarn for all four grades. After evaluating the improvements, it was decided to revise all of the series using a mid-range yarn number for each grade in the series, and narrow the range in the most active series. This was accomplished by adding a new board, Series VI. A near mid-range yarn number was selected to represent equal steps between adjacent grades for all the factors considered in yarn appearance grading. These yarns were produced with current commercial manufacturing equipment and practices.

Finally, to obtain better yarn definition and better reproducibility from set to set, it was decided to use offset photo printing.

Shortly after these new boards were published in 1979, it became apparent that in the Series II-79 Board the A and B grades were not clearly defined and appeared to be switched. This was corrected in the 1987 Series II Board.

In 1987 a world wide survey was conducted on how the Yarn Appearance Boards were being used. From responses it became apparent that the boards are being used for grading yarns other than 100 % cotton combed or carded yarns. Respondents were using the boards to grade yarn blends, ring spun yarns, open-end spun yarns and other spinning systems. The boards are used both for process quality control and customer acceptance.

In view of the above findings, it was decided to revise the method to include grading of all single spun yarns.

1. Scope

1.1 This test method covers the grading of singles spun yarns for appearance.

1.2 This test method does not apply to plied yarns.

1.3 The values stated in either inch-pound or SI units are to be regarded separately as the standard. The values stated in each system are not exact equivalents, therefore, each system must be used independently of the other.

1.4 *This standard does not purport to address the safety concerns associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.* [2]

2. Referenced Documents

2.1 *ASTM Standards:*

D 123 Terminology Relating to Textiles[3]
D 2258 Practice for Sampling Yarn for Testing[3]
D 3888 Terminology Related to Open-End Spinning[4]
D 3990 Terminology Relating to Fabric Defects[4]
D 4849 Terminology Relating to Fibers and Yarns[4]

[1] This test method is under the jurisdiction of ASTM Committee D13 on Textiles and is the direct responsibility of Subcommittee D13.58 on Yarn Test Methods, General.

Current edition approved September 10, 2002. Published November 2002. Originally published as D 2255 – 64. Last previous edition D 2255 – 96.

[2] The requirements for the appearance of cotton yarns are covered in Tolerances D2645, Roller-Drafted Yarns.

[3] *Annual Book of ASTM Standards*, Vol 07.01.

[4] *Annual Book of ASTM Standards*, Vol 07.02.

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