Indian Standard

METHOD FOR DETERMINATION OF BUNDLE STRENGTH (TENACITY) OF COTTON FIBRES

0. FOREWORD

0.1 This Indian Standard was adopted by the Indian Standards Institution on 20 July 1966, after the draft finalized by the Textile Standards Sectional Committee had been approved by the Textile Division Council.

0.2 Strength of cotton fibre contributes substantially to the quality of cotton. The method of estimating the tenacity of cotton by testing individual fibres is tedious and time consuming. For both commercial and technical purposes, quicker methods have been developed which test the fibres in the form of bundles. This standard covers some such methods.

0.3 The bundles of fibres may be secured by clamps which are either in close contact (zero gauge length) or by clamps separated to give a finite gauge length. Fibre strength testing at zero gauge length is a current commercial practice, although investigations indicate that tests at a finite gauge length of 3.175 mm (or 1/8 in) may be more closely related to the tenacity of many classes of cotton yarn.

0.4 International Calibration Cotton Standards have been established to enable different operators to adjust their personal level of testing to an agreed common level.

0.5 While formulating this standard, the Committee concerned did not feel called upon to lay down a sampling procedure for drawing a bulk sample from material collected from the field, the gin, the mill, the warehouse or the market. The bulk sample, it is expected, will be drawn so as to be representative of the lot under investigation.

0.6 While formulating this standard considerable assistance has been derived from:

Doc:ISO/TC 38/SC 6/WG 1 (Secretariat 71) 81 Draft proposal standard method for determination of tenacity of flat bundles of cotton fibres. International Organization for Standardization.

ASTM Designation: D 1445-64T Method of test for strength and elongation of cotton fibres (flat bundle method). American Society for Testing and Materials.

0.7 In this standard generally metric values have been specified. However, where found necessary, to familiarize the industry with the metric values equivalent fps values have also been given. Since Pressley instrument, which is calibrated in fps units, is indispensable to the textile industry at present, the pound value is used in the calculations appearing in **11** but the final result is expressed in metric units.

0.8 In reporting the result of a test made in accordance with this standard, if the final value, observed or calculated, is to be rounded off, it shall be done in accordance with IS : 2-1960*.

1. SCOPE

1.1 This standard prescribes a method for determination of strength of flat bundles of cotton fibres arranged in parallel manner. The method is applicable to fibres being tested either at zero gauge length or at 3.175 mm (or 1 /8 in) gauge length.

1.2 The standard is applicable to fibres from raw cotton or to fibres from various stages in the manufacturing process or to fibres separated or extracted from manufactured cotton products.

1.3 This standard is especially intended to be used with strength testing instruments which have been designed for specific use of testing flat bundles of cotton fibres (*see* Appendices A and B).