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INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

**ISO RECOMMENDATION
R 220**

METHOD OF SAMPLING RAW COTTON FOR TESTING

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BRIEF HISTORY

The ISO Recommendation R 220, *Method of Sampling Raw Cotton for Testing*, was drawn up by Technical Committee ISO/TC 38, *Textiles*, the Secretariat of which is held by the British Standards Institution (B.S.I.).

Work on this question by the Technical Committee began in 1948 and led, in 1958, to the adoption of a Draft ISO Recommendation.

In September 1958, this Draft ISO Recommendation (No. 224) was circulated to all the ISO Member Bodies for enquiry. It was approved, subject to some amendments, by the following Member Bodies:

Australia	Israel	Spain
Belgium	Italy	Sweden
Canada	Japan	Switzerland
Czechoslovakia	Norway	U.S.A.
Denmark	Poland	U.S.S.R.
France	Portugal	
Hungary	Republic of South Africa	

Five Member Bodies opposed the approval of the Draft:
Germany, India, Netherlands, Romania, United Kingdom.

The Draft ISO Recommendation was then submitted by correspondence to the ISO Council, which decided, in December 1961, to accept it as an ISO RECOMMENDATION.

METHOD OF SAMPLING RAW COTTON FOR TESTING

1. SCOPE

- 1.1 A procedure is indicated for sampling raw cotton fibre for the purpose of determining its various properties.
- 1.2 The various stages of sampling, intended to reduce the quantity of cotton to be handled at different levels of the bulk to be tested, are described.
- 1.3 Special methods of sampling may be given in specifications or contracts for cotton, when the nature of the materials or other circumstances make them desirable.

2. DEFINITIONS

- 2.1 *Bulk source.* One or more bales of cotton, for example:
 - (a) a bale,
 - (b) a group of bales of one variety,
 - (c) a group of bales of a particular grade,
 - (d) a group of bales from a given area,
 - (e) a group of bales of a particular blend or à mix at the mill.
- 2.2 *Laboratory bulk sample.* That portion of cotton taken from the bulk source in such a way as to ensure its representative character and to provide a quantity small enough to be handled with ease in the laboratory.
- 2.3 *Laboratory test sample.* That portion of cotton fibres taken from the laboratory bulk sample in such a way as to ensure its representative character and to provide a quantity small enough to be easily convertible into test specimens.
- 2.4 *Test specimen.* That portion of cotton fibres taken from the laboratory test sample which is to be placed in the testing machine at one time in order to determine a particular property.

3. PRINCIPLE

A laboratory bulk sample is taken from the bulk source. A laboratory test sample is taken from the laboratory bulk sample, and one or more test specimens are taken from the laboratory test sample. Each of these stages is intended to reduce the quantity of cotton, while preserving as far as possible its representativeness of the bulk source of cotton to be tested. All these stages may be used to advantage, but one or more may be omitted if this proves desirable.

4. LABORATORY BULK SAMPLE

The laboratory bulk sample should be taken in accordance with the requirements of contracts or in another way so that it should be duly representative.

NOTES

1. To obtain a composite sample that will be small enough to be easily handled in the laboratory, it is suggested that a total of at least 100 g (4 oz) of cotton should be taken. Since the bulk source is usually heterogeneous as regards the properties of the fibres, it is very important that it should be represented as perfectly as possible in the laboratory bulk sample. To bring this about with the least possible alteration of fibre properties, carry out all the operations of extracting and preparing the sample with the most scrupulous care.
2. Representativeness is of very great importance with so variable a material as cotton. Too much time and effort can hardly ever be spent in securing representativeness throughout the sampling process.

5. LABORATORY TEST SAMPLE

5.1 The laboratory test sample should be prepared by a method which takes into consideration the test to be performed and the degree of accuracy desired.

5.1.1 In general, fibre blending by a mechanical blender is preferable, particularly when the test specimen is small in size, as is the case in the flat-bundle strength test. However, in some cases, samples prepared by hand are adequate.

5.1.2 When the laboratory bulk sample consists of tufts taken by cutting into the bales, cut fibres should not be included in the laboratory test sample.

5.2 **Mechanical blending** (*preferred method*)

5.2.1 The mechanical blender is designed to use a certain weight of fibres, e.g. up to 10 g ($\frac{1}{2}$ oz).

5.2.2 Spread out the laboratory bulk sample so that pinches can be taken from it at any point. Take small pinches of fibre from at least 32 different evenly spaced points in the laboratory bulk sample.

5.2.3 Perform a light drafting action on the pinches before feeding them into the mechanical blender, so as to form as uniform a sheet of fibre as possible. Blend the fibres with the blender so as to produce a practically homogeneous sample, taking care not to damage the fibres.

5.3 **Manual methods**

5.3.1 Different methods have been described in national standards. They are designed for different methods of test, e.g. "cut-squaring", making hand slivers and making small samples by successive halving and combining. In some cases, it is preferable to prepare test specimens direct from the laboratory bulk sample.

6. TEST SPECIMEN

Prepare the test specimen according to the procedure described in the appropriate method of test.