

Method for the determination of trash content of cotton and for trash and lint content of waste intended for spinning, by the Shirley Analyser

Co-operating organizations

The Textile Divisional Council, under whose supervision this British Standard was prepared, consists of representatives from the following Government department and scientific and industrial organizations:

- British Railways Board
- Consumer Council
- Cotton Industry Standards Committee
- Jute Industry Standards Committee
- Linen Industry Standards Committee
- London Transport Board
- Man-made Fibres Industry Standards Committee
- Ministry of Defence
- Ropes and Cordage Industry Standards Committee
- Silk Industry Standards Committee
- Society of Dyers and Colourists*
- Textile Institute*
- Textile Machinery Industry Standards Committee
- Trades Union Congress
- Wool Industry Standards Committee

The organizations marked with an asterisk in the above list, together with the following, were directly represented on the committee entrusted with the preparation of this British Standard:

- British Jute Trade Research Association
- British Man-made Fibres Federation
- Committee of Directors of Textile Research Associations
- Commonwealth Joint Services Committee (Clothing and General Stores)
- Cotton, Silk and Man-made Fibres Research Association
- Hosiery and Allied Trades Research Association
- International Federation of Cotton and Allied Textile Industries
- Linen Industry Research Association

This British Standard, having been approved by the Textile Divisional Council, was published under the authority of the General Council on 29 December 1967

© BSI 12-1999

First published August 1957
First revision December 1967

The following BSI references relate to the work on this standard:
Committee reference T/-/8
Draft for comment 67/3646

ISBN 0 580 34002 3

Amendments issued since publication

Amd. No.	Date	Comments

Contents

	Page
Co-operating organizations	Inside front cover
Foreword	ii
1 Scope	1
2 Principle	1
3 Apparatus	1
4 Conditioning and testing atmosphere	1
5 Test specimen	1
6 Test procedure	1
7 Calculation and expression of results	2
8 Report	2
Appendix A Notes on the use of the Shirley Analyser	3

Foreword

This standard makes reference to the following British Standards:

BS 1051, *Terms relating to the conditioning of textiles and method for the determination of correct invoice weight.*

BS 1425, *Cleanliness of fillings and stuffings for bedding upholstery, toys and other domestic articles.*

This British Standard has been published by arrangement between the Textile Institute and the British Standards Institution. It was originally based on Tentative Textile Standard No. 35 which appeared in the *Journal of the Textile Institute* for January 1956.

In the present revision all dimensions have been converted to metric units, but the values in imperial units are included where apparatus may be calibrated in such units. Some of the settings in Appendix A have been amended in accordance with current practice.

The trash content of raw cotton is of importance to the spinner on account of the detrimental effect on yarn quality of any particles which survive the opening, carding and combing processes and the reduced yield of yarn which occurs with increasing trash content. Excessive trash often indicates unsatisfactory growing conditions and poor fibre quality.

The lint and trash contents of wastes extracted in cotton-spinning machinery are of importance since excessive loss of useful fibre increases costs. In preparing this standard the requirements of spinners have been kept in mind; they are mainly interested in the longer staple lengths contained in the wastes.

The Shirley Analyser is a machine for separating the trash from the lint by making use of their different buoyancies in air.

It has been found in practice that absolute separation cannot be achieved in one passage through the machine; some particles of trash always remain with the lint, and some lint falls into the trash tray; the completeness of the separation varies according to the origin of the cotton or the type of the waste. The procedure specified has been devised to attain as complete a separation as practicable with materials of the type normally encountered in cotton spinning.

It is possible with the Shirley Analyser to determine on the test specimen the percentages of lint, trash and cage loss; the last is the difference between the original weight of specimen and the sum of the lint and trash. A further quantity is sometimes used, the non-lint: this is the sum of the trash and cage loss percentages.

For characterizing the quality of cotton, a choice must be made from lint, trash and non-lint. Experience has shown that the trash content is the most suitable value. The cage loss, while exhibiting some variation with the quality of cotton, is liable to considerable uncontrolled variation due to moisture and is therefore unreliable as an indication of quality. The percentage lint content exhibits the same uncontrolled variation as the cage loss, but in the reverse direction.

The reasons for specifying this method and not one of the shorter methods, which are considered unsuitable for standardization, were outlined in a paper (*J. Text. Inst.*, 1956, 47, P24).

For characterizing the quality of waste, the lint content is commonly used, and for this reason this standard covers the determination of lint as well as trash in the testing of wastes.