

**B I S F A**

THE INTERNATIONAL BUREAU  
FOR THE STANDARDISATION OF MAN-MADE FIBRES

**Testing methods  
for  
nylon staple fibres**

2002 EDITION  
(This edition replaces the 1986 edition)

## **SCOPE**

These rules apply to man-made fibres of polyamide delivered by the producers as staple fibres or sliver or tow.

These rules do not apply to flock, or short-cut fibres.

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Chapter 6	DETERMINATION OF LINEAR DENSITY .....	35
	6.1 General remarks .....	35
	6.2 Scope.....	35
	6.3 Principle .....	35
	6.4 Apparatus, materials and reagents .....	36
	6.5 Test procedure.....	37
	6.6 Calculation of results and number of tests .....	39
	6.7 Presentation of results .....	41
	6.8 Precision and bias.....	41
	6.9 Tolerance.....	43
	6.10 Appendix: checking of vibroscope .....	43
Chapter 7	DETERMINATION OF TENSILE PROPERTIES .....	44
	7.1 General remarks .....	44
	7.2 Scope.....	44
	7.3 Principle .....	44
	7.4 Apparatus, materials and reagents .....	44
	7.5 Test procedure.....	46
	7.6 Fibre slippage through the clamps .....	48
	7.7 Jaw breaks.....	48
	7.8 Data to be collected.....	49
	7.9 Calculation of results and number of tests .....	49
	7.10 Presentation of results .....	51
	7.11 Tolerance.....	51
Chapter 8	STATISTICS: TERMINOLOGY AND CALCULATIONS.....	52
	8.1 Definitions .....	52
	8.2 Basic Statistics .....	53
	8.3 Statistical Process Control .....	58
Appendix 1	DEFINITION OF POLYAMIDE .....	60
Appendix 2	ACCURACY OF TEST METHODS .....	61

## **INTRODUCTION**

This new edition updates and refines BISFA methods for the testing of polyamide staple fibres and takes into account new product developments and significant improvements to the testing procedures.

As a result of a thorough review of the BISFA "Terminology" booklet (2000 edition), updated terms and definitions have been incorporated into this booklet and in particular, Chapter 2, 'Definitions' and Chapter 8, 'Statistics'

In order to measure the precision in terms of repeatability within a laboratory and reproducibility between laboratories, statistical methods have been defined and applied using inter-laboratory test data to some of the methods contained in this booklet.

These improvements should ensure that the procedures recommended by BISFA in this booklet and in its other publications, retain their position as the most useful and up-to-date internationally agreed testing methods for man-made staple fibres.

### **Acknowledgement**

BISFA wishes to acknowledge and thank Mr M J Taylor, from DuPont, and Mr O Chaubet, from RHODIA, who created this booklet.

## PREFACE

One of the principal aims of BISFA as set out in the statutes is to establish, for man-made fibres, rules for classification and nomenclature and standard methods of test to serve as a basis for sound trading practice.

The methods of manufacture used for such fibres allow a variety of new materials to be produced and it is therefore becoming increasingly necessary to establish and standardise concepts, which will promote harmonious technical and commercial relationships both at the national and international level.

As new fibre products appear, BISFA endeavours to establish suitable new rules and methods for them. These rules and methods embody concepts acceptable to producers, users and testing establishments alike. They currently describe testing methods for checking goods upon receipt and include:

- the determination of the commercial mass, linear density, and tensile properties for all products and in addition, the length for staple fibres; the shrinkage and twist for filament yarns; the amount of dip for tyre cord yarns and the antibacterial properties for bioactive fibres.
- maximum tolerances for commercial mass and for certain other fibre related properties  
for example, linear density, twist, fibre length.
- the conventional allowance used for the calculation of commercial mass

The methods that BISFA advocates for measuring the above properties are described in detail in the various BISFA methods booklets for each specific fibre to enable comparable results to be obtained between laboratories.

BISFA defines the commercial mass of a consignment in a manner, which is independent of the state in which the material is delivered and, in particular, of fluctuations in the moisture content of the material. The procedure ensures that the buyer can know within narrow technical limits what he is paying for, whatever may be the actual moisture content of the material at the time of delivery.

BISFA bases its calculation of commercial mass upon the oven-dry mass of fibre material that, depending on the fibre type, is essentially free of extractable material that may be present to assist fibre processing. (e.g. spin finish, lubricant, size, adhesive). The oven-dry mass is corrected by a numerical constant referred to as the conventional allowance (see Chapter 2, 'Definitions').

For some products, further corrections may be applicable and will therefore be defined in the appropriate BISFA test booklet

The invoice mass, since it is independent of the actual moisture content, is consequently often different from the mass found upon weighing the goods as delivered.

The detailing of the methods of test given by BISFA would be of no value unless the samples measured could be considered as representative of the entire consignment. BISFA has, therefore, also provided a sampling procedure that is dependent on the number of containers in the consignment. Consequently, the results of the tests according to BISFA methods are valid for the entire consignment and not for individual items i.e. single packages, bales, spools etc.

