B I S F A

INTERNATIONAL BUREAU
FOR THE STANDARDISATION OF MAN-MADE FIBRES

Testing methods for polyamide filament yarns

2004 - Edition
(This edition replaces the 1995 edition)

SCOPE

These methods apply to polyamide filament yarns and various derived products as

- single yarn,
- interlaced yarns,
- multiple wound yarns,
- folded yarns,
- cabled yarns,
- yarns on beams
- monofilament

special fabrics (but excluding textured filament yarns and tows for staple fibre) destined for either textile or industrial use.

They also apply to polyamide speciality fibres like bi-component and bioactive.

Note: Separate booklets are available for Polyamide Staple, BCF and Textured Yarn respectively.

Appendix I sets out the definitions of polyamide to which these methods apply.
Appendix II sets out the determination of relative humidity of air
Annex 1, Saturation vapour pressure over water
Annex 2, Relative humidity-psychrometric

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INTRODUCTION

This booklet replaces the 1995 edition and retains most of the original concepts whilst taking into account further improvements in the testing procedures and a broader range of products.

As it is not always easy to distinguish between yarns for textile use and yarns for industrial use, the test methods given in this booklet have been chosen such that the testing of all polyamide filament yarns (other than textured yarns) is covered.

Recently, BISFA has been engaged in a through review of its “TERMINOLOGY “ booklet, particularly the list of terms used in other booklets, and their definitions. Where relevant the new and updated terms and definition have been incorporated in this booklet.

A thorough revision of the "Determination of Commercial Mass" has taken place to include the determination of mass on beams and to refine the procedure

In the chapter (12) regarding the statistics, a new paragraph regarding the process control has been inserted.

The general arrangement of the chapters has been made more concise and much repetition has been eliminated. Great care has been taken to make the texts as uniform as possible in presentation and in a style similar to the other BISFA booklets. The texts as a whole are easier to understand.

These improvements should ensure that the procedures recommended by BISFA in this booklet and in its other publications retain their position as the most up-to-date internationally agreed testing methods for man-made Polyamide Filament Yarns and Tyre Cord fabrics.

Acknowledgements

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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, and fibre length.

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 which 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. “Definition”). For some products further corrections may apply and will be specified in the appropriate 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 such as single packages, spools etc.

Attention is drawn to other BISFA publications, in particular the booklet "Terminology relating to man-made fibres".

Users of BISFA booklets are responsible for ensuring that the latest and complete edition of the appropriate booklet is employed.