

BISFA
THE INTERNATIONAL BUREAU
FOR THE STANDARDISATION OF MAN-MADE FIBRES

**Testing methods for
para-aramid filament yarns**

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SCOPE

These methods apply to para-aramid filament yarns such as: single yarns, interlaced yarns, multiple wound yarns, folded yarns, and cabled yarns. They do not apply to yarns which are treated with a special sizing and/or dip.

Para-aramid filament yarn can exist in two distinct groups:

- 1: standard para-aramid yarn for (industrial) textile applications
- 2: high modulus para-aramid yarn for composite applications

Appendix I set out the definitions of para-aramid to which these methods apply.

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INTRODUCTION

This booklet contains the relevant test methods of para-aramid filament yarns for trading. The test methods given in this booklet have been chosen such that the testing of all para-aramid filament yarns are covered. They are in line with EN 12562 and ASTM D885-98

Three options for the "Determination of Linear Density" are included in this booklet.

Statistical evaluations of various properties are based on an inter-laboratory test to indicate the measure of precision in terms of the repeatability within a laboratory and the reproducibility between laboratories.

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PREFACE

One of the principal aims of BISFA as set out in its statutes is to establish for man-made fibres rules for classification and nomenclature and standard test methods 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 standardised concepts which will foster harmonious technical and commercial relationships both at the national and the 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 describe:

- a) testing methods for checking goods upon receipt; determination of the commercial mass, linear density, twist (for filament yarns) or length (for staple fibres), tensile properties.
- b) maximum tolerances for commercial mass, as well as for certain of the properties (linear density, twist).

The methods which BISFA advocates for measuring the above properties do not differ basically from similar tests performed on natural fibres. They are described in detail in the various BISFA methods booklets 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 the pure textile material, i.e. free of extractable matter which is necessarily present (spin finish, lubricant, size, adhesive, etc...). This oven-dry mass is corrected by a constant factor referred to as the conventional allowance, the value of which, fixed for each material, represents approximately the moisture corresponding to equilibrium in a standard atmosphere plus the other products mentioned above.

The invoiced 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 test methods 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, dependent on the number of containers in the consignment.

Consequently, the results of tests according to BISFA methods normally are valid only for the entire consignment and not for individual items such as single packages, spools, etc.

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

