
**Textile glass — Yarns — Basis for a
specification**

Verre textile — Fils — Base de spécification

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 3598 was prepared by Technical Committee ISO/TC 61, *Plastics*, Subcommittee SC 13, *Composites and reinforcement fibres*.

This third edition cancels and replaces the second edition (ISO 3598:1986), which has been technically revised.

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Introduction

A basis for a specification is intended to give guidance on the establishment of technical specifications for products of a given type. It should enumerate as completely as possible the points that should be considered at the time of drafting the specifications.

The basis for a specification, therefore, does not in itself constitute a specification, but rather a model plan for the elaboration of specifications applying to a particular product or to a family of products whose characteristics are very much related. These specifications may be established by a producer, supplier or user, or by a standardization organization.

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Textile glass — Yarns — Basis for a specification

1 Scope

This International Standard provides a basis for a specification applicable to textile glass yarns (strands, slivers, single yarns, folded yarns and cable yarns).

It does not apply to textured yarns, rovings, chopped strands, milled fibres, pre-impregnated yarns, etc.

This International Standard does not cover all requirements for specialized applications. Where such other requirements are necessary, they are, or will be, given in other appropriate International Standards.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 139, *Textiles — Standard atmospheres for conditioning and testing*

ISO 291, *Plastics — Standard atmospheres for conditioning and testing*

ISO 472, *Plastics — Vocabulary*

ISO 1887, *Textile glass — Determination of combustible-matter content*

ISO 1888, *Textile glass — Staple fibres or filaments — Determination of average diameter*

ISO 1889, *Reinforcement yarns — Determination of linear density*

ISO 1890, *Reinforcement yarns — Determination of twist*

ISO 2078, *Textile glass — Yarns — Designation*

ISO 3341, *Textile glass — Yarns — Determination of breaking force and breaking elongation*

ISO 3343, *Reinforcement yarns — Determination of twist balance index*

ISO 3344, *Reinforcement products — Determination of moisture content*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 472 apply.

4 Designation

The yarns covered by the specification shall be designated in accordance with the applicable clause of ISO 2078.

5 Conditioning

The specification shall supply the information required for proper conditioning of the samples and test specimens. In the absence of specific instructions for the yarns under consideration, it shall include a reference to ISO 139 or ISO 291.

6 Characteristics

6.1 General

Glass yarns shall be defined by the characteristics enumerated herein.

For the characteristics indicated by an asterisk, the specification shall indicate the tolerances allowed on the individual values and the mean values of the measurements made on a batch.

The criteria for acceptance or rejection of a batch based on the results of the testing shall be defined.

6.2 Type of glass

The type of glass is indicated in the designation. Current glass types are listed in ISO 2078.

6.3 Type of size

The specification shall indicate the type of size applied to the yarn (for example plastic size or textile size).

6.4 Diameter of staple fibres or filaments

The reference diameter of staple fibres or filaments indicated in the designation shall be determined and expressed in accordance with ISO 1888.

6.5 Linear density*

This shall be determined and expressed in accordance with ISO 1889.

6.6 Size content*

This shall be determined and expressed in accordance with ISO 1887.

6.7 Twist*

This shall be determined and expressed in accordance with ISO 1890.

6.8 Twist balance index

If necessary, this shall be determined and expressed in accordance with ISO 3343.

6.9 Moisture content*

This shall be determined and expressed in accordance with ISO 3344.

6.10 Breaking strength and breaking elongation*

These shall be determined and expressed in accordance with ISO 3341.

7 Visible faults

7.1 General

The following list gives a number of recognized visible faults on yarns or packages of yarn, produced during manufacture or during subsequent handling. Their permissible number and severity shall be stated in the specification.

7.2 List of visible faults in yarns

7.2.1 Hairy yarn

7.2.2 Dirty yarn

7.2.3 Slubs, fuzz balls

7.2.4 Yarn partially or wholly cut

7.2.5 Faulty splices:

- dirty
- incomplete [end(s) not bonded]
- lumpy (lumps in the bond)
- too long

7.2.6 Incorrect number of ends

7.2.7 Uneven doubling (loops caused by uneven length between two or more yarns wound together)

7.3 List of visible faults in packages

7.3.1 Shiny yarn (lack of size)

7.3.2 Sloughed yarn

7.3.3 Flared package

7.3.4 Undercut package

7.3.5 Loops (on body of winding)

7.3.6 Base loops (near flange of bobbin)

7.3.7 Damaged tubes or bobbins (with cuts, bruises or breaks)

7.3.8 Cracked winding (partial gaps in winding)

7.3.9 Entrapped waste

7.3.10 Entrapped foreign matter

7.3.11 Protruding end (generally due to a poor splice or poor start-up)

7.3.12 Entrapped end

7.3.13 Overfilled package

7.3.14 Package too soft

7.3.15 Package too hard

7.3.16 Defective or dirty transfer tail

7.3.17 Dirt spots or mildew

7.3.18 Bad build of the package

7.3.19 Package unflanged with loops on its end faces

7.3.20 Incorrect identification

7.3.21 Package abraded after manufacture

7.3.22 Slubs, fuzz balls

8 Delivery

8.1 Presentation and packaging

The specification shall include any requirements for presentation and packaging of the yarns.

8.2 Labelling

The specification shall include a requirement that the packaging container shall be provided with an external label including the following information:

- designation;
- supplier's code;
- type of yarn package or code number of the yarn package;
- type of packaging container or code number of the packaging container;
- net mass of the yarn packages;
- name of the supplier;
- date of manufacture (by agreement between the interested parties).

9 Storage

The specification shall include any requirements for storage conditions (temperature, relative humidity, time) necessary to ensure retention of the properties of the yarns.

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