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# International Standard



# 2078

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## Textile glass — Yarns — Designation

*Verre textile — Fils — Désignation*

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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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 2078 was prepared by Technical Committee ISO/TC 61, *Plastics*.

This fourth edition cancels and replaces the third edition (ISO 2078-1978), of which it constitutes a technical revision.

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# Textile glass — Yarns — Designation

## 1 Scope and field of application

This International Standard specifies a system of designating textile glass yarns [including single, multiple wound, folded (plied), cabled and textured yarns, strands, slivers and rovings] based on their linear density expressed in the Tex System.

This International Standard applies the rules of the single-to-fold designation given in ISO 1139 to these textile glass products.

## 2 References

ISO 2, *Textiles — Designation of the direction of twist in yarns and related products.*

ISO 1139, *Textiles — Designation of yarns.*

ISO 6355, *Textile glass — Vocabulary.*

## 3 Definitions

The terms used in this International Standard are defined in ISO 6355 and ISO 2.

## 4 Designation of a yarn

### 4.1 Elements of the designation

According to the definition given in ISO 1139, the designation of a yarn (single, strand, sliver, . . ., roving) is a condensed technical description containing the following elements.

#### 4.1.1 Glass used

A first letter, to specify the glass used by the manufacturer.

NOTE — The types of glass in general use are given in the table.

Table

Type	General indications
E	for general purposes; good electrical properties
D	high dielectric properties
A	high alkali content
C	chemical resistance
S,R	high mechanical strength
AR	alkaline resistant

#### 4.1.2 Type of yarn

A second letter to describe the type of yarn :

- C (continuous) for continuous filament yarns;
- D (discontinuous) for staple fibre yarns.

NOTE — These letters are placed in the prefix, as it is of special importance in the case of textile glass to distinguish between continuous filament yarns and staple fibre yarns; their use renders superfluous the notation for the number of filaments, preceded by the symbol *f* suggested in ISO 1139.

#### 4.1.3 Nominal diameter of fibre

A number, consisting of one or two figures, giving the nominal diameter, in micrometres, of the filament or staple fibre.

#### 4.1.4 Linear density, direction and amount of twist and number of components

Some, or all of the following elements, as in ISO 1139 :

- a) a number giving the linear density expressed in the Tex System. It is strongly recommended that the tex be used as

the basic unit; in which case the word *tex* can be omitted from the designation. (If multiples or submultiples of the *tex* are used, these units must be indicated after the value given for linear density.);

- b) the direction(s) of twist;<sup>1)</sup>
- c) the amount(s) of twist, expressed in turns per metre, for the twist of the final stage, and (if necessary) in the full designation, for the twist of each intermediate stage;
- d) the number of components in folding (plying) or cabling.

**4.1.5 Manufacturer's code**

If desired, the designation may be completed with the manufacturer's code permitting the incorporation of any complementary information that does not appear among the previous elements, for example the type of size and the total linear density. If it is mentioned, the manufacturer's code shall be placed either before or after the designation defined below and never between components [for example in the case of folded (plied) yarns having dissimilar components].

**4.2 Designation of types of textile glass yarns**

4.2.1 to 4.2.8 give the elements that shall appear in the designation of glass yarns.

**4.2.1 Strands**

- a) type of glass used;
- b) the letter C for continuous filament yarns;
- c) the nominal diameter, in micrometres, of the filaments, followed by a space;
- d) the linear density, in *tex*.

*Example* : EC10 40

**4.2.2 Slivers**

- a) type of glass used;
- b) the letter D (discontinuous) for staple fibre yarns;
- c) the nominal diameter, in micrometres, of the staple fibres, followed by a space;
- d) the linear density, in *tex*.

*Example* : ED7 190

**4.2.3 Single yarns**

**4.2.3.1 Single continuous filament yarns**

- a) type of glass used;
- b) the letter C for continuous filament yarns;
- c) the nominal diameter, in micrometres, of the filaments, followed by a space;
- d) the linear density, in *tex*, followed by a space;
- e) the direction of twist, followed by a space;
- f) the amount of twist, expressed in turns per metre.

*Example* : EC9 34 Z 40

NOTE — When several strands are assembled in parallel and twisted together, give only the total linear density of all the strands before twisting.

For example, starting with four strands of EC9 34 and twisting these together, the designation of the resulting yarns is EC9 136 Z 40.

**4.2.3.2 Single staple fibre yarns**

- a) type of glass used;
- b) the letter D (discontinuous) for staple fibre yarns;
- c) the nominal diameter, in micrometres, of the staple fibres, followed by a space;
- d) the linear density, in *tex*, followed by a space;
- e) the direction of twist, followed by a space;
- f) the amount of twist, expressed in turns per metre.

*Example* : ED7 190 Z 160

**4.2.3.3 Textured yarns**

- a) type of glass used;
- b) the letter C or D for the designation of the original yarn (see 4.1.2);
- c) the nominal diameter, in micrometres, of the filaments, followed by a space;
- d) the linear density, in *tex*, before texturation, followed by a space;
- e) the linear density, in *tex*, after texturation, preceded by the letter T.

*Example* : EC9 340 T352

1) If the yarn has been subjected to a twisting operation, this will be described by its direction and followed by the degree of twist. If the designation carries no mention of twist, this shall always signify the *absence* of any twisting operation.