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September 2025

भारतीय मानक ब्यूरो
BUREAU OF INDIAN STANDARDS

Draft For Comments Only

भारतीय मानक मसौदा

प्रबलन रेशे — बुने हुये कपड़े — अपेक्षाएं और विनिर्देश

(आई एस 17599 का *पहला पुनरीक्षण)*

Draft Indian Standard

REINFORCEMENT FIBRES — WOVEN FABRICS — REQUIREMENTS AND SPECIFICATIONS

(First Revision of IS 17599 *)*

ICS : 95.100

High Performance Fibres, Fibrous Structure and Textile Components of Composites Sectional Committee, TXD 40	Last date for receipt of comments is 21 November 2025

NATIONAL FOREWORD

(*Formal clauses will be added later*)

This Indian Standard intended to be adopted is identical with ISO 2113 : 2023 'Reinforcement fibres — Woven fabrics — Requirements and specifications' issued by the International Organization for Standardization (ISO).

This standard was originally published in 2021. The present revision has been undertaken to align it with the latest version of ISO 2113 : 2023.

The conditioning temperature of (20 ± 2) °C as specified in International Standards is not suitable for tropical countries like India where the atmospheric temperature is normally much higher than 20 °C. It is almost impossible to maintain this temperature specially during summer when the atmospheric temperature rises even up to 50 °C. In view of the above, IS 6359 : 2023 'Method for conditioning of textiles (first revision)' which specifies a temperature of (27 ± 2) °C for conditioning of the test specimens for the tropical countries like India shall be referred.

Certain conventions are, however, not identical to those used in Indian Standards. Attention is particularly drawn to the following:

a) Wherever the words 'International Standard' appear referring to this standard, they should be read as 'Indian Standard'.
b) Comma (,) has been used as a decimal marker while in Indian Standards, the current practice is to use a point (.) as the decimal marker.

In the standard intended to be adopted, reference appears to certain International Standards for which Indian Standards also exist. The corresponding Indian Standards which are to be substituted in their respective places are listed below along with their degree of equivalence for the editions indicated:

International Standard	*Corresponding Indian Standard*	*Degree of Equivalence*
ISO 291, Plastics — Standard atmospheres for conditioning and testing	IS 13360 (Part 1) : 2025 Plastics — Methods of testing: Part 1 Introduction (*first revision*)	Technically equivalent
ISO 1887, Textile glass — Determination of combustible matter content	IS 17600 : 2021/ISO 1887 : 2014 Textile glass — Determination of combustible matter content	Identical
ISO 2078, Textile glass — Yarns — Designation	IS 17300 : 2025/ISO 2078 : 2022 Textile glass — Yarns — Designation (*first revisioin*)	Identical
ISO 2797, Textile glass — Rovings — Basis for a specification	IS 17598 : 2021/ISO 2797 : 2017 Textile glass — Rovings — Basis for a specification	Identical
ISO 3598, Textile glass — Yarns — Basis for a specification	IS 17597 : 2021/ISO 3598 : 2011 Textile glass — Yarns — Basis for a specification	Identical
ISO 4602, Reinforcements — Woven fabrics — Determination of number of yarns per unit length of warp and weft	IS 17305 : 2019/ISO 4602 : 2010 Reinforcements — Woven fabrics — Determination of number of yarns per unit length of warp and weft	Identical
ISO 4603, Textile glass — Woven fabrics — Determination of thickness	IS 17312 : 2019/ISO 4603 : 1993 Textile glass — Woven fabrics — Determination of thickness	Identical
ISO 4604, Textile glass — Woven fabric — Determination of conventional flexural stiffness — Fixed-angle flexometer method	IS 17611 : 2021/ISO 4604 : 2011 Reinforcement fabrics — Determination of conventional flexural stiffness — Fixedangle flexometer method	Identical
ISO 3374, Reinforcement products — Mats and	IS 17309 : 2019/ISO 3374 : 2000 Reinforcement products — Mats	Identical

fabrics — Determination of mass per unit area	and fabrics — Determination of mass per unit area	
ISO 4606, Textile glass — Woven fabric — determination of tensile breaking force and elongation at break by the strip method	IS 17595 : 2021/ISO 4606 : 1995 Textile glass — Woven fabric — Determination of tensile breaking force and elongation at break by the strip method	Identical
ISO 5025, Textile glass — Woven fabric — Determination of width and length	IS 17592 : 2021/ISO 5025 : 2017 Reinforcement products — Woven fabrics — Determination of width and length	Identical
ISO 10548, Carbon fibre Determination of size content	IS 17605 : 2021/ISO 10548 : 2002 Carbon fibre — Determination of size content	Identical
ISO 13002, Carbon fibre — Designation system for filament yarns	IS 17308 : 2019/ ISO 13002 : 1998 Carbon Fibre — Designation System for Filament Yarns	Identical
ISO 3951-1, Sampling procedures for inspection by variables — Part 1: Specification for single sampling plans indexed by acceptance quality limit (AQL) for lot-by-lot inspection for a single quality characteristic and a single AQL	IS/ISO 3951-1 : 2022 Sampling Procedures for Inspection by Variables Part 1 Specification for Single Sampling Plans Indexed by Acceptance Quality Limit (AQL) for Lot-by-Lot Inspection for a Single Quality Characteristic and a Single AQL (*first revision*)	Identical

The technical committee has reviewed the provisions of the following International Standard referred in this standard intended to be adopted and has decided that this is acceptable for use in conjunction with this standard:

International Standard	*Title*
ISO 2859-1	Sampling procedures for inspection by attributes — Part 1: Sampling schemes indexed by acceptance quality limit (AQL) for lot-by-lot inspection

In reporting the result of a test or analysis made in accordance with this standard, if the final value, observed or calculated, is to be rounded off, it shall be done in accordance with IS 2 : 2022 ‘Rules for rounding off numerical values (*second revision*)’.

1 INTRODUCTION

A specification is intended to "specify" the standardized object by providing verifiable requirements, and its necessary elements include "requirements" and "verification methods". It

should enumerate as completely as possible the points that should be considered at the time of drafting the specification.

The specification, therefore, can be used as the basis for procurement and trade, the basis for judging the conformity of products, processes or services, and the benchmark for self-declaration and certification.

2 SCOPE

2.1 This document provides characteristics and requirements to create specifications of fabrics woven from yarns (including single yarns, multiple-wound yarns, plied yarns, cabled yarns and rovings) made from textile glass, carbon or aramid and generally used for plastics reinforcements.

2.2 This document does not cover all requirements for some specialized applications.

3 TERMS AND DEFINITIONS

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1 Woven Fabric

Reinforcement-fibre fabric made by interlacing at least two sets of threads perpendicularly to each other, or at some other specified angle, such interlacing being carried out by weaving on weaving machine.

3.2 Warp

Yarns lying in the lengthwise direction of the fabric in 0° direction.

3.3 Weft

yarns running from selvedge to selvedge, generally at right angles to the warp (3.2) in 90° direction.

3.4 Type of Weave

Designation of the method of interlacing warp (3.2) and weft (3.3) to give a regular, repeating pattern of weaving.

EXAMPLE:

Plain, satin, twill.

3.5 Construction

Number of yarns per centimetre length in the warp (3.2) and weft (3.3) directions.

Note — The term is also used with reference to the type of weave (3.4).

3.6 Tracer Yarn

Yarn of either different colour or different composition, or both from the reinforcement yarns, which is included in the fabric for product identification or to aid fabric alignment during moulding.

FORMAT FOR SENDING COMMENTS ON BIS DOCUMENTS

(Please use A4 size sheet of paper only and type within fields indicated. Comments on each clause/sub clause/table/fig etc. be started on a fresh box. Information in column 3 should include reasons for the comments and suggestions for modified working of the clauses when the existing text is found not acceptable. Adherence to this format facilitates Secretariat's work)

Please e-mail your comments to txd@bis.gov.in

NAME OF THE COMMENTATOR/ORGANIZATION:

DOCUMENT NO: TXD 40 (28726) WC

BIS LETTER REFERENCE NO. : TXD 40 (28726)

Item, Clause Sub-Clause No. Commented upon (Use Separate Box afresh)	**Comments**	**Specific Proposal (Draft clause to be add/amended)**	**Remarks**	**Technical References and justification on which (2), (3), (4) are based**
(1)	**(2)**	**(3)**	**(4)**	**(5)**