

Customer Acceptance Standard

Glass Fibre Mesh Fabrics

This standard is valid for delivery of glass fibre mesh fabrics. Glass fibre mesh fabrics (further only fabrics) are fabrics made from glass yarns, glass strands, rovings, zero twists and voluminized yarns ECO.

Fabrics can be designated by colour threads in the direction of a warp. The designation is done only after an agreement with a customer.

IDENTIFICATION

Fabrics are designated by means of a letters' and numbers' system of following meaning:

- "R" - a symbol for designating of mesh fabrics
- two or three fold number presents an approx. mass per unit area of a loom state fabric in g.m^{-2}
- the letter "A" and a number presenting a type of a coating
- if need be other data

An example: R 131 A101

Note: For loomstate fabrics are not cited data about a type of a coating

TECHNICAL REQUIREMENTS

Fabrics' parameters

Glass "E" (Eutal) applied for manufacture of glass yarns and glass strands, rovings, zero twists and voluminized yarns ECO has to correspond with works standard (PN) PN 0349 97 (it corresponds to DIN 1259-1).

Colour of fabric is white - or according to agreement with a customer.

The fabrics are produced with the tolerance of width $\pm 1\%$

Further parameters are mentioned in data sheets which are a part of this customer acceptance standard (CAS). These parameters are concerned:

square dimension
weave
width
length of a roll
thickness

mass per unit area of a loom state fabric
 mass per unit area of a coated fabric
 strength and elongation

Visual defects

Fabrics can have defects being from the production point of view unavoidable, but only in further stated range.

Rolls of a fabric must not present more than 15 defects according to the criteria written below, converted to 50 m², any non-permitted defects and length of a roll shorter than a required one by a customer. Evaluation of defects must be done visually, by means of a measurement, counting and converting into 50 m². Fabrics are classified according to criteria written below:

- permitted defects and their evaluating

Types of defects	Classification of defects
a) gap - size up to 1,5 of multiple of a distance of weft in any length	1 defect
b) warp thread frayed or blown up of weft in the length from 5 to 100 mm and overlapping or filling an inner diameter over ¼ for each 2 cases per 1 linear meter	1 defect

- non-permitted defects

- a) a gap over 1,5 multiple distance of wefts in any length
- b) warp frayed thread in the length over 10 cm
- c) deflected (uneven) fronts of rolls over ± 5 mm
- d) weft skewing or weft waving over 2 % of width of fabric
- e) a missing warp thread
- f) an untrimmed edge in any length
- g) an attached piece of a coating of dimension up to 10 mm in any direction
- h) loose warp edge thread

Note: In case of an occurrence of non-permitted defects is a fabric eliminated.

TESTING

Test methods

Setting	according to ISO 4602
Width	according to ISO 5025
Length of a roll	according to ISO 5025
Thickness	according to ISO 4603
Mass per unit area	according to DIN EN 12127, ÖNORM B 3347 or ETAG
Combustible matter content (LOI)	according to ISO 1887 or ÖNORM B 3347 or ETAG
Square dimension	according to ÖNORM B 3347 or ETAG
Strength and elongation	according to ÖNORM B 3347, DIN ISO 13934-1, EN 13496, IfBt, ETAG, CSTB procedure

Note: Strength and elongation have to embody of stability in especial conditions. Tests are realized in accordance to the agreement with a customer in accordance with ÖNORM B 3347 or DIN ISO 13934-1 and IfBt, ETAG 004 or CSTB this way:

- according to ÖNORM are tested strength and elongation in standard condition, in three ionic alkaline solution.
- according to DIN and IfBt are tested strength and elongation in standard condition, in 5 % NaOH solution and in fast alkaline test.
- according to ETAG are tested strength and elongation in standard condition, in three ionic alkaline solution.
- according to CSTB are tested strength and elongation in standard condition, in three ionic alkaline solution and cement.

Weft skewing and weft waving	according to ČSN 80 0865
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Sampling and evaluation of results

Sampling and evaluation of tests' results has to be done in accordance with Czech Standard ČSN ISO 2859-1 and ČSN ISO 3951.

Conditioning and test atmosphere

Unless it is specified in another way during tests or an agreement, test samples will be conditioned under a atmosphere according to Czech Standard ČSN EN 20139 that means at temperature $20^{\circ}\text{C} \pm 2^{\circ}\text{C}$ and relative humidity $65\% \pm 2\%$ and under this atmosphere will be tested.

Sampling procedures for inspection by attributes

A delivery will be evaluated from the view point of visual defects by means of statistical inspection according to ČSN ISO 2859 - 1. Sampling procedures for inspection will be done by means of simple sampling, a normal inspection, inspection level I and a value AQL 2,5 %. The delivery will not be accepted, if number defective products detected according to clause 4.2 is greater than indicate inspection number "Ac".

Acceptance sampling by variables

A delivery will be evaluated by means of statistical inspection according to ČSN ISO 3951. It has to be used a normal inspection, inspection level I, a value AQL 1,5 % and s-method.

For an every inspection attribute it is necessary to detect x_{average} , that is an arithmetic average from single values x_i , where a single value represents a test result from one roll, which will arise from more single tests on this roll if need be a standard deviation of a sample "s"

As inspection attributes are considered:

- length and width
- mass per unit area
- strength and elongation

It is necessary to detect for each attribute, if an average and single values correspond to limits listed in data sheets. In the case of conformity the delivery is accepted. If the limits of average or single values are exceeded, it is necessary perform calculation of a standard deviation of a sample "s" and evaluation of delivery according to s-method.

PACKING AND DESIGNATION

Fabrics are wound on paper tubes. The front end of a fabric is glued to the tube, the fabric must be fixed parallel with weft onto the tube.

Rolls are packed usually in PE foil. Single rolls of fabric are usually packed vertically in cardboard box, on a wooden pallet.

A concrete method of packing is mentioned in works standard for packing or it is agreed with a customer.

Single pallets are designated with a label containing data agreed with a customer.



STORING

Packed rolls are necessary to store in dry, sealed rooms. The temperature of storing is from -10 °C to + 50 °C.

DELIVERY

Fabrics are delivered in rolls of length stated in data sheets of single types. Other length of rolls must be agreed between a supplier and a customer.

TEST CERTIFICATE

On request the producer will write a certificate of conformity (test report) conformable to standard ČSN EN 10204.

QUALITY CLAIMS

In the event that either the Customer or Saint-Gobain ADFORS has reason to suspect that a shipment (a batch) may contain material considered out of specification, the party first suspecting such condition will immediately notify the other. The use of the suspect batch must be immediately discontinued and product must be segregated from manufacturing and held available for Saint-Gobain ADFORS' inspection. Saint-Gobain ADFORS will assume responsibility for initiating appropriate action and investigation of the product. Saint-Gobain ADFORS will assume responsibility, in accordance with this Customer Acceptance Standard, for the quality of the glass fibre mesh fabrics it supplies but not for the quality and/or performance of a combination of the glass fibre mesh fabrics with other products or materials or any end product containing the glass fibre mesh fabrics. The latter can be assessed and guaranteed only by its manufacturer.

Any complaint notified to Saint-Gobain ADFORS more than 6 months after the delivery date of the claimed product shall be time-barred and will not be accepted.

LIABILITY

As a standard rule, Saint-Gobain ADFORS' liability for damage compensation (as per these non-exhaustive and non-limiting examples such as: machine stop, loss of production, finished product and its scrapping costs, requests from second tier customers etc.) is limited to the net purchase price of the fabrics paid by the customer. The Customer's exclusive remedy and the limit of Saint-Gobain ADFORS' liability for any breach of the limited warranty set forth above, whether any such breach is based on negligence, breach of contract or warranty, strict liability, or any other theory, shall be, at Saint-Gobain ADFORS' discretion, This also applies to the repair, replacement with a like quantity of non-defective product or refund of the net purchase price, plus reasonable shipping

charges incurred by Customer for approved returns. Saint-Gobain ADFORS shall not be liable for any consequential or special damages based on negligence, breach of contract or warranty, strict liability, or any other theory, for failure to perform its obligations under this agreement and limited warranty. Additionally, consequential and special damages shall not be recoverable even if the repair, replacement or refund remedy for the Customer's breach of its limited warranty fails of its essential purpose or for any other reason.

10. STANDARD REFERENCES

- ISO 1887-1995:** Textile glass-Determination of combustible matter content
ISO 4602-2010: Reinforcements-Woven fabrics-Determination of number of yarns per unit length of warp and weft
ISO 4603-1993: Textile glass-Woven fabrics-Determination of thickness
ISO 5025-1997: Reinforcements products-Woven fabrics-Determination of width and length
DIN 1259-1-2001: Glass. Terminology relating to glass types and groups
DIN EN 12127-1997: Textiles-Fabrics-Determination of mass per unit area using small samples.
DIN EN ISO 13 934-1-2013: Textiles-Tensile properties of fabrics-Part 1: Determination of maximum force and elongation at maximum force using the strip method
DIN 61 101-1-1979: Weaves. General Terms. Basic weaves.
DIN 61 850-1976: Textile glass products and auxiliary products, terms and definitions
ÖNORM B 3347-2004: Textile glass fibre mesh for rendering and plastering mortar
ČSN 80 0020-1965: Weaves and weaves technique. Terminology.
ČSN 80 0025-1975: Nomenclature for defects in fabrics
ČSN 80 0865-1993: Determination of skewing in textile fabrics, piece good and clothing
ČSN EN 10204-2005: Metallic products. Types of inspection documents
ČSN EN 13496-1:2013: Textiles-Tensile properties of fabrics-part 1: Determination of maximum force and elongation at maximum force using the strip method
ČSN EN 139-2005: Textiles. Standard atmospheres for conditioning and testing
ČSN ISO 2859-1-2000: Sampling procedures for inspection by attributes. Part 1: Sampling plans indexed by acceptable quality level (AQL) for lot-by-lot inspection
ČSN ISO 3951-2008: Sampling procedures and charts for inspection by variables for percent nonconforming
PN 0349 97: Alkali-free aluminoborosilicate glass (EUTAL).
IfBt - 1990: Binding prescript of Build institute for building industry of Germany
ETAG 004-2000: Guideline for European technical approval of External Thermal Insulation

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