

Approval body for construction products
and types of construction

Bautechnisches Prüfamt

An institution established by the Federal and
Laender Governments



European Technical Assessment

ETA-12/0159
of 15 June 2018

English translation prepared by DIBt - Original version in German language

General Part

Technical Assessment Body issuing the
European Technical Assessment:

Deutsches Institut für Bautechnik

Trade name of the construction product

SCHOTT Fourcault Glass: ARTISTA®, RIVULETTA®,
RESTOVER®, RESTOVER® light, RESTOVER® plus,
TIKANA®, GOETHEGLAS

Product family
to which the construction product belongs

Drawn Sheet Glass

Manufacturer

SCHOTT AG
Hattenbergstraße 10
55122 Mainz
DEUTSCHLAND

Manufacturing plant

Plant 1
Plant 2

This European Technical Assessment
contains

10 pages including 3 annexes which form an integral part
of this assessment

This European Technical Assessment is
issued in accordance with Regulation (EU)
No 305/2011, on the basis of

EAD 300010-00-0505

This version replaces

ETA-12/0159 issued on 8 May 2012

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Specific part

1 Technical description of the product

The products are glass panes with decorative surface phenomena, different sizes and different thicknesses made of drawn sheet glass which is not covered by EN 572-9¹. The chemical composition of the glass, the characteristic bending strength and thickness tolerances deviate from the specifications defined in EN 572-1².

The following glass types are covered by this ETA:

- ARTISTA®
- RIVULETTA®
- Restoration glasses: RESTOVER®, RESTOVER® light, RESTOVER® plus, TIKANA® and GOETHEGLAS

SCHOTT Fourcault glasses are manufactured using a special drawing process, the Fourcault process.

ARTISTA®

ARISTA® glass is a colourless Fourcault glass with a structured surface on one side.

RIVULETTA®

RIVULETTA® is a colourless Fourcault glass with a parallel-running fine-lined surface on one side.

Restoration glasses

These glasses are colourless Fourcault glasses with different irregular surfaces.

This ETA covers the basic product and the processed products of SCHOTT Fourcault glasses. The SCHOTT Fourcault basic products are processed to thermally toughened safety glass according to EN 12150-2³, heat soaked thermally toughened safety glass according to EN 14179-2⁴, laminated glass and laminated safety glass according to EN 14449⁵ and insulating glass according to EN 1279-5⁶ respecting Annex B.

The regulations are valid only for uncoated SCHOTT Fourcault glass.

2 Specification of the intended use in accordance with the applicable European Assessment Document

The performances given in Section 3 are only valid if SCHOTT Fourcault glasses are used in compliance with the specifications and conditions given in the Annexes A to C.

1	EN 572-9	Glass in building - Basic soda lime silicate glass products - Part 9: Product standard
2	EN 572-1	Glass in building - Basic soda-lime silicate glass products - Part 1: Definitions and general physical and mechanical properties
3	EN 12150-2	Glass in building - Thermally toughened soda lime silicate safety glass - Part 2: Product standard
4	EN 14179-2	Glass in building - Heat soaked thermally toughened soda lime silicate safety glass - Part 2: Evaluation of conformity
5	EN 14449	Glass in building - Laminated glass and laminated safety glass - Product standard
6	EN 1279-5	Glass in building - Insulating glass units - Part 5: Evaluation of conformity

SCHOTT Fourcault glasses – the basic product and the processed products – are used in different applications. First and foremost, they are used for the glazing of historic buildings to achieve a historical correct building appearance, especially for buildings that have been constructed before the float glass process have been invented (before 1955).

SCHOTT Fourcault glasses are used both for interior glazing systems (e. g. interior partitions, light-diffusing ceilings, doors) as well as for exterior glazing systems (e. g. windows and facades).

The verifications and assessment methods on which this European Technical Assessment is based lead to the assumption of a working life of SCHOTT Fourcault glasses of at least 25 years. The indications given on the working life cannot be interpreted as a guarantee given by the producer, but are to be regarded only as a means for choosing the right products in relation to the expected economically reasonable working life of the works.

3 Performance of the product and references to the methods used for its assessment

3.1 Safety in case of fire (BWR 2)

Essential characteristic	Performance
Reaction to fire (monolithic panes)	Class A1

3.2 Safety and accessibility in use (BWR 4)

Essential characteristic	Performance
Characteristic bending strength of the basic product (5 % quantile at 95 % confidence level)	$f_{t,k} = 30.0 \text{ N/mm}^2$ for annealed SCHOTT Fourcault glass
Characteristic bending strength of the thermally toughened safety glass and heat soaked thermally toughened safety glass (5 % quantile at 95 % confidence level)	$f_{t,k} = 105 \text{ N/mm}^2$ for thermally toughened SCHOTT Fourcault glass
Dimensions, tolerances and compositions	Annex A
Processed products	Annex B

4 Assessment and verification of constancy of performance (AVCP) system applied, with reference to its legal base

In accordance with EAD No. 300010-00-0505 the applicable European legal act is: Decision 2000/245/EC⁷ of the European Commission, supplemented by the Decision 2001/596/EC⁸.

The systems to be applied are:

System 3 for any use except for uses subject to regulations on reaction to fire or on external fire performance.

For uses subject to regulations on reaction to fire or on external fire performance the applicable AVCP systems are 3 or 4 depending on the conditions defined in the said Decision.

⁷ Official Journal of the European Communities/Union L 77/13 of 28/03/2000

⁸ Official Journal of the European Communities L 209/33 of 2.8.2001

English translation prepared by DIBt

5 Technical details necessary for the implementation of the AVCP system, as provided for in the applicable EAD

Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited with Deutsches Institut für Bautechnik.

Issued in Berlin on 15 June 2018 by Deutsches Institut für Bautechnik

BD Dipl.-Ing. Andreas Kummerow
Head of Department

beglaubigt:
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Annex A

Characteristics of SCHOTT Fourcault glasses

ARTISTA®

SCHOTT Fourcault glass ARTISTA® with the following characteristics:

Dimensions and tolerances:

Thicknesses (mm)	Tolerances (mm)	Max length (mm)	Tolerances (mm)	Max width (mm)	Tolerances (mm)
2.75	± 0.25	2100	± 25	1500	+100 / -200
4.00	± 0.25	2100	± 25	1500	+100 / -200
6.00	± 0.50	2100	± 25	1500	+100 / -200
8.00	± 0.50	2100	± 25	1500	+100 / -200
10.00	± 0.50	2100	± 25	1500	+100 / -200

RIVULETTA®

SCHOTT Fourcault glass RIVULETTA® with the following characteristics:

Dimensions and tolerances:

Thicknesses (mm)	Tolerances (mm)	Max length (mm)	Tolerances (mm)	Max width (mm)	Tolerances (mm)
2.75	± 0.25	1600	± 25	1500	+100 / -200
4.00	± 0.25	2900	± 25	1500	+100 / -200
6.00	± 0.50	2900	± 25	1500	+100 / -200
8.00	± 0.50	2900	± 25	1500	+100 / -200
10.00	± 0.50	2900	± 25	1500	+100 / -200

Restoration glasses: RESTOVER®, RESTOVER® light, RESTOVER® plus, TIKANA® and GOETHEGLAS

SCHOTT Fourcault glasses with the following characteristics:

Dimensions and tolerances for RESTOVER®:

Thicknesses (mm)	Tolerances (mm)	Max length (mm)	Tolerances (mm)	Max width (mm)	Tolerances (mm)
2.00	± 0.25	1600	± 25	1500	+100 / -200
2.75	± 0.25	2900	± 25	1500	+100 / -200
4.00	± 0.25	2900	± 25	1500	+100 / -200

Dimensions and tolerances for RESTOVER® light:

Thicknesses (mm)	Tolerances (mm)	Max length (mm)	Tolerances (mm)	Max width (mm)	Tolerances (mm)
2.75	± 0.25	2900	± 25	1500	+100 / -200
4.00	± 0.25	2900	± 25	1500	+100 / -200

Dimensions and tolerances for RESTOVER® plus:

Thicknesses (mm)	Tolerances (mm)	Max length (mm)	Tolerances (mm)	Max width (mm)	Tolerances (mm)
2.95	± 0.35	2900	± 25	1500	+100 / -200

Dimensions and tolerances for TIKANA®:

Thicknesses (mm)	Tolerances (mm)	Max length (mm)	Tolerances (mm)	Max width (mm)	Tolerances (mm)
4.00	± 0.25	2900	± 25	1600	+100 / -200
6.00	± 0.50	2900	± 25	1600	+100 / -200

Dimensions and tolerances for GOETHEGLAS:

Thicknesses (mm)	Tolerances (mm)	Max length (mm)	Tolerances (mm)	Max width (mm)	Tolerances (mm)
4.50	± 0.50	2900	± 25	1500	+100 / -200
6.00	± 0.50	2900	± 25	1500	+100 / -200

Annex B**Processed SCHOTT Fourcault glasses**

The harmonized European product standards EN 12150-2, EN 14179-2, EN 14449 and EN 1279-5 are not valid for SCHOTT Fourcault glasses due to deviant basic glass product. With this ETA the processing of SCHOTT Fourcault glasses listed in this Annex is assessed by respecting the specifications of the referred standards. The CE-marking results from this ETA.

1 Thermally toughened safety glass

The following SCHOTT Fourcault glasses are thermally toughened respecting EN 12150-2 and heat soaked respecting EN 14179-2. The given thickness is the minimum thickness of the glass to be toughened.

RIVULETTA®	Thickness: 4.00 mm
RESTOVER® light	Thickness: 4.00 mm
TIKANA®	Thickness: 4.00 mm
GOETHEGLAS	Thickness: 4.50 mm

2 Laminated safety glass made of annealed SCHOTT Fourcault glasses

The following SCHOTT Fourcault glasses made of annealed SCHOTT Fourcault glasses are processed respecting EN 14449. The given thickness is the respective minimum thickness of a single glass pane.

ARTISTA®	Thickness: 2.75 mm
RIVULETTA®	Thickness: 4.00 mm
RESTOVER®	Thickness: 2.75 mm
RESTOVER® light	Thickness: 2.75 mm
RESTOVER® plus	Thickness: 2.95 mm
TIKANA®	Thickness: 4.00 mm
	Thickness: 6.00 mm
GOETHEGLAS	Thickness: 4.50 mm

For the composition of laminated safety glass the outer pane is SCHOTT Fourcault glass and the inner pane(s) is (are) float glass according to EN 572-2⁹. The interlayer is made with a thickness of at least 0.76 mm PVB foil (polyvinyl butyral) with the following properties for tear strength > 20 N/mm² and for elongation at rupture > 250 %.

⁹ EN 572-2 Glass in building - Basic soda lime silicate glass products - Part 2: Float glass

3 Laminated safety glass made of thermally toughened SCHOTT Fourcalt safety glasses

The following SCHOTT Fourcalt glasses made of thermally toughened safety glass are processed respecting EN 14449. The given thickness is the respective minimum thickness of a single glass pane.

RIVULETTA®	Thickness: 4.00 mm
RESTOVER® light	Thickness: 4.00 mm
TIKANA®	Thickness: 4.00 mm
GOETHEGLAS	Thickness: 4.50 mm

For the composition of laminated safety glass the outer pane is thermally toughened SCHOTT Fourcalt safety glass and the inner pane(s) is (are) float glass according to EN 572-2 and thermally toughened safety glass according to EN 12150-2 respectively. The interlayer is made of PVB foil (polyvinyl butyral) with the following properties for tear strength $> 20 \text{ N/mm}^2$ and for elongation at rupture $> 250 \%$.

4 Insulating glass units

SCHOTT Fourcalt glasses according to Annex A and the above clauses 1 to 3 are processed to insulating glass units respecting EN 1279- 5.

Annex C

Recommendations for structural design

The following condition shall be verified under a combination of actions:

$$R_d \leq f_{t,k} / \gamma_m$$

$f_{t,k}$ Characteristic bending strength according to clause 3.2

γ_m Partial safety factor according to the regulations of the member states

Recommended value for annealed SCHOTT Fourcault glass: $\gamma_m = 1.8$

Recommended value for thermally toughened SCHOTT Fourcault glass: $\gamma_m = 1.5$

Manufacturing

The basic products of SCHOTT Fourcault glasses are manufactured in the manufacturing plant of the company SCHOTT in Grünenplan, Germany (Plant 1).

The processed products according to Annex B are manufactured in the manufacturing plants that are briefed and listed by the company SCHOTT (Plant 2).

Installation and use

The substructure shall be able to reliably support the load of the pane.

Only cleaning products that are compatible with SCHOTT Fourcault glasses are to be used for cleaning.