



European Technical Approval ETA-12/0159

English translation prepared by DIBt - Original version in German language

Handelsbezeichnung
Trade name

SCHOTT Fourcault Glasses: ARTISTA®, IMERA®, RIVULETTA®,
RESTOVER®, RESTOVER® Light, RESTOVER® Plus, TIKANA®,
Goethe Glass, Black Glass

Zulassungsinhaber
Holder of approval

SCHOTT AG
Architecture + Design
Hattenbergstraße 10
55122 Mainz
DEUTSCHLAND

Zulassungsgegenstand
und Verwendungszweck

*Generic type and use
of construction product*

SCHOTT Fourcault Glasses: ARTISTA®, IMERA®, RIVULETTA®,
RESTOVER®, RESTOVER® Light, RESTOVER® Plus, TIKANA®,
Goethe Glass, Black Glass

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Geltungsdauer:
Validity: vom
from
bis
to

8 May 2012

8 May 2017

Herstellwerk
Manufacturing plant

SCHOTT AG
Hüttenstraße 1
31073 Grünenplan
DEUTSCHLAND

Diese Zulassung umfasst
This Approval contains

9 Seiten
9 pages

I LEGAL BASES AND GENERAL CONDITIONS

- 1 This European technical approval is issued by Deutsches Institut für Bautechnik in accordance with:
 - Council Directive 89/106/EEC of 21 December 1988 on the approximation of laws, regulations and administrative provisions of Member States relating to construction products¹, modified by Council Directive 93/68/EEC² and Regulation (EC) N° 1882/2003 of the European Parliament and of the Council³;
 - *Gesetz über das In-Verkehr-Bringen von und den freien Warenverkehr mit Bauprodukten zur Umsetzung der Richtlinie 89/106/EWG des Rates vom 21. Dezember 1988 zur Angleichung der Rechts- und Verwaltungsvorschriften der Mitgliedstaaten über Bauprodukte und anderer Rechtsakte der Europäischen Gemeinschaften (Bauproduktengesetz - BauPG) vom 28. April 1998⁴, as amended by law of 31 October 2006⁵;*
 - Common Procedural Rules for Requesting, Preparing and the Granting of European technical approvals set out in the Annex to Commission Decision 94/23/EC⁶.
Deutsches Institut für Bautechnik is authorized to check whether the provisions of this European technical approval are met. Checking may take place in the manufacturing plant. Nevertheless, the responsibility for the conformity of the products to the European technical approval and for their fitness for the intended use remains with the holder of the European technical approval.
- 3 This European technical approval is not to be transferred to manufacturers or agents of manufacturers other than those indicated on page 1, or manufacturing plants other than those indicated on page 1 of this European technical approval.
- 4 This European technical approval may be withdrawn by Deutsches Institut für Bautechnik, in particular pursuant to information by the Commission according to Article 5(1) of Council Directive 89/106/EEC.
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- 6 The European technical approval is issued by the approval body in its official language. This version corresponds fully to the version circulated within EOTA. Translations into other languages have to be designated as such.

¹ Official Journal of the European Communities L 40, 11 February 1989, p. 12
² Official Journal of the European Communities L 220, 30 August 1993, p. 1
³ Official Journal of the European Union L 284, 31 October 2003, p. 25
⁴ *Bundesgesetzblatt Teil I 1998*, p. 812
⁵ *Bundesgesetzblatt Teil I 2006*, p. 2407, 2416
⁶ Official Journal of the European Communities L 17, 20 January 1994, p. 34

II SPECIFIC CONDITIONS OF THE EUROPEAN TECHNICAL APPROVAL

1 Definition of the products SCHOTT Fourcalt Glasses: ARTISTA®, IMERA®, RIVULETTA®, Black Glass, RESTOVER®, RESTOVER® Light, RESTOVER® plus, TIKANA® and Goethe Glass and intended use

1.1 Definition of the product

The Fourcalt glasses provided by SCHOTT AG are rectangular glass panes with different colours and surfaces.

The following glass types are covered by this ETA:

- ARTISTA®,
- IMERA®
- RIVULETTA®
- Restoration glasses: RESTOVER®, RESTOVER® Light, RESTOVER® plus, TIKANA® and Goethe Glass
- Black Glass

SCHOTT Fourcalt glasses are manufactured in different dimensions and thicknesses using a special drawing process, the Fourcalt process.

1.1.1 ARTISTA®

ARTISTA® glass is a coloured Fourcalt glass with a structured surface on one side.

1.1.2 IMERA®

IMERA® glass is a coloured Fourcalt glass without a surface structure.

1.1.3 RIVULETTA®

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

1.1.4 Restoration glasses

These glasses are colourless Fourcalt glasses with different irregular surfaces.

1.1.5 Black Glass

Black Glass is a black coloured Fourcalt glass with a fire-polished, unstructured surface.

1.2 Intended use

SCHOTT Fourcalt 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).

Further processing to thermally tempered glass, to laminated and safety glass or to multi-pane insulated glasses is possible, however not the subject of this ETA. Where SCHOTT Fourcalt glasses are to be further processed according to the intended use, further verification of usability shall be provided.

The provisions of this European technical approval are based on an assumed working life of SCHOTT Fourcault glasses of 25 years, provided that the requirements specified in Sections 5.1 and 5.2 are adhered to. 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.

2 Characteristics of SCHOTT Fourcault glasses and methods of verification

2.1 Characteristics

2.1.1 ARTISTA®

SCHOTT Fourcault glass ARTISTA® has the following characteristics:

Characteristic bending strength $f_{t,k} = 30.0 \text{ N/mm}^2$
(5 % quantile at 95 % confidence level)

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	1000	+100 / -200
10.00	± 0.50	2100	± 25	1500	+100 / -200
12.00	± 1.00	2400	± 25	1500	+100 / -200

2.1.2 IMERA®

SCHOTT Fourcault glass IMERA® has the following characteristics:

Characteristic bending strength $f_{t,k} = 30.0 \text{ N/mm}^2$
(5 % quantile at 95 % confidence level)

Dimensions and tolerances:

Thicknesses (mm)	Tolerances (mm)	Length (mm)	Tolerances (mm)	Width (mm)	Tolerances (mm)
2.75	± 0.25	1600	± 25	1500	+100 / -200
5.00	± 0.50	2100	± 25	1500	+100 / -200
6.00	± 0.50	2400	± 25	1500	+100 / -200
8.00	± 0.50	2400	± 25	1500	+100 / -200

2.1.3 RIVULETTA®

SCHOTT Fourcault glass RIVULETTA® has the following characteristics:

Characteristic bending strength $f_{t,k} = 30.0 \text{ N/mm}^2$
(5 % quantile at 95 % confidence level)

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	1800	± 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

2.1.4 Restoration glasses: RESTOVER®, RESTOVER® Light, RESTOVER® plus, TIKANA® and Goethe Glass

These SCHOTT Fourcault glasses have the following characteristics:

Characteristic bending strength $f_{t,k} = 30.0 \text{ N/mm}^2$

(5 % quantile at 95 % confidence level)

Dimensions and tolerances for RESTOVER®, RESTOVER® Light:

Thicknesses (mm)	Tolerances (mm)	Max length (mm)	Tolerances (mm)	Max width (mm)	Tolerances (mm)
2.75	± 0.25	1600	± 25	1500	± 25

Dimensions and tolerances for RESTOVER® plus:

Thicknesses (mm)	Tolerances (mm)	Max length (mm)	Tolerances (mm)	Max width (mm)	Tolerances (mm)
2.95	± 0.35	1600	± 25	1500	± 25

Dimensions and tolerances for TIKANA®:

Thicknesses (mm)	Tolerances (mm)	Max length (mm)	Tolerances (mm)	Max width (mm)	Tolerances (mm)
4.00	± 0.25	2400	± 25	1600	± 25
6.00	± 0.50	2900	± 25	1600	± 25

Dimensions and tolerances for Goethe Glass:

Thicknesses (mm)	Tolerances (mm)	Max length (mm)	Tolerances (mm)	Max width (mm)	Tolerances (mm)
4.50	± 0.50	2100	± 25	1500	± 25
8.00	± 0.50	2200	± 25	1500	± 25

2.1.5 Black Glass

SCHOTT Fourcault glass Black Glass has the following characteristics:

Characteristic bending strength $f_{t,k} = 30.0 \text{ N/mm}^2$

(5 % quantile at 95 % confidence level)

Dimensions and tolerances:

Thicknesses (mm)	Tolerances (mm)	Max length (mm)	Tolerances (mm)	Max width (mm)	Tolerances (mm)
3.15	± 0.35	1810	± 25	800	± 25
3.75	± 0.25	1810	± 25	800	± 25
6.00	± 0.50	1760	± 25	800	± 25
8.00	± 0.50	1760	± 25	800	± 25

2.2 Verifications

Assessment of usability was conducted in compliance with Section 3.2 of the Common Procedural Rules for Requesting, Preparing and the Granting of European technical approvals set out in the Annex to Commission Decision 94/23/EC.⁶

In those cases where classifications and/or decision options are permitted, the following performances were found:

ER 2 SAFETY IN CASE OF FIRE

SCHOTT Fourcault glasses meet the requirements for Class A1 according to DIN EN 13501-1 according to the decision of the commission 96/603/EC (amended version)⁷.

Note: A European reference fire scenario for façades has not been laid down. In some Member States, the classification of SCHOTT Fourcault glasses according to EN 13501-1:2007+A1:2009 might not be sufficient for the use in façades. An additional assessment of SCHOTT Fourcault glasses according to national provisions (e.g. on the basis of a large scale test) might be necessary to comply with Member State regulations, until the existing European classification system has been completed.

ER 3 HYGIENE, HEALTH AND THE ENVIRONMENT

The European technical approval is issued for the product on the basis of agreed data/information, deposited with *Deutsches Institut für Bautechnik*, which identifies the product that has been assessed and judged. The chemical composition of the glasses shall comply with the composition lodged at *Deutsches Institut für Bautechnik*. Changes to the product or production process, which could result in this deposited data/information being incorrect, should be notified to *Deutsches Institut für Bautechnik* before the changes are introduced. *Deutsches Institut für Bautechnik* will decide whether or not such changes affect the approval and consequently the validity of the CE marking on the basis of the approval and if so whether further assessment or alterations to the approval shall be necessary.

Note: In addition to the specific clauses relating to dangerous substances contained in this European technical approval, there may be other requirements applicable to the products falling within its scope (e.g. transposed European legislation and national laws, regulations and administrative provisions). In order to meet the provisions of the Construction Products Directive, these requirements need also to be complied with, when and where they apply.

ER 4 SAFETY IN USE

The tests for assessing SCHOTT Fourcault glasses with respect to bending strength were passed.

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

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

$f_{t,k}$ Characteristic bending strength (see section 2.1.1 to 2.1.6)

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

Note: This value should be stated as the NDP (national determined parameter).

ER 5 PROTECTION AGAINST NOISE

Within the framework of the awarded ETA, no verification of noise insulation characteristics was made. Verifications concerning noise protection are subject to the regulations of the member states.

ER 6 ENERGY ECONOMY AND HEAT RETENTION

Verification with respect to heat retention and energy economy of glazing structures using SCHOTT Fourcault glasses shall be conducted on an individual case basis. The regulations of the member states apply.

⁷

Official Journal of the European Communities/Union L 267 of 19/10/1996 last amended by 2003/424/EG of 6/06/03 in Official Journal of the European Communities L 144 of 12/06/03

3 Evaluation and attestation of conformity and CE marking

3.1 System of attestation of conformity

According to the communication of the European Commission⁸ the system 3 of the attestation of conformity applies Decision 2000/245/EC⁹ of the European Commission, supplemented by the Decision 2001/596/EC¹⁰.

In addition to the above decision, system 4 of the attestation of conformity applies with regard to reaction to fire.

These systems of attestation of conformity are defined as follows:

System 3: Declaration of conformity of the product by the manufacturer on the basis of:

- (a) Tasks for the manufacturer:
 - (1) factory production control;
- (b) Tasks for the approved body:
 - (2) initial type-testing of the product.

System 4: Declaration of conformity of the product by the manufacturer on the basis of:

Tasks for the manufacturer:

- (1) initial type-testing of the product;
- (2) factory production control.

Note: Approved bodies are also referred to as "notified bodies".

3.2 Responsibilities

3.2.1 Tasks for the manufacturer

3.2.1.1 Factory production control

The manufacturer shall exercise permanent internal control of production. All the elements, requirements and provisions adopted by the manufacturer shall be documented in a systematic manner in the form of written policies and procedures, including records of results performed. This production control system shall insure that the product is in conformity with this European technical approval.

The manufacturer may only use initial/raw materials stated in the technical documentation of this European technical approval.

The factory production control shall be in accordance with the control plan which is part of the technical documentation of this European technical approval. The control plan is laid down in the context of the factory production control system operated by the manufacturer and deposited with *Deutsches Institut für Bautechnik*.¹¹

The results of factory production control shall be recorded and evaluated in accordance with the provisions of the control plan.

⁸ Letter of the European Commission of 03/07/2008 to EOTA

⁹ Official Journal of the European Communities/Union L 77/13 of 28/03/2000

¹⁰ Official Journal of the European Communities L 209/33 of 2.8.2001

¹¹ The control plan is a confidential part of the European technical approval and only handed over to the approved bodies involved in the procedure of attestation of conformity. See section 3.2.2.

3.2.1.2 Other tasks for the manufacturer

The manufacturer shall, on the basis of a contract, involve bodies which are approved for the tasks referred to in section 3.1 in the field of SCHOTT Fourcault glasses in order to undertake the actions laid down in section 3.2.2. For this purpose, the control plan referred to in sections 3.2.1.1 and 3.2.2 shall be handed over by the manufacturer to the approved bodies involved.

The manufacturer shall make a declaration of conformity, stating that the construction product is in conformity with the provisions of this European technical approval.

3.2.2 Tasks for the approved bodies

The approved bodies shall perform the

- initial type-testing of the product

in accordance with the provisions laid down in the control plan.

The approved bodies shall retain the essential points of their actions referred to above and state the results obtained and conclusions drawn in a written report.

3.3 CE marking

The CE shall be affixed to the packaging or to the accompanying commercial documents. The letters "CE" shall be followed by the identification number of the approved certification body, where relevant, and be accompanied by the following additional information:

- the name and address of the producer (legal entity responsible for the manufacture),
- the last two digits of the year in which the CE marking was first affixed,
- the number of the European technical approval,
- characteristic bending strength $f_{t,k}$,
- thickness.

4 Assumptions under which the fitness of the products for the intended use was favourably assessed

4.1 Manufacturing

Schott Fourcault glasses are manufactured according to the regulations of the European technical approval, whereby the production process specified in the technical documentation is used.

The European technical approval is issued for the product on the basis of agreed data/information, deposited with *Deutsches Institut für Bautechnik*, which identifies the product that has been assessed and judged. Changes to the product or production process, which could result in this deposited data/information being incorrect, should be notified to *Deutsches Institut für Bautechnik* before the changes are introduced. *Deutsches Institut für Bautechnik* will decide whether or not such changes affect the approval and consequently the validity of the CE marking on the basis of the approval and if so whether further assessment or alterations to the approval shall be necessary.

4.2 Installation

The substructure shall be able to reliably support the load of the pane. Damaged panes shall be replaced immediately.

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5 Indications to the manufacturer

5.1 Packaging, transport and storage

The edges of SCHOTT Fourcault glasses shall be reliably protected during transport and storage. Damaged panes shall be replaced immediately.

5.2 Use, maintenance, repair

Only cleaning products that are compatible with SCHOTT Fourcault glass are to be used for cleaning the glazing.

Damaged panes shall be replaced immediately.

Georg Feistel
Head of Department

beglaubigt:
Zillmann