

QM 345

# Certification scheme

## Hardware

### as per EN 13126-15:2019



#### Product quality

Sliding folding hardware (QM 345)  
EN 13126-15:2019

No. 228FS XXX

## 1 Basis

### 1.1 Purpose and scope

This certification scheme defines the requirements and procedure for the certification of horizontal sliding and folding sliding hardware according to EN 13126-15:2019 in the classes H1, H2 and H3. The test sequences of EN 1191:2012 are taken into account.

Introduction and application of the specified provisions and tests ensure the sustainability of the characteristics of the hardware demonstrated during initial type testing. The specified requirements go beyond the provisions of EN 13126-15:2019 and are thus an additional quality feature. This is documented by affixing the "ift-certified" mark to the hardware.

Hardware certified and monitored by this certification scheme fulfils the requirement for horizontal sliding and folding sliding hardware set out by RAL-GZ 695:2016 (Quality regulations and test specifications for windows, external pedestrian doorsets, facades and conservatories) and RAL-GZ 716:2013 (Quality regulations and test specifications for PVC window profile systems).

Information on the interchangeability of hardware in building components as per EN 14351-1:2006+ A2:2016 is given in Annex 1 and Annex 3.

### 1.2 Basis of testing and certification

This Certification Scheme defines the requirements for certification and surveillance of hardware governed by EN 13126-15:2019. For certification and surveillance of hardware, ift-Q-Zert must be provided with the following evidence:

- Test reports according to EN 13126-15:2019
- Verification is optionally possible on the basis of the combination test as specified in Annex 2
- All test reports and evidence/verifications documents shall be issued by a testing body accredited to EN ISO/IEC 17025 and recognised by ift-Q-Zert
- Product documentation for the intended purpose and/or use (building designs/shapes, casement/sash weights, sizes, frame material) of hardware,
- Documentation of the mandatory factory production control
- Contract with ift-Q-Zert on certification and surveillance of production of the products governed by EN 13126-15:2019
- Consideration of the requirements to be fulfilled by bodies certifying products, processes and services in accordance with EN ISO/IEC 17065

### 1.3 Use of historical data

For hardware systems which are certified according to QM 345 in its 2018-01-01 version, the underlying test evidences can be used for evaluation according to 1.2 of the current version. The classes to be evaluated as achieved are shown in the following correlation table:

Table 1 Correlation table

| Previous evidences according to QM 345:2018 |               | Evidence/verification - current version |
|---|---------------|---|
| EN 13126-15:2008                            | EN 12400:2003 | EN 13126-15:2019                        |
| Class 3                                     | Class 2       | Class H2 (10,000 cycles)                |
| Class 4                                     | Class 2       |   |
| Class 5                                     | Class 3       | Class H3 (20,000 cycles)                |

### 1.4 Terms and definitions

#### 1.4.1 Owner of test report

Organisation which commissions a testing body with identifying or testing specific or more than one product characteristic of a product/component and receives from the testing body evidence of performance/a report of the results obtained.

#### 1.4.2 Production site/manufacturer

Organisation which manufactures/further processes products/components/building materials.

#### 1.4.3 Hardware system

Sliding folding hardware for windows and casement doors and rollers for horizontal sliding windows and casement doors.

#### 1.4.4 Product

Under the present certification scheme, product is defined as a hardware system that is distributed on the basis of the specifications provided by the manufacturer.

#### 1.4.5 Measurement point of reference velocity

The speed of the moving casement/sash is measured at the respective closing edge of the casement/sash (casement/sash outer edge).

## **2 Procedure and contents of certification**

The general procedure and the contents of the measures required for initial certification and renewal of certification are documented by ift-Q-Zert in the applicable "General requirements for certification, surveillance and inspection of products and services". The specifications defined in the following refer only to hardware systems.

### **2.1 Certification procedure**

- Conclusion of a certification and surveillance contract
- Definition of the scope of product certification/certificate
- Description of the product as per Annex 5 (component sheet) by the applicant
- Evaluation of test evidence/reports and product documentation,
- Initial type test/s, as necessary
- Positive initial inspection
- Certification

## **3 Type testing**

### **3.1 Test evidence / reports**

Type testing of a hardware system requires presentation of test evidence/reports as set out in Clause 1.2. All test evidence/reports must be based on the maximum casement/sash weight specified by the hardware manufacturer.

For evaluation of the documents, ift-Q-Zert may rely on further documentation provided by an ift recognised testing body.

In addition, a reference sample of the hardware with casement/sash and frame parts is to be formed and made available. The reference samples are to be deposited with the commissioning testing body for the duration of the test evidence/report.

## **4 Initial audit**

The objective of the initial inspection is to check the personnel and manufacturing conditions for manufacturing hardware on the basis of this certification scheme. Initial inspection includes the evaluation of the existing factory production control.

## **5 Product certificate**

### **5.1 Validity of the certificate**

The product certificate is issued for a period of 5 years.

Recertification is possible for an extension of validity by further 5 years. As part of the recertification, ift-Q-Zert shall evaluate the available test evidence/reports of the hardware system.



If all certification requirements have been passed, the certificate will be renewed for a period of another 5 years.

The procedure for modifying or extending the certified scope as well as the suspension and revocation of certification is specified by ift-Q-Zert in the applicable "General requirements for certification, surveillance and inspection of products and services".

The certificate remains valid only as long as the provisions and requirements of this certification scheme as well as the product as such remain unchanged. Any changes to the product that have an effect on the characteristics verified by the initial type test, shall be communicated to the certification body without being asked.

In case of failure to comply with the provisions and measures specified by this certification scheme, the certificate as well as the right of affixing the mark to the respective products, will be withdrawn.

## 5.2 Marking

The products can be marked by affixing the "ift-certified" mark. The applicable documents listed in Section 2 - procedure and contents of certification - shall be observed. In addition to applying the mark on shipping documents, catalogues, technical documentation, advertising documents or packaging, marking may also be in a digital format.

The right of affixing the quality mark expires automatically by terminating the certification and surveillance contract or in the event of non-compliance with the criteria laid down by this certification scheme.

## 6 Factory production control

### 6.1 General

The hardware manufacturer undertakes to establish a system of factory production control to assure consistent hardware characteristics. The manufacturer shall name an employee responsible for certification who has the authority, knowledge and experience in the hardware production process. This employee is responsible for due implementation of factory production control. If unallowed non-conformities are detected during factory production control, the person responsible for factory production control shall immediately initiate measures to eliminate such non-conformities or defects.

Factory production control includes the following mandatory inspections/tests:

- Material control/control of incoming goods
- Production control
- Inspection of marking

Suitable equipment and devices shall be provided for performing factory production control.

## **6.2 Material control/control of incoming goods**

The following shall be observed for material control/control of incoming goods:

- Material - control of incoming goods
- Rollers - control of incoming goods
- Inspection of assemblies for dimensional accuracy
- Control of smooth operation of moving assemblies

Declarations of compliance with the order as per EN 10204:2005, at least as per Clause 2.1 or acceptance certificates as per EN 10204:2005, Clause 3.1 are permitted.

## **6.3 Production control**

Production control to assure consistent hardware characteristics shall be carried out and documented adequately, at least in accordance with ISO 2859-1:1999 + Cor. 1:2001 + Amd. 1:2011, S2, AQL 1.5

The following shall be observed for production control:

- Inspection of assemblies for dimensional accuracy
- Smooth operation of moving assemblies

### **6.3.1 Durability test**

The durability test shall be performed and documented at least once a year. The requirements of EN 13126-15:2019, Clause 7.3 must be fulfilled (without additional tests).

### **6.3.2 Corrosion protection**

Compliance with the requirements for corrosion protection as per EN 13126-15:2019 Clause 7.6 shall be demonstrated at least every 3 months on the basis of corrosion tests or the respective provisions set out in 6.2.

## **6.4 Inspection of marking**

Marking shall be in conformity with EN 13126-15:2019 Clause 8.

## **7 Third party control**

### **7.1 General**

Contents, rights and duties are described by ift-Q-Zert in the applicable relevant documents "General requirements for certification, surveillance and inspection of products and services".

## **7.2 Regular inspection/audit of monitored site**

### **7.2.1 Intervals and contents**

The third-party audit is performed twice a year in the form of a regular site inspection at the monitored location (production site or sales organisation)

If manufacturers operate a certified QM-system as per standard series EN ISO 9001, the regular audit/inspection may be performed only once a year and comprises the following:

- Audit/inspection of factory production control
- Checking of staff qualifications and manufacturing conditions
- Inspection for any obvious defects of the measuring instruments used as well as verification of availability of valid certificates referring to calibration and service/maintenance of the measuring instruments. Inspections of measuring instruments must be documented.
- Inspection of procedure to record and handle customer complaints

### **7.2.2 Surveillance report**

An audit report is prepared on the findings of the regular audit/inspection. If one or more measured values are beyond the specified limit values, the cause of the non-conformity must be identified and eliminated at short term. After elimination of defects, the certification body decides whether additional quality assurance measures are required (e.g. a special audit/inspection).

### **7.2.3 Elimination of defects/non-conformities - Special audit**

Special audits may become necessary as a consequence of:

- negative evaluation of a regular audit or
- complaints received from the market about the certified products

### **7.2.4 Deadlines to remedy defects/non-conformities**

As a rule, the deadline provided for discharge of nonconformities detected during the regular audit should not exceed one month. The deadline provided for discharge of nonconformities detected during the special audit shall be 3 months (as regards the conditions for special audits, refer to "General requirements for product certification").

**Annex 1: Rules for the interchangeability of hardware systems certified under this Scheme in building components as per EN 14351-1:2006 + A2:2016**

| N°  | Characteristic                          | Rules  | Interchangeability                                       |
|-----|---|--|--|
| 1.  | Resistance to wind load                 | Comparative test on calibrated test rig; test size in accordance with original initial type test (ITT) | Yes, for positive results; same or better grades         |
| 2.  | Resistance to snow load                 | none   | no   |
| 3.  | Reaction to fire                        | none   | no   |
| 4.  | Resistance to external fire             | none   | no   |
| 5.  | Watertightness                          | Comparative test on calibrated test rig; test size in accordance with original initial type test (ITT) | Yes, for positive results; same or better grades         |
| 6.  | Dangerous substances                    | none   | no   |
| 7.  | Impact resistance                       | Comparative test on test rig; test size in accordance with original initial type test (ITT)            | Yes, for positive results; same or better grades         |
| 8.  | Load-bearing capacity of safety devices | Comparative test   | Yes, for positive results                                |
| 9.  | Ability to release                      | none   | no   |
| 10. | Acoustic insulation                     | Yes, under observation of n° 13  | yes  |
| 11. | Thermal transmittance                   | without influence  | yes  |
| 12. | Radiation properties                    | without influence  | yes  |
| 13. | Air permeability                        | Comparative test on calibrated test rig; test size in accordance with original initial type test (ITT) | Yes, for positive results; same or better grades         |
| 14. | Operating forces                        | Comparative test on calibrated test rig; test size in accordance with original initial type test (ITT) | Yes, for positive results; same or better grades         |
| 15. | Mechanical resistance                   | yes  | Yes, for comparable fixing of loadbearing hardware parts |
| 16. | Ventilation                             | without influence  | yes  |
| 17. | Bullet resistance                       | none   | no   |
| 18. | Explosion resistance                    | none   | no   |
| 19. | Mechanical durability                   | yes  | Yes, see Annex 3 / 4                                     |
| 20. | Behaviour between different climates    | without influence  | yes  |
| 21. | Burglar resistance                      | none   | no   |

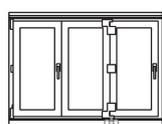
## Annex 2: Combination test as per QM 345 - informative

If a manufacturer requires both verifications according to EN 13126-15:2019 and EN 1191:2012, the two tests can be combined as described below. After successful testing of the combination, test reports or a summary test report can then be issued for both European standards.

### Combination of tests according to EN 13126-15:2019 and EN 1191:2012

- Test sizes as specified in EN 13126-16:2019, Clause 4.5 – scheme 330

#### Schema 330



- Testing shall be on the basis of the maximum casement/sash weight specified by the hardware manufacturer.
- The materials used for test specimens may be timber, PVC, aluminium or a combination of these materials. The fixing system shall be selected in accordance with the material used and shall be documented.
- The casement/sash weight is set by using glazing of corresponding weight and setting blocks, as specified. Optionally, a sufficiently rigid timber-based panel, PVC panel, steel panel or timber-based composite panel with additional weights may be used as per EN 13126-15:2019.
- Reference velocity is always determined on the respective external casement/sash edges.
- The test specimen shall be equipped with the sealing system planned for the intended use.
- Preparation of the test specimen, execution of the test and documentation as well as the acceptance criteria according to EN 13126-15:2019 and EN 1191:2012.

### Additional tests as per EN 13126-15:2019

After completion of the durability test, additional tests are required as per EN 13126-15:2019:

- Additional loading test as per Clause 7.4
- Static endurance test at ambient temperature as per Clause 7.5.
- Corrosion resistance test as per Clause 7.6
- Relevant failure criteria as per EN 13126-15:2019

### **Annex 3: Interchangeability of hardware - Durability (Annex 1, Section 19)**

- The hardware systems must fulfil all requirements of this Certification Scheme.
- The hardware and fixing systems must be technically comparable\*.
- The performance characteristics (permissible casement/sash weight and number of cycles) of the hardware system to be replaced must be at least equivalent to the hardware system subjected to the initial type test as per EN 14351-1:2006 + A2:2016.
- In the case of extrapolation for casement/sash sizes other than those tested, the maximum support forces determined during the initial type test must not be exceeded.

Subject to conformity with these rules, certified hardware systems of building components for which evidence as per EN 1191:2000 or EN 1191:2012 has already been provided, may be replaced in accordance with EN 14351-1:2006 + A2:2016.

\*The term technical comparability of hardware systems is understood as the equivalence of certified hardware in terms of intended use (PVC profiles and/or timber profiles and/or aluminium profiles and/or a combination of materials) and maximum possible casement/sash weight. Technical comparability exists if the values of both characteristics are the same.

## Annex 4: Extrapolation of results for dimensions and schemes - Durability (Annex 1, Section 19)

The test results as per EN 13126-15:2019 are generally carried out in scheme 330 and can be extrapolated for hardware systems of the schemes given in the following:

### Schema 220

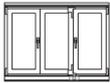


2 Falflügel  
0 Durchgangsfügel<sup>1)</sup>

**Hinweis:** Sämtliche Schemata können auch spiegelbildlich ausgeführt werden.

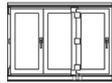
1) Durchgang durch 1. Falflügel  
2) z. B. As = Punkt A spiegelbildlich usw.

### Schema 321



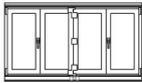
2 Falflügel  
1 Durchgangsfügel

### Schema 330



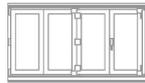
3 Falflügel  
0 Durchgangsfügel<sup>1)</sup>

### Schema 431



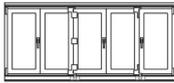
3 Falflügel  
1 Durchgangsfügel

### Schema 440



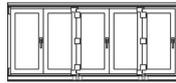
4 Falflügel  
0 Durchgangsfügel<sup>1)</sup>

### Schema 541



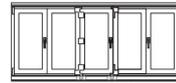
4 Falflügel  
1 Durchgangsfügel

### Schema 550



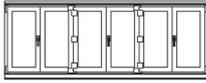
5 Falflügel  
0 Durchgangsfügel<sup>1)</sup>

### Schema 532



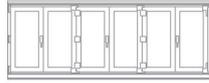
3+2 Falflügel  
0 Durchgangsfügel<sup>1)</sup>

### Schema 651



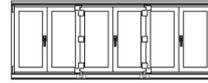
5 Falflügel  
1 Durchgangsfügel

### Schema 660



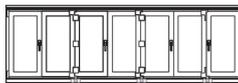
6 Falflügel  
0 Durchgangsfügel<sup>1)</sup>

### Schema 633



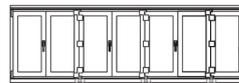
3+3 Falflügel  
0 Durchgangsfügel<sup>1)</sup>

### Schema 761



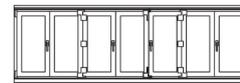
6 Falflügel  
1 Durchgangsfügel

### Schema 770



7 Falflügel  
0 Durchgangsfügel<sup>1)</sup>

### Schema 743



4+3 Falflügel  
0 Durchgangsfügel<sup>1)</sup>

## Annex 5: Component sheet - model form

### Presentation and structure

|              |                                     |                                |
|--------------|-------------------------------------|--------------------------------|
| Company logo | <b>Manufacturer</b>                 |                                |
|              | <b>Type</b>                         |                                |
|              | <b>Type of opening</b>              | Fold&Slide                     |
|              | <b>Maximum locking distance</b>     | xxx mm                         |
|              | <b>Maximum casement/sash weight</b> | xxx kg                         |
|              |                                     | (observe application diagrams) |

### Notes on processing

Observe product documentation and specifications of **COMPANY**.

|   |   |
|---|---|
| <b>Fixing of hardware</b>                 | <ul style="list-style-type: none"> <li>- When screwing into place, observe specifications of the hardware manufacturer for screw-in angle, screw position, screw-in torque, drillings, routing details, milling and screw patterns.</li> <li>- When fixing the hardware parts to the face of the casement/sash, adjust fixing method to the design.</li> <li>- Observe processing instructions of screw manufacturer, in particular with respect to the timber species used.</li> </ul> |
| <b>Corrosion protection of hardware</b>   | <ul style="list-style-type: none"> <li>- Measures to protect hardware during the construction phase.</li> <li>- Observe and follow service/maintenance recommendations.</li> </ul>  |
| <b>Guidelines / rules and regulations</b> | <p>Observe the following guidelines for windows and casement doors issued by "Gütegemeinschaft Schlösser und Beschläge e.V."(Quality Assurance Association for locks and hardware):</p> <ul style="list-style-type: none"> <li>- VHBE "Specifications and Guidance for End Users"</li> <li>- VHBH "Specifications/Guidance on the Product and Product Liability"</li> </ul>   |

### Factory production control

|   |   |
|---|---|
| <b>Material control/control of incoming goods</b> | <ul style="list-style-type: none"> <li>- Upon receipt, check goods for obvious defects by visual inspection.</li> <li>- Check shipping documents of the incoming goods for conformity with the order specifications.</li> </ul>   |
| <b>Conditioning</b>                               | <ul style="list-style-type: none"> <li>- Store hardware parts at a dry and protected place and on a flat surface.</li> </ul>  |
| <b>Production control</b>                         | <ul style="list-style-type: none"> <li>- Ensure suitability of fasteners used and completeness of screw connections.</li> <li>- Observe product documentation and installation instructions given by the hardware manufacturer.</li> </ul>  |
| <b>Control of finished product</b>                | <ul style="list-style-type: none"> <li>- Check functionality of hardware</li> <li>- Check due engagement of hardware parts in strike plates/locking devices under consideration of the air gap</li> <li>- Check operating torque</li> <li>- Check maximum permissible locking distance</li> </ul> |