

# Certification scheme for hardware in accordance with EN 13126-8:2017



<b>1</b>	<b>Basis</b>	<b>3</b>
1.1	Objective and scope	3
1.2	Basis of testing and certification	3
1.3	Use of historical data	4
1.4	Terms and definitions	4
<b>2</b>	<b>Procedure and contents of certification</b>	<b>4</b>
2.1	Certification procedure	4
<b>3</b>	<b>Initial type test</b>	<b>5</b>
3.1	Evidence/verification	5
<b>4</b>	<b>Initial inspection</b>	<b>5</b>
<b>5</b>	<b>Product certificate</b>	<b>5</b>
5.1	Validity of the certificate	5
5.2	Marking	6
<b>6</b>	<b>Factory production control</b>	<b>6</b>
6.1	General	6
6.2	Material control/inspection of incoming goods	6
6.3	Production control	7
6.4	Inspection of the marking	7
<b>7</b>	<b>Third-party control/surveillance</b>	<b>8</b>
7.1	General	8
7.2	Regular inspection/audit of the monitored site	8
	<b>Annex 1: Rules for the interchangeability of hardware systems certified under this Scheme in building components as per EN 14351-1:2006 + A2:2016</b>	<b>10</b>
	<b>Annex 2: Combination test in accordance with QM 328 – informative</b>	<b>11</b>
	<b>Annex 3: Interchangeability of hardware - Durability (Annex 1, Section 19)</b>	<b>12</b>

## 1 Basis

### 1.1 Objective and scope

This Certification Scheme defines the requirements and procedure for the certification of hardware in accordance with EN 13126-8:2017 for the grades H1, H2 or H3. The test sequences according to EN 1191:2012 are considered.

By implementation and use of the specified procedures and tests, the characteristics verified during the initial type test are permanently ensured. The specified requirements are higher than the requirements set out in EN 13126-8:2017, representing a further quality characteristic. This is documented by affixing the “ift-certified”-mark to the hardware.

Hardware certified and monitored in accordance with this Certification Scheme fulfils the requirements for side-hung and tilt-and-turn hardware according to RAL-GZ 695:2016 (Windows, facades and external pedestrian doorsets – Quality assurance RAL-GZ 695) and RAL-GZ 716:2013 (PVC window profile systems – Quality assurance RAL-GZ 716) .

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

### 1.2 Basis of testing and certification

This Certification Scheme lays down the requirements for the certification and monitoring of hardware covered by EN 13126-8:2017. For certification and monitoring/surveillance of hardware the following shall be verified and/or submitted to ift-Q-Zert:

- Test reports in accordance with EN 13126- 8:2017.
- Alternatively, verification is possible in accordance with the combination test specified in Annex 2.
- All test reports and verifications must be issued by a testing laboratory accredited to EN ISO/IEC 17025 and recognised by ift-Q-Zert,
- Product documentation with application diagrams for the intended use and/or application (shapes, sash weights, sizes, frame material) of the hardware,
- Documentation of the mandatory factory production control,
- A certification and surveillance contract with ift-Q-Zert for the production of products covered by EN 13126- 8:2017,
- Consideration of “Beschlussbuch“ (Resolution Guide) referring to the ift-Certification Scheme QM 328 in its currently applicable version, as well as of the requirements for bodies certifying products, processes and services in accordance with EN ISO/IEC 17065.

### 1.3 Use of historical data

For assessment in accordance with Section 1.2 of the currently applicable QM 328 version, hardware systems certified according to the version 2014-05-01 of QM 328, can be certified on the basis of the underlying test evidence. In the case of compliance with the requirements set out in EN 13126-8:2017 – Clause 5.4.1 "Sash operation tolerance", of 100 N, all requirements of the new grade H2 of EN 13126-8:2017 are fulfilled.

### 1.4 Terms and definitions

#### 1.4.1 Owner of test report

Organisation that commissions a testing body to determine and/or test one or more product/building component characteristics, and receives verifications/test reports from the testing body.

#### 1.4.2 Production site/manufacturer

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

#### 1.4.3 Hardware system

Tilt&Turn, Tilt-First and Turn-Only hardware components or hardware sets for windows and door height windows.

#### 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 speed

The speed of the moving sash is measured at the corresponding closing edge of the sash (external edge of sash).

## 2 Procedure and contents of certification

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

### 2.1 Certification procedure

- Signature of a certification and surveillance contract,
- Definition of the scope of product certification/certificate,
- Evaluation of test evidence/reports and product documentation,
- If applicable, the required initial type test(s),
- Positive initial inspection,
- Certification.

### **3 Initial type test**

#### **3.1 Evidence/verification**

Initial type testing of a hardware system requires presentation of test evidence/reports as set out in Section 1.2. All test evidence/reports must be based on the maximum sash weights specified by the hardware manufacturer, and essentially rely on the appropriate test sizes defined in EN 13126-8:2017.

In order to evaluate the documents, ift-Q-Zert may rely on further documentation from an ift-recognised testing body.

Additionally, a reference sample with sash and frame parts shall be prepared and made available. The reference sample shall be deposited with the commissioned testing body for the duration of the verification/test report for a maximum of 10 years.

### **4 Initial inspection**

The objective of the initial inspection is to check the personnel and manufacturing technology conditions for manufacturing hardware according to this Certification Scheme. The initial inspection includes 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.

Re-certification is required for renewing the validity of the certificate for another 5 years. In the framework of re-certification the existing documentary evidence of performance of the hardware system shall be evaluated by ift Q-Zert. In case of positive assessment of the certification requirements, the certificate is issued for another five years.

As a rule, the verification/evidence of performance underlying the certification shall be renewed after 10 years, also in the period between the re-certifications.

The procedure for modifying and/or extending the certified scope, as well as the suspension and withdrawal 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 however 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 factory production control system ensuring consistent hardware characteristics. The manufacturer shall nominate an employee responsible for certification who has the suitable authority, knowledge and experience in the hardware production process. This employee is responsible for the proper 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 nonconformities and/or defects.

Factory production control includes the following mandatory inspections/tests:

- Material control/inspection of incoming goods,
- Production control,
- Inspection of the marking.

In order to implement the factory production control, suitable facilities and equipment must be available. For the samples quantity, an AQL-value (Acceptance Quality Limit) of at least 1.5 in the S2 list of samples in accordance with ISO 2859-1:1999 + Cor. 1:2001 + Amd.1:2011 is applicable.

### 6.2 Material control/inspection of incoming goods

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

- Material control of incoming goods,
- Mechanical strength test documentation (corner pivot/stay bearing),
- Dimensional accuracy check of assemblies,
- Smooth operation of espagnolettes/corner drives.

Factory certificates of compliance in accordance with EN 10204:2004, at least in accordance with Section 2.1 or acceptance test certificates in accordance with EN 10204:2004, Clause 3.1, are permitted in this context.

### 6.3 Production control

Production control to assure consistent hardware characteristics of the hardware shall be carried out at least in accordance with ISO 2859-1:1999 + Cor. 1:2001 + Amd.1:2011, S2, AQL 1,5 and documented accordingly.

The following shall be observed for production control:

- Mechanical strength test documentation (corner pivot/stay bearing),
- Dimensional accuracy testing of assemblies,
- Smooth operation of espagnolettes/corner drives.

#### 6.3.1 Durability test

The durability test shall be carried out and documented at least once per year. The requirements of EN 13126-8:2017, Clause 7.6 shall be fulfilled.

If the size specified for a defined hardware combination in the test matrix refers to both a window and a door-height window, the different sizes shall be tested on an alternating yearly basis in the context of the factory production control.

Consequently, each item, i.e. each defined hardware combination listed in the test matrix, shall be subjected to only one annual test in the context of the factory production control.

The following additional tests as per EN 13126-8:2017 shall be conducted in the context of the factory production control every two years:

- Additional load test of 1.000 N,
- Reveal test,
- Rebate hindrance test.

If the size specified for a defined hardware combination listed in the test matrix, refers to both a window and a door-height window, these additional tests conducted in the context of the factory production control shall always be carried out on the window size.

#### 6.3.2 Corrosion protection

Compliance with the requirements for corrosion protection as per EN 13126-8:2017, Clause 5.7 shall be demonstrated by corrosion tests at least every 3 months, or by fulfilling the provisions set out in Section 6.2.

### 6.4 Inspection of the marking

The marking shall be in conformity with EN 13126-8:2017, Clause 8.

## **7 Third-party control/surveillance**

### **7.1 General**

Contents, conditions, rights and duties are described by ift-Q-Zert in the “General requirements for certification, surveillance and inspection of products and services”.

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

#### **7.2.1 Intervals and contents**

The third party audit shall be carried out twice a year in the form of a regular site inspection at the monitored location (production site or sales organisation).

For hardware manufacturers operating a certified QM-system in accordance with the series of standards EN ISO 9001, the regular audit/inspection may be performed only once per year and consists of:

- Audit/inspection of factory production control,
- Inspection of staff qualifications and manufacturing conditions,
- Inspecting the measuring equipment in use for obvious defects, as well as inspecting the measuring equipment’s valid calibration and maintenance documentation. Inspection of the measuring equipment shall be documented,
- Inspection of the procedure to record and handle customer complaints.

#### **7.2.2 Sampling**

During every regular audit/inspection, representative hinges are selected from the running production or warehouse on a random basis for inspection and tested in accordance with EN 13126-8:2017, Clause 5.2.2. It shall be ensured that sampling can be carried out on the day of the regular audit/inspection. In exceptional cases, where there is no possibility for sampling due to production reasons, the manufacturer shall take samples from the next production batch and forward these to the certification body. The samples shall be labelled clearly with a short code depicting the responsible staff member who selected the sample. Sampling shall however be carried out from the running production or warehouse during the next regular audit/inspection visit.

#### **7.2.3 Audit report**

The results of the regular audit/inspection shall be summarised in an audit report. Should one or more of the measured values be beyond the specified limit values, the cause of the non-conformity must be identified and corrective action taken at short notice. After having eliminated the defect, the certification body decides whether additional quality assurance measures are necessary (for example, a special audit/inspection).

#### **7.2.4 Elimination of defects/non-conformities – special audit**

Special audits/inspections may become necessary as a result of:

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

#### **7.2.5 Deadlines to eliminate defects/non-conformities**

The deadline to eliminate non-conformities/defects detected during the regular audit/inspection should, as a rule, not exceed one month. The deadline to eliminate non-conformities/defects detected during the special audit/inspection shall be 3 months (refer to the “General requirements for certification, surveillance and inspection of products and services” for the special audit conditions).



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

No.	Characteristics	Rules	Interchangeability
1	Resistance to wind load	Comparative test on calibrated test rig, test size in accordance with original ITT	Yes, if the results are positive; same grade or better
2	Resistance to snow and permanent load	Non-existent	No
3	Reaction to fire	Non-existent	No
4	Resistance to external fire	Non-existent	No
5	Watertightness	Comparative test on calibrated test rig, test size in accordance with original ITT	Yes, if the results are positive; same grade or better
6	Dangerous substances	Non-existent	No
7	Impact resistance	Comparative test on test rig, test size in accordance with original ITT	Yes, if the results are positive; same grade or better
8	Loadbearing capacity of safety devices	Comparative test	Yes, if results are positive
9	Ability to release	Non-existent	No
10	Acoustic performance	Yes, in consideration of No. 13	Yes
11	Thermal transmittance	No influence	Yes
12	Radiation properties	No influence	Yes
	Air permeability	Comparative test on calibrated test rig, test size in accordance with original ITT	Yes, if the results are positive; same grade or better
13	Operating forces	Comparative test on calibrated test rig, test size in accordance with original ITT	Yes, if the results are positive; same grade or better
	Mechanical strength	Yes	By comparable fixing of load-bearing hardware components
	Ventilation	No influence	Yes
	Bullet resistance	Non-existent	No
	Explosion resistance	Non-existent	No
	Durability test	Yes	Yes, refer to Annex 3
	Behaviour between different climates	No influence	Yes
	Burglar resistance	Non-existent	No

The evaluation of these results, the interchangeability and the suitability of use in line with EN 14351-1 is in the responsibility of the window manufacturer respectively is subject to the terms of contract of the system house in shared or cascading-systems.

## **Annex 2: Combination test in accordance with QM 328 – informative**

If a manufacturer requires verification both in accordance with EN 13126-8:2017 and EN 1191:2012, the two tests can be combined as described below. In the event of successfully testing such a combination, test reports or a test report summary can be prepared for both European standards.

### **Combination of tests as per EN 13126-8:2017 and EN 1191:2012**

- Test sizes as specified in EN 13126-8:2017, Clause 5,
- Test using the maximum sash weight specified by the hardware manufacturer,
- The test specimens may be made of wood, PVC, aluminium or a combination of these materials. The adequate fixing system shall be identified and documented in accordance with the material used for the test specimens.
- The sash weight /mass is adjusted on the basis of a system of setting blocks of adequate weight in compliance with the rules and regulations for glazing. Optionally, a timber-based panel, PVC, steel or timber-based composite panel with additional weights as per EN 13126-8:2017 can be used,
- Determination of the reference velocity at the respective closing edge of the sash (external edge of sash).
- The test specimen shall be equipped with the sealing system provided for the intended purpose.
- Preparation of the test specimen, testing and documentation, as well as pass/fail criteria in accordance with EN 13126-8:2017 and EN 1191:2012.

### **Additional tests as per EN 13126-8:2017**

- Mechanical strength of hinges as per Clause 5.2.2,
- Minimum closing device resistance as per Clause 7.7,
- Corrosion resistance as per Clause 7.8.

After completion of the turn cycles the following additional test shall be carried out:

- Additional loading test 1,000 N as per Clause 7.6.6,
- Reveal test as per Clause 7.6.7,
- Test for hardware with turn restrictor as per Clause 7.6.8 (as applicable),
- Rebate hindrance test as per Clause 7.6.9,
- Applicable failure criteria as per EN 13126-8:2017.

### **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 sash weight and number of cycles) of the replacement hardware system must be at least equivalent to the hardware system subjected to the initial type test as per EN 14351-1:2006 + A2:2016.

Subject to compliance 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 systems in terms of their intended use (PVC and/or timber and/or aluminium profiles and/or a combination of materials) and the maximum possible sash weight. Technical comparability exists if the values of both characteristics are the same.