

QM 342

Certification scheme for locks, multipoint locks and electromechanically operated locks



1 Basis

1.1 Purpose and scope

This certification scheme defines the requirements and procedure for the certification of locks, multipoint locks and electromechanically operated locks.

Introduction and application of the specified provisions and tests ensure the sustainability of the characteristics of the locks demonstrated during initial type testing. The specified requirements go beyond the provisions required by the respective standards and are thus an additional quality feature. This is documented by affixing the "ift-certified" mark to the locks.

Locks certified and monitored by this certification scheme fulfil the requirement for locking systems set out by RAL-GZ 695:2016 (Quality regulations and test specifications for windows, external pedestrian doorsets, facades and conservatories) and RAL-GZ 716:2019 (Quality regulations and test specifications for PVC window profile systems).

Information on the interchangeability of locks 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 lays down the requirements for certification and surveillance of locks, multipoint locks and electromechanical locks and the associated strike plates. For certification and surveillance, ift-Q-Zert must be provided with the following evidence or the following basis apply:

-  Locks:
Test reports according to EN 12209:2003 or EN 12209:2016, (minimum value for the lateral load on the latch during the durability test of 25 N).
-  Multipoint locks:
Test reports according to EN 15685:2011 or EN 15685:2019, (minimum value for the lateral load on the latch during the durability test of 25 N).
-  Electromechanical locks:
Test reports according to EN 14846:2008 or EN 14846:2015, (minimum value for the lateral load on the latch during the durability test of 25 N).
-  All test reports have to be issued by a testing body accredited to EN ISO/IEC 17025 and recognised by ift-Q-Zert.
-  Product documentation for locks and strike plates for the intended purpose and/or use (installation and assembly specifications, casement and frame material, etc.),
-  Documentation of the mandatory factory production control,
-  Contract with ift-Q-Zert on certification and surveillance of production of the products within the scope of this certification scheme,
-  EN ISO/IEC 17065.

1.3 Use of historical data

Products that are already in the process of certification according to QM 342 and have been tested on the basis of DIN 18251-1:2002, DIN 18251-2:2002 and DIN 18251-3:2002 can be used until the test report is no older than 10 years.

1.4 Terms and definitions

1.4.1 Owner of test report

Organization that 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

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

1.4.3 Lock / multi-point locking system

Locks or multipoint locks of the same type and design and comparable characteristics (material, latch design, locking system) for use in doors made of wood, synthetic material, steel and aluminum according to EN 14351-1:2006 +A2:2016.

1.4.4 Product

Under the present certification scheme, product is defined as a lock or multi-point locking system with the associated strike plates and/or locking rails that is distributed on the basis of the specifications provided by the manufacturer.

1.4.5 Series of a lock or multi-point locking system

Locks and multipoint locks with the same basic design and assemblies (latch design or materials used, etc.), but different features such as backset, square, distance, faceplate design, and perforation.

1.4.6 Series of strike plates and locking rails

Strike plates and locking rails with the same basic design and the same materials used (closed strike plates, strike plates with exchange pieces, etc.), but different geometries such as offset, profile adjustment and frame dimension (distance between latch and bolt).

1.4.7 Operating equipment

Part of the test rig used to untwist the test door.

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 locks and multipoint locks.

2.1 Certification procedure

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

3 Initial test

3.1 Test evidence / reports

Initial type testing of locks and multipoint locks as well as strike plates requires presentation of test evidence/reports as set out in 1.2.

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

4 Initial audit

The objective of the initial inspection is to check the personnel and manufacturing conditions for locks and multipoint locks on 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.

As part of the recertification, a reassessment of the locks and multipoint locks is required after 5 years. If there are no changes in the product or in the basics, 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 lock manufacturer undertakes to establish a system of factory production control to assure consistent characteristics of the locks and multipoint locks. The manufacturer shall name an employee responsible for certification who has the authority, knowledge and experience in the production process of locks and multipoint locks. 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. The frequency of sampling is based on the scope and quantity of locks and multipoint locks produced and is determined during the initial audit.

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,
- ☐ Strength verifications (latch design, bolt design),
- ☐ Inspection of assemblies for dimensional accuracy.

Manufacturer's certificate of conformity as per EN 10204:2004, 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 ensure the consistent properties of the locks and multipoint locks shall be documented.

The following shall be observed for production control:

- ☐ Strength verifications (latch design, bolt design),
- ☐ Inspection of assemblies for dimensional accuracy.

6.3.1 Further tests on locks / multipoint locks and associated strike plates according to EN 15685:2011 or prEN 15685:2019 or ~~DIN 18251-3:2002~~ as well as according to EN 12209:2003 or EN 12209:2016 or ~~DIN 18251-1/2:2002~~

As part of the annual FPC test, representative test specimens (produced volume; technical comparability) must be tested for each lock family. For each lock family, the smallest backset / largest distance and the largest backset / smallest distance are tested. The auxiliary locks should be selected depending on the most critical variant.

N°	Tests	Comments
1.	Lachtbolt spring force	Load depending on class
2.	Torque of hub spring	Load depending on class
3.	Handle torque	Load depending on class
4.	Static latch load	Load depending on class
5.	Static bolt load	Load depending on class
6.	Counter force of bolt	Load depending on class
7.	Corrosion resistance	By scope or by agreement
8.	Strike plate	According to design variants
9.	Durability test	100,000 or 200,000 test cycles (as per Annex 2)

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)

Following areas are reviewed:

- ☐ 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.

If manufacturers operate a certified QM-system as per standard series EN ISO 9001, only one regular audit/inspection per year is required.

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 locks and multipoint locks certified under this Scheme in external pedestrian doorsets 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 test	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 test	yes, for positive results; same or better grades
6.	Dangerous substances	none	no
7.	Impact resistance	without influence	yes
8.	Load-bearing capacity of safety devices	not applicable	not applicable
9.	Ability to release	Test according to EN 179:2008 or EN 1125:2008	yes, under consideration of the certificate of constancy of performance
10.	Acoustic insulation	yes, under consideration 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 test	yes, for positive results; same or better grades
14.	Operating forces	Comparative test on calibrated test rig; test size in accordance with original initial test	yes, for positive results; same or better grades
15.	Mechanical resistance (soft body impact)	Comparative test on test rig; test size in accordance with original initial test	yes, for positive results; same or better grades
16.	Ventilation	without influence	yes
17.	Bullet resistance	none	no
18.	Explosion resistance	none	no
19.	Mechanical durability	yes	yes, see Annex 3
20.	Behaviour between different climates	without influence	yes
21.	Burglar resistance	yes	yes, in compliance with the rules according to DIN 14351-1, Table A1 and DIN EN 1627, Annex D2 as well as Clause NA 1

Evaluation of the results, interchangeability as well as their suitability for use in the framework of EN 14351-1:2006 + A2:2016 lie with the responsibility of the door manufacturer and/or is subject to the contractual conditions of the system supplier in the case of shared or cascading systems.

Annex 2: Durability test of locks and multipoint locks (test with relevant features from EN 1191:2012) to ensure interchangeability in the area of permanent function (Annex 1, item 19)

General specifications:

- The durability test is performed with a test apparatus according to DIN 18251:2002 Part 1 to Part 3 or EN 12209:2003 or EN 12209:2016 or EN 15685:2011 or prEN 15685:2019.
- The number of test cycles is 100,000 or 200,000 (as specified by the manufacturer).
- The door leaf weight is 100 kg or 200 kg (as specified by the manufacturer),
- The lock is installed without lateral support of lock case (lock case width and lock case depth with approx. 2 mm clearance all around), the faceplate is recessed into the receptacle with an exact fit for testing.
- The simulated distance between faceplate and strike plate is 5 mm.
- The latch is retracted via a door handle without loading the end stop of the lock follower. The door leaf is opened by means of a suitable operating equipment.
- The reference velocity during closing is according to EN 1191:2012. The reference velocity is measured at a distance of max. 5 mm + measuring distance of the speedometer before the latch hits the strike plate.
- The counterpressure during closing is provided by a defined seal (Deventer, type DS 6988a), which is grooved on lock side over the entire door height in a butt-hinged frame. The compression of the seal must be adjusted so that
 - o the actuating torque at the changeover for the durability test corresponds to a value between 0.4 Nm and 0.8 Nm.
 - o the actuating torque for locks without change on the square nut corresponds to a value between 2.5 Nm and 5 Nm.
- The seal is replaced after the defined number of test cycles has been reached.

Annex 3: Interchangeability of locks and multipoint locks - Durability (Annex 1, Section 19)

-  The locks and multipoint locks must fulfil all requirements of this Certification Scheme.
-  The strike plate constructions must be technically comparable.
-  The properties of the replacing locks or multipoint locks shall be at least equivalent to those used in the initial test according to EN 14351-1:2006 + A2:2016.

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

Annex 4: Transferability of the results to other locks and multipoint locks

The results are transferable to the following designs of locks and multipoint locks, taking into account all requirements of this certification scheme:

- The tested backset of a series is representative for all larger backsets of the same series.
- The tested faceplate width and thickness of a series is representative for all larger backsets of the same series.

Annex 5: Component sheet of lock/multi-point locking system

Representation and design of lock/multi-point locking system

Representation of product	Manufacturer		
	Type		
	Details		
	Material		
	Locking devices		
	Dimensions (backset/distance/handle pin, faceplate)		
	Category		
	ift Product certification		QM 342, N°230ift

Notes on processing

Observe product documentation and specifications of the manufacturer.

Fixing method/fasteners

- When screwing into place, observe specifications of the manufacturer for screw-in angle, screw position, screw-in torque, drillings, routing details, milling and screw patterns. The fasteners must be matched to the existing countersink, i.e. the screw head must not protrude from the faceplate when screwed in. The screw length must be matched to the frame material.
- Sufficient fixation of lock or multipoint lock is the responsibility of the door manufacturer.

Corrosion protection

- Measures for protection during the construction phase.
- Observe and follow service/maintenance recommendations.

Factory production control

Material control/control of incoming goods

- Upon receipt, check goods for obvious defects by visual inspection.
- Check shipping documents of the incoming goods for conformity with the order specifications.

Production control

- Ensuring the exact fitting of lock or multipoint lock.
- The lock recesses must be free of chips before the locks or multipoint locks are installed.
- Ensure suitability of fasteners used and completeness of screw connections.
- When installed, no further drilling may be carried out in the area of the lock recess.

Control of finished product

- Checking the lock or multipoint lock for proper functioning. To do this, the lock or the multipoint lock has to be completely locked. The bolts must run freely into the strike plates.
- Checking the operating torque on door handle and on key.

Annex 5: Component sheet of strike plate

Presentation and structure of strike plate

Representation of product

Manufacturer	
Type	
Details	
Material	
Material thickness	
Bar width	
Fixing method/fasteners	
Category	
ift Product certification	 QM 342, N°230

Notes on processing

Observe product documentation and specifications of the manufacturer.

Fixing method/fasteners

- When screwing into place, observe specifications of the manufacturer for screw-in angle, screw position, screw-in torque, drillings, routing details, milling and screw patterns. The fasteners must be matched to the existing countersink, i.e. the screw head must not protrude from the surface of the strike plate when screwed in. The screw length must be matched to the frame material.
- Sufficient fixation of strike plate is the responsibility of the door manufacturer.

Corrosion protection

- Measures for protection during the construction phase.
- Observe and follow service/maintenance recommendations.

Factory production control

Material control/control of incoming goods

- Upon receipt, check goods for obvious defects by visual inspection.
- Check shipping documents of the incoming goods for conformity with the order specifications.

Production control

- Ensuring the exact fitting of strike plate.
- The strike plate recess must be free of chips before the strike plates are installed.
- Ensure suitability of fasteners used and completeness of screw connections.

Control of finished product

- Checking the lock or multipoint lock for proper functioning. To do this, the lock or the multipoint lock has to be completely locked.
- The bolts must run freely into the strike plates.
- Checking the operating torque on door handle and on key.