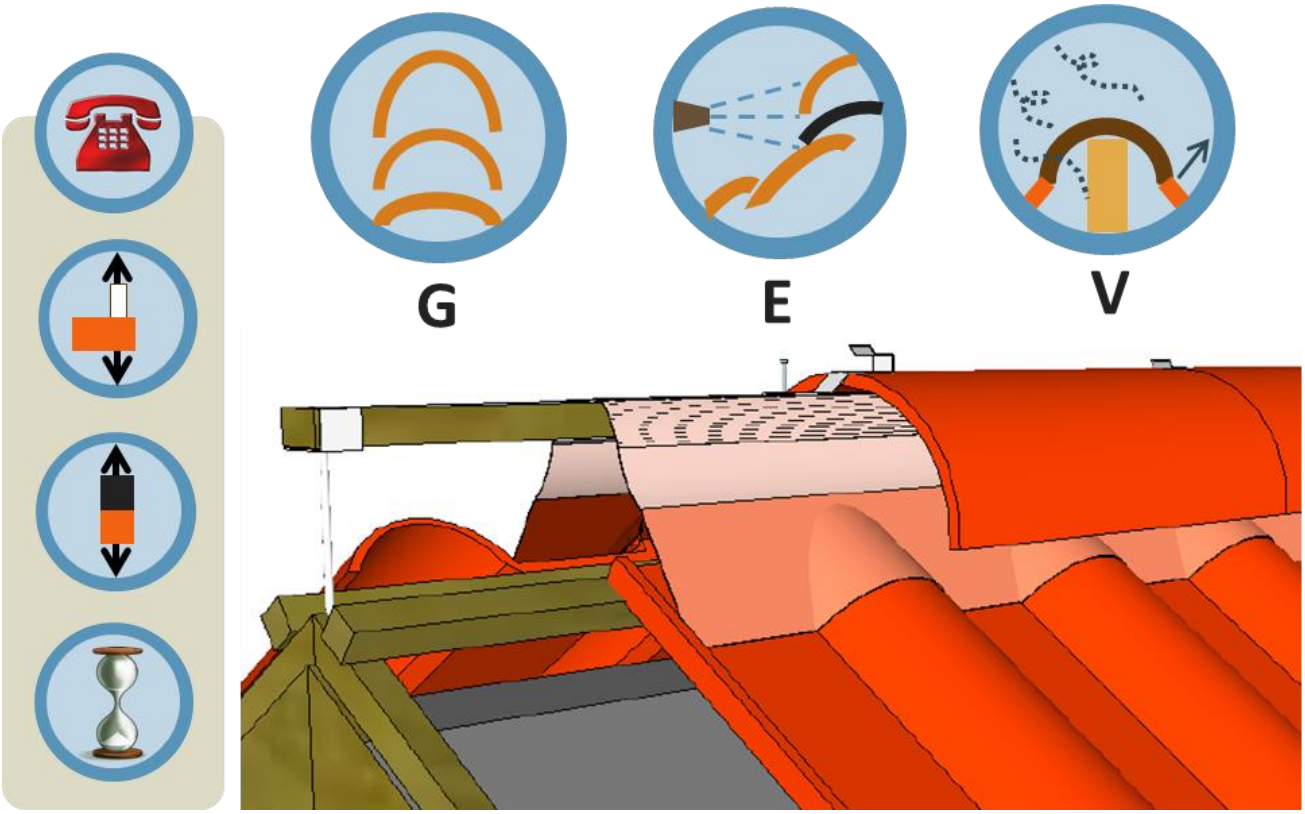
CERTIFICATION

QB 35 Certification Reference System: Ventilated Hips and Ridges



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QB certification system administrative management appendix

This certification reference system was approved by the CSTB Technical Department on 27/01/2023.

It cancels and replaces all previous versions.

As a certifying body accredited by the COFRAC under the number 5-0010, accreditation range available at www.cofrac.fr, CSTB undertakes to draft certification reference systems that guarantee an appropriate level of requirements for the quality of the products, their suitability for use and their durability.

This certification reference system may therefore be revised, in whole or in part, by CSTB, after the interested parties have been consulted.

MODIFICATION HISTORY

Modified Part	Revision No.	Effective date	Modification made
The whole document	00	9 October 2017	Creation of the Certification Reference System
§ 2.2.2	01	9 October 2018	Publication of initial test protocols in Technical Document 99035-01.
§ 2.4.2.1			Modification of adhesive strip controls
§ 2.4.2.5.4, § 3.5			Introduction of sample (population) numbers for controls and tests
§ 2.5.2			Details on product marking
§ 3.3.1.1			Introduction of a minimal production before the admission audit
§ 3.4			Details on sampling conditions
§ 3.5			Grouping of test procedures (previously § 2.4.2.5.4. and § 3.5.1.)
§ 2.4.2.4.4	02	7 February 2020	Tolerance change for the measurement of the folding rate and the thickness of the stripe
§ 3.5.1.4			More detailed information about the follow-up controls on finished products
Part 5			The definition for 'reference' added
§ 2.3.4	03	30 November 2020	Clarification on approving new aluminium and lead suppliers
§ 2.4.2.4.4			Change to minimum frequencies of factory inspections
§ 3.5.1.4			Rewording of the section and clarification on methods for taking measurements
§ 3.5.2.1			Addition of 'individual value' for Hip-and-Ridge tensile test results
§ 3.5.2.2			Change to the number of Hips-and-Ridges tested during an admission audit
§ 3.5.3			Change to the number of Hips-and-Ridges tested during an admission audit and addition of follow-up adaptability test (alternating with tensile tests)

Modified Part	Revision No.	Effective date	Modification made
2.5.2.1	04	30/11/2021	Clarification on the marking and the traceability of each hip-and-ridge.
3.4.2			New requirements of sampling – GEV class follow-up over several years.
3.5.1.4			New requirements on the folding rate measurement in the factory.
3.5.3			Clarifications about the sampling during for the GEV follow-up.
2.5.2.1	05	27/01/2023	More details on mandatory and optional marking.
3.4.2			Addition of the off-site sampling notion.

Part 1
Application

1.1 Scope

This certification reference system concerns Ventilated Hips-and-Ridges, divided into three families (F1, F2 and F3), defined by the nature of their assembly between nailing stripe and side stripes:

	Without adhesive strip	With adhesive strip
Hips-and-Ridges with mechanical assembly (Examples: stamping, setting, etc.)	F1	F1a
Hips-and-Ridges with assembly by a third element (Examples: joint, sticking, etc.)	F2	F2a
One-piece Hips-and-Ridges	F3	F3a

Adhesive strips are integrated into side stripes. Adhesives applied in situ are not covered by this reference system.

Ventilated Hips-and-Ridges are used:

- to allow air to escape from under the roof elements, enabling an exchange of air;
- to help protect the hip and ridge.

For buildings with an altitude of less than 900 m and low or medium levels of relative humidity (W/n < 5 g/m³), these provisions are provided for as described in the reference documents of small discontinuous roofing elements:

- 40.1* and 40.2* series DTUs;
- Technical Appraisals and Technical Application Documents;
- Technical Experimentation Assessments (ATex).

These Hips-and-Ridges are always implemented in dry hips or ridges.

The QB mark strives to inspect:

- the safety characteristics for people, pets and goods when required in consideration of the normal, routine use of the products,
- and/or the suitability for use,
- and/or the durability of the products,
- and/or any complementary characteristics to enable them to stand out in the market.

The certified characteristics are identified in § 1.2 below.

Certified ventilated Hips-and-Ridges benefit from an assessment of suitability for use that is acknowledged as positive with reference, for instance, to a DTU (Unified Code of Practice), a Technical Appraisal or any other technical assessment pertaining to a construction system including a ventilated Hip-and-Ridge and deemed both positive and compatible with the other systems with which this system is combined for the construction of a work.

Note: A construction system covers the whole process from design to execution, leading to the processing of a product or the use of a service for the execution of parts of works.

For information, the implementation of the above-mentioned products is defined in the current CSTB e-book 3785.

1.2 Certification added value

Certification is recognition by a third party of the conformity of the characteristics demonstrating the added value of the product and/or service.

The certified characteristics of the Ventilated Hips-and-Ridges application are the following:

1) The GEV rating (described in the QB35 reference document and the DT 99035-01 document):
   - G adaptability;
   - E behaviour to water;
   - V ventilation capacity.

2) Other characteristics (described in the QB35 reference document and the DT 99035-01 document):
   - Resistance to tensile stress of the assembly between nailing stripe and side stripes, before and after ageing;
   - Resistance to tensile stress of the adhesive strip, before and after ageing;
   - Ability to implement a Technical Support service.

The GEV rating is the exclusive property of CSTB, whose registered office is at 84, avenue Jean-Jaurès, 77420 CHAMPS-SUR-MARNE, by virtue of the registration as simple classification mark made with the INPI on its behalf.

CSTB is responsible for assessing the certified characteristics, with the following control measures:

	Admission	Continued monitoring
Production audit carried out by a qualified technical auditor: - Verification that the production inspections and records have been carried out: raw materials, production, final products, - Verification of the quality management provisions: metrology, packaging, storage, traceability, product marking, handling of non-conformities and customer complaints, - Supervision of certified characteristics tests carried out by the applicant, where applicable.	***Yes***	***Yes*** ***Frequency:*** ***1 annual audit (*)***
Evaluation of the technical assistance by the certification administrator	***Yes***	***No***
Tests carried out by a laboratory recognised by the certifying body (independent and competent): - Samples taken by the certifying body or applicant depending on the type of tests; - Samples taken from the applicant/holder's site and possibly from retail sites.	***Yes***	***Yes*** ***Frequency:*** ***1 annual test campaign (**)***

(*) The frequency may be simplified according to section 3.3.2.

(**) In the case of simplified monitoring, in the years during which no audit is scheduled, the holder must communicate yearly (refer to § 3.4.2).

The audit frequency can be increased to 2 annual audits if critical non-conformities are observed.

1.3 Applying for certification

Any legal entity:

- manufacturing products within the scope defined above and that can comply with the technical requirements described in Part 2 of this document; or
- distributing products within the scope defined above for which the manufacturer complies with the technical requirements described in Part 2 of this document;

may request the right to use the QB mark – Ventilated Hips-and-Ridges.

Such a request is referred to as an 'application', while the entity submitting it is known as the 'applicant'.

Before submitting their application, applicants must make sure that they meet the conditions defined in this certification reference system concerning their product and the sites in question. It is the applicants' responsibility to make sure that the regulations applicable to their product are respected.

They must undertake to meet the same conditions throughout the entire duration of the use of the QB mark.

Case of production subcontracting by an applicant:

Applicants may subcontract part of the manufacturing process for the products covered by this Certification Reference System.

If so, they undertake to:

- be responsible for the effectiveness of the production control system as a whole in accordance with this certification reference system;
- be able to provide, on the one hand, the specifications that define the inspection operations that they impose on their subcontractor in order to comply with the requirements in this certification reference system and, on the other hand, the evidence regarding the subcontractor's skills in complying with those requirements.

Failure to comply with all of the commitments may lead to a halt to or suspension of the examination of applicants' files.

Part 2
The Certification Scheme

The certification scheme for the Ventilated Hips-and-Ridges application contains this certification reference system, which references:

- the QB mark General Requirements, which set the organisation and conditions for use of the mark;
- the additional specifications and standards referred to in § 2.2.

This certification reference system forms part of the certification framework for non-food-related products and services, as provided for in the Consumer Code (articles R 433-1 to R 433-2 and L 433-3 to L 433-11). It specifies the conditions for applying the General Requirements of the QB mark to the products defined in Part 1.

2.1 Regulations

The granting of the right to use the QB mark in no way substitutes CSTB's responsibility for the legal responsibility on the company holding the QB mark usage right.

As regards the regulatory requirements covered by this certification reference system, the applicant/holder shall submit to the certifying body during the certification audits the documentary evidence defined in the regulations and attesting to the compliance of their product with the regulatory requirements.

The documentary evidence must be communicated to CSTB as part of the examination of the admission/extension file.

If the product has been modified, the documentary evidence must be presented to the auditor as part of the monitoring audit, by any appropriate means.

The applicant/holder is held responsible to the certifying body for any inaccurate, deceptive and/or non-compliant documentary evidence with regard to the definition of documentary evidence as laid down in the regulations.

The certifying body's tasks do not lie in proving conformity of a product to the regulatory requirements listed in this document. Those tasks are strictly incumbent upon the bodies approved by the authorities in charge of applying each of the regulations concerned.

The main regulations that apply to launching products on the French market and for which the applicants/holders shall submit to the certifying body a document attesting to their products' compliance with the regulations, are listed below.

Regulations	Documentary evidence required
Article L.121-2 of the French Consumer Code: 'A marketing practice is deceptive if it is committed in one of the following circumstances: 2° 'When it is based on allegations, information or presentations that are false or likely to mislead and that cover at least one of the following elements: [...] b) The essential characteristics of the goods or services, namely: their substantial qualities, their composition, accessories, origin and quantity, the manufacturing method and manufacturing date, the conditions of use and their suitability for use, their properties and the results expected from their use, as well as the results and main characteristics related to the tests and inspection carried out on those goods and services.'	Trade name of the product Commercial presentation of the product (brochures, website, etc.)

2.2 The standards and complementary specifications

For the references that indicate a date of implementation or an index, only the version cited is applicable. For references that do not indicate a date of implementation or index, the most recent version of the reference document applies (including any amendments).

2.2.1 APPLICABLE STANDARDS

- NF EN ISO 8339(01-11-2005): Title: Building Construction - Sealants - Determination of tensile properties (Extension to break)

  Note: Controls carried out on the adhesive strip must be completed in accordance with the NF EN 8339 standard (cf. section 2.4.2.2. herein).

- NF P30-101(01-06-2011): Title: Roofing - Terminology
  Note: The product definitions shall comply with the NF P 30.101 standard on terminology.

2.2.2 COMPLEMENTARY TECHNICAL SPECIFICATIONS

In addition to the requirements set out above, the products shall comply with the complementary specifications laid down in the following documents:

Technical Document 99035-01: Initial tests protocols of the certification QB 35 Ventilated Hips-and-Ridges;

- CSTB e-book 3785 (January 2018): Closoirs ventilés – conditions générales de mise en œuvre des closoirs ventilés [Ventilated Hips-and-Ridges – General conditions for installing ventilated Hips-and-Ridges].

The characteristics and performances requiring tests depend on the concerned Hip-and-Ridge family.

2.3 Modification declaration

This section specifies the information that holders of the right to use the QB mark must provide to CSTB and the procedures they must follow in the event of any modifications to:

- the holder;
- the manufacturing unit;
- the quality organisation of the manufacturing unit;
- the product.

Failure to respect this obligation as observed by CSTB may lead to a suspension or withdrawal of the right to use the QB mark.

In the cases not provided for earlier, CSTB determines whether the modifications bring the certification into question and if it is necessary to carry out a complementary quality assurance operation.

Depending upon the results of the examination, CSTB communicates the appropriate decision.

2.3.1 MODIFICATION CONCERNING THE HOLDER

Holders shall communicate in writing to CSTB any legal modification of their company or any modification in their company name.

In case of merger, liquidation or absorption of the holder, all rights to use the QB mark, from which they might benefit, automatically stop.

A new admission application may be submitted and its examination may be simplified depending upon the modifications made.

2.3.2 MODIFICATION CONCERNING THE MANUFACTURING UNIT

- Case of a production transfer:

Any transfer (in whole or in part) of the manufacturing unit of a certified product to another production site entails an immediate halt in the QB marking by the holder on the relevant products.

The holder shall declare this transfer in writing to CSTB, which will organise an audit of the new production unit and, as the case may be, have tests carried out.

The visit may be simplified or even cancelled when the new manufacturing unit is already familiar to CSTB.

The assessment and renewal decision procedures for certification are the same as those for admission as described in Part 3 of this certification reference system.

- Case of a modified production process:

The holder shall prove that the modification of the production process does not have an impact on the performances of the product's certified features (cf. § 2.4.2. § 8.5.6. 9001 V15). Furthermore, the holder shall inform CSTB of this absence of impact.

2.3.3 MODIFICATION CONCERNING THE MANUFACTURING UNIT'S QUALITY ORGANISATION

The holder shall declare in writing to CSTB any modification relative to their quality organisation that may affect the conformity of the production to the requirements of this certification reference system.

In particular, they shall declare any modification in the certification of their quality management system. If the distribution is carried out by a third party, where appropriate, the

holder shall undertake to immediately inform CSTB of any modification made to the distribution of their products and, in particular, any halt in supply by the designated third party.

Any temporary halt in internal quality assurance operations for a certified product entails an immediate halt in the QB marking of this product by the holder, who must inform CSTB of this. CSTB then communicates to the holder a decision to suspend the right to use the QB mark for a specific duration following which, if the right of use cannot be re-established, this holder's right to use the QB mark will be withdrawn.

2.3.4 MODIFICATION CONCERNING THE CERTIFIED PRODUCT

Any modification to the certified product when compared with the application dossier, likely to have an effect on the product's compliance with the requirements in the certification reference system, shall be declared in writing to CSTB.

Depending on the modification declared, CSTB determines whether this is a certification extension application.

If a change of lead and aluminium raw material supplier occurs, as long as the properties of these materials do not change (thickness, grade, coating, etc.) and after notifying CSTB, the new material can be accepted on the basis of the material certificates. In case of doubt or disagreement, new G and E type testing must be carried out.

2.3.5 TEMPORARY OR PERMANENT HALT IN PRODUCTION

Any permanent or temporary halt in the production of the certified product (or range of products) or any abandonment of a right to use the QB mark shall be declared to CSTB in writing, specifying the time necessary to sell off the inventory of the QB-labelled products. CSTB shall notify the holder of the QB mark of the suspension or withdrawal of the right to use the QB mark. When the period indicated by the holder expires, the product is removed from the list of certified products.

Any temporary halt in the manufacture of the certified product (or range or products) must be the subject of a suspension of the right to use the QB mark for a maximum period of 6 months, renewable only once, if applicable. The total duration of the suspension of the right to use the QB mark for these products must not exceed one year. The lifting of the suspension may only be announced following a complementary audit.

2.3.6 MODIFICATION CONCERNING THE DISTRIBUTION CIRCUIT

The holder shall commit to informing CSTB of any modification to the distribution of the certified products as soon as they become aware of such modification and, in particular, whenever they stop supplying a distributor who holds the right to use the QB mark, which means that the right to use the QB mark is no longer maintained.

The distributor whose right to use the QB mark has been maintained shall commit to informing CSTB of any modifications in their supplies that would result in the right to use the QB mark no longer being maintained. The distributor's right to use the QB mark can only be validated after a new examination in accordance with Part 3 of this certification reference system.

2.4 The quality management provisions: audit reference system

2.4.1 PURPOSE

Applicants/holders and their distributors whose right of use has been maintained are each responsible for satisfying all requirements of the certification under which the right to use the QB mark for the relevant product is granted. Applicants/holders shall implement all the necessary ways and means to permanently guarantee the product's conformity with this certification reference system. In addition, they must manage their external service providers

using all means to assess every component element of a product or external service(s) for which they are the applicant or holder of the right to use the certification mark.

This section sets the minimum measures that the applicant/holder shall implement in terms of quality management to ensure that the products are manufactured respecting the certification reference system at all times.

The quality system depends in part on the establishment by the applicant/holder of a set of organisational measures ensuring conformity of the delivered products with the standards and additional specifications, if applicable. These measures are described in section 2.4.2 below.

2.4.2 MINIMUM REQUIREMENTS FOR QUALITY MANAGEMENT

Applicants/holders shall have implemented their own ways and means, the existence and effectiveness of which are assessed based on the requirements of Standard NF EN ISO 9001, version 2015.

If the manufacturing unit is not NF EN ISO 9001-certified, the applicant/holder must justify the introduction of a range of organisational measures and a production control system to control conformity with the standards and complementary specifications for the delivered products that meet at least the requirements in this certification reference system.

The audits are carried out according to Table 1 as follows. This table indicates the specific requirements in Standard NF EN ISO 9001, which must be verified in the context of the certification.

Within the framework of an audit, all the necessary requirements identified on the shaded lines in Table 1 below shall be audited. All the other requirements pertaining to quality management shall be audited over a period of 3 years.

Possible simplification:

If the manufacturing unit has a certified quality management system that conforms to Standard NF EN ISO 9001, the audits may be 'simplified'. Only the requirements identified on a 'shaded' line in Table 1 are to be audited.

This simplification is possible as long as:

- the ISO 9001 certificate includes within its scope and domain the sites and activities covered by the certification mark; and
- the ISO 9001 certificate is issued by a certifying body accredited by the COFRAC, by a member of the EA (European cooperation for Accreditation) or by a member of the IAF (International Accreditation Forum) - see signatories on the COFRAC website www.cofrac.fr; and
- the last ISO 9001 audit report for the applicant/holder is forwarded to CSTB prior to the audit or examined during the audit.

Table 1 (Applicable Requirements)

§ ISO 9001: 2015	REQUIREMENTS	MINIMUM EVIDENCE EXPECTED	APPLICABLE
5. Leadership			
5.3.	Organizational roles, responsibilities and authorities	* Organisation chart * Description of responsibilities and authorities (examples: organisation chart, job sheets, etc.) * Person appointed to be responsible for organising and efficiently implementing the production system	■ <To be used for persons responsible for inspection or with a direct impact on critical points in making the product.> All the items except: * ISO 9001 V15: §5.3 c,d
7. Support			
7.1.4.	Environment for the operation of processes	Evidence of maintenance of the work environment. Examples: storage of a product and its components to protect them from bad weather, suitable ambient conditions, etc.	■ <To be used for processes linked to the production of products/execution of services>
7.1.5.	Monitoring and measuring resources	* List of the inspection, measuring and test equipment used on the product production/service performance site and/or in the laboratory, * Identification of the equipment used to determine its validity, * Planning for the verification or calibration of the equipment having an impact on the validity of the results (in particular the equipment used to perform tests on certified characteristics), * Evidence of the verification and/or calibration operations (ex: equipment data sheet, verification or calibration report, etc.), * Evidence of connection to national or international standards (where possible), * Validation of software used to monitor and measure the specified requirements, where appropriate.	■ <To be used for processes linked to the production of products/execution of services>
7.2.	Competence	* Compliance with test methods and inspection provisions, * Actions planned to acquire the necessary competencies (training, tutoring, etc.), where appropriate.	■ <To be used for persons responsible for the inspection or with a direct impact on critical points in making the product.>
7.5.	Documented information	* List of the internal and external documented information. Examples: Procedures, operating procedures, test methods, inspection examination, quality records * Evidence of control of internal and external documents. Example: Availability of the applicable version of the test method, the reference system, the inspection provisions, etc.	■ <To be used for processes linked to the production of products/execution of services> *Note: Quality manuals are no longer required*.

§ ISO 9001: 2015	REQUIREMENTS	MINIMUM EVIDENCE EXPECTED	APPLICABLE
8. Operation			
8.4.	Control of externally provided processes, products and services	* List of service providers * Contract/order defining the requirements of the applicant/holder of the certification * Evidence of the verification of raw materials, components ***(cf. § 2.4.2.1)***, services purchased * Evidence of the verification of subcontracting conditions: transport, handling, tests ***(cf. § 2.4.2.2)***, etc.	■ <To be used for raw materials, bought-in components and external services affecting the quality of the product/service> External providers: * supplier of raw materials, components, services integrated into the product/service * subcontractor of external services (ex: tests, handling, transport, etc.) *(*) Specific case of applicants/holders subcontracting part of their production* *CSTB audits the subcontractors (as provided for in the certification reference system)* All the items except: * ISO 9001 v15: § 8.4.1.
8.5.1.	Control of production and service provision	* Information defining the characteristics of products and services. Example: product plan/description of the service, etc. * Information defining the activities to be carried out and the results to be obtained. Examples: operating method(s), working instruction(s), test method(s), certification reference system (expected performance) * Monitoring and measurement activities. Examples: Monitoring plan, inspection procedures and instruction(s), test method(s), etc. * Conservation of documented information proving the conformity of products/services with the acceptance criteria (*§ 8.6. * ISO 9001 v15)*	■
8.5.2.	Identification and traceability	* Identification/Marking of the product in accordance with the requirements in the Certification Reference System. * Marking of commercial documents in accordance with the requirements in this Certification Reference System.	■ <To be used in all cases for identification (and traceability if relevant)>
8.5.4.	Preservation	Verifying that the product is preserved throughout the production line (identification, handling, storage, packaging, transport, etc.).	■
8.5.5.	Post-delivery activities	Technical Support ***(cf. § 2.4.2.7)***	■
8.5.6.	Control of changes *(in production/service provision)*	* Evidence of control of modifications in the manufacturing process/service provision, in particular the impact of modifications on the product's performance ***(cf. § 2.4.2.4)***: - modification review, - person authorising the modification and all the necessary related actions.	■

§ ISO 9001: 2015	REQUIREMENTS	MINIMUM EVIDENCE EXPECTED	APPLICABLE
8.6.	Release of products and services	* Measures for the control of products; records of the results of inspections and conformity with the acceptance criteria ***(cf. § 2.4.2.4)*** * Names of the persons responsible for releasing the finished products/services	▪
8.7.	Control of non-conforming outputs	* Measures for processing non-conformities, including customer complaints, and implementation of such measures ***(cf. § 2.4.2.6)*** * No dispensation granted as regards the performance of a certified characteristic	▪
10. Improvement			
10.2.	Non-conformity and corrective actions	* Implementation of corrective actions to deal with non-conformities pertaining to a certified product, including customer complaints ***(cf. § 2.4.2.5)*** * Effectiveness of the actions taken.	▪

2.4.2.1 Verification of the product's components

Applicants/holders are required to carry out an inspection of all components used in the manufacture of their certified products upon reception and in all cases prior to use.

The 'reception' internal quality control operation specified by the applicant/holder shall cover:

- the inspection methods for products upon reception that assess compliance and/or regularities in relation to the expected characteristics,
- including, as applicable, rules for collecting product samples.

This inspection covers all management actions carried out by the supplier. For example: compliance sheet issued after a systematic inspection prior to delivery, which the applicant/holder requires the supplier to perform, supplier certified according to Standard NF EN ISO 9001 for relevant products or certified supplies, etc.

The density of adhesive strips and their tensile strength must be verified by the supplier or by the holder/applicant.

The tensile strength must be tested according to the following procedures:

- Standard NF EN ISO 8339 Method A for the adhesive strip alone; or
- Similar method to tensile test described in Technical Document 99035-01 (strength and elongation at break) for adhesive strip applied on the final product.

These controls apply to pre-extruded adhesive strips or to adhesive strips transformed during Hip-and-Ridge production (deposited while hot, liquid, etc.), which are implemented during production.

When the adhesive strips are not inspected, samples are taken during the audit for tensile tests on the adhesive strip on the final product according to the sections 3.4.2 and 3.5.3.

2.4.2.2 Subcontracting production for one component of the Hip-and-Ridge

Applicants/holders may subcontract the production of one or more components of the final product, on the condition that a procedure defined by the holder exists for the subcontracting and includes at least one of the following requirements:

1- Audit of the subcontractor's production unit once a year (*): In case of subcontracting, applicants/holders undertake to declare the location of the production unit (principal unit).
2- The conditions for subcontracting production are formalised in a contract or an order between the holder and subcontractor(s).

3- During the audit of the principal unit by the certifying body, the following points are verified:

   a) The reception procedure for these components, including verification of the quality system and inspections carried out by the subcontractor(s);

   b) The procedure or specifications established between the holder and their suppliers;

   c) The inspections and self-monitoring performed by the supplier;

   d) The audits performed by the holder according to the frequency defined in his procedure or any equivalent procedure;

   e) The documentation is checked (brochures, website, etc.);

   f) The inspections and tests provided for in the specifications and in the Certification Reference System regarding the mechanical characteristics in question.

(*): The follow-up audit is performed by the certifying body on the premises of the subcontractor(s). The frequency is 1 audit every 3 years, assuming the Quality Management System is in compliance with Standard NF EN ISO 9001.

2.4.2.3 Subcontracting tests

Applicants/holders may subcontract the tests to an external laboratory, on the condition that a contract or an order is put in place. Subcontracting is only possible if the following conditions are met:

- subcontracting the tests does not result in a disruption to the production process (due to waiting time for results, for example);
- the conditions for subcontracting the tests are formalised in the contract or order and must define the applicable test method, testing frequency, requested waiting times for results, notification of results in writing, the procedure in case of non-compliant results and the type of equipment used;
- the subcontractors' laboratory where the test is carried out must be accredited according to Standard NF EN ISO/CEI 17025, otherwise the party requesting the test (holder of the certification mark) must ensure that the equipment used is compliant (calibration, test configuration, etc.) and the staff carrying out the test have the necessary skills.

2.4.2.4 Inspection during production and on finished products

2.4.2.4.1 General

The applicant/holder shall possess the necessary ways and means for the inspections and tests defined by the standards, reference documents and additional specifications mentioned in section 2.2 of this reference system. The applicant/holder undertakes to carry out reliable and regular inspection of their production.

Production self-inspection must be provided annually to the certifying body.

2.4.2.4.2 Quality assurance operations during production

The applicant/holder shall put in place quality assurance operations during production. This applies to the product in its intermediate states at the main production stages (adhesive strip position, roll width, etc.), as well as compliance with the setting instructions for the production tools (production machines, equipment, product centring, etc.).

Quality assurance instructions shall be formalised and made available to the operators. Quality assurance results recorded upon each inspection. If the results of the quality assurance operations indicate that the product does not meet the requirements of this Certification Reference System, the necessary corrective actions must be implemented immediately.

2.4.2.4.3 Initial inspections on finished products

Type testing is undertaken on finished products according to section 3.5.

Type testing: Type testing involves tests conducted when a change, made to design, raw materials, suppliers of components or in the production process, is likely to appreciably change one or more product characteristics. Type testing corresponds to initial tests and must be undertaken for appropriate characteristics.

Whenever a type testing request is made with the mark laboratory, a sampling sheet, provided by the application administrator, has to be enclosed for every Hip-and-Ridge reference tested.

The batch tested must be kept in the plant until the admission audit report is received.

2.4.2.4.4 Follow-up inspections on finished products

Applicants/holders are required to verify the characteristics of the finished products before delivery and are responsible for putting these inspections in place. The inspections and tests on finished products manufactured by the applicant/holder are carried out according to the table below and additional specifications mentioned in this certification reference system.

The following inspections on final products are carried out by the holder/applicant.

Characteristics	Unit	Tolerance	Minimum number of samples
Total length of Hip-and-Ridge	mm	-0.5%, +1.5%	1/shift/width Or 1/1000m/width
Total width of Hip-and-Ridge	mm	-5%, +5%	1/shift/width Or 1/1000m/width
Useful width of side stripes	mm	-5%, +5%	1/shift/width Or 1/1000m/width
Folding rate	%	-2%, +5%	1/shift/width Or 1/1000m/width
Thickness of side stripes	mm	-10%	1/shift/width Or 1/1000m/width
Opening of ventilation sections (1)	mm	-	1/shift/width Or 1/1000m/width
(1) The opening of ventilation sections is inspected whenever these latter are measurable.			

The inspection methods are defined in section 3.5.2. They correspond to those audited.

Applicants/holders shall take random samples at the end of the production line and carry out the inspections and tests on these samples. The samples taken must be representative of the dimensions of the products covered by this certification reference system.

The method for collecting the samples required for testing must be clearly specified in the applicant's/holder's quality plan and must not be left to the sole discretion of the operator.

Applicants/holders shall record the results of the previous inspections. If the results of the standard inspections are inconclusive, the inspections must be heightened and the causes of the malfunction must be identified in order to correct it by carrying out production quality controls, if necessary.

2.4.2.5 Measures for processing non-conformities

They include in particular:

- an analysis for identifying the cause of the anomaly;
- an analysis to determine the impact of the anomaly on production since the previous inspection;
- management ensuring that the implementation of the corrective actions is effective;

– in the unlikely event that non-compliant products are delivered to a customer, the latter shall be notified immediately so that appropriate measures can be taken.

2.4.2.6 Customer complaints

The customer complaint record is audited. For this purpose, holders shall keep:

– a record of all complaints and actions relative to the products covered by this certification reference system;

– a record of the corrective measures adopted, in particular when complaints have revealed a manufacturing anomaly.

The holder must be able to show the auditor extracts from such records pertaining to complaints involving the products covered by this certification reference system.

2.4.2.7 Evaluation of the holder's Technical Support

Holders of the right of use for the QB 35 mark must prove their capacity to provide Technical Support as well as the means put in place to ensure it.

Document review:

At the time of admission and for each product range, the following documents and information are provided: the applicable commercial brochure(s), the installation instructions or other technical document(s), product marking and product labels, which are distributed or available online.

A user reference list is also provided for each admission application or maintenance application. The list must make it possible to control the access to documents for implementation, mentioned above, for users.

CSTB will verify that these documents respect the rules for implementing the product in European France, according to this reference system and the current CSTB e-book 3785.

Evaluation of Technical Support

Only in the case of a first application, the evaluation of technical support is performed by means of a live interview, via videoconference or telephone, and a multiple-choice questionnaire given to those in charge of this assignment, designated by the applicant, where a score exceeding 12/20 is obtained.

CSTB shall analyse the responses.

If the mark obtained is below 12/20, an action plan must be provided relating to training the technical support specialist designated by the applicant. This plan will include the technical and regulatory context and the reference system requirements. A second evaluation will take place within 2 months by means of a new multiple-choice questionnaire.

CSTB must be informed any time the specialist for the technical support structure changes. A multiple-choice questionnaire is provided to the new specialist, who must achieve a score higher than 12/20.

For a maintenance application when the applicant provides the technical support and the mark earned on the multiple-choice questionnaire is below 12/20, CSTB informs the holder-manufacturer/distributor thereof and a training action plan is required.

For distributors/applicants who have the right to use the QB 35 mark, the questionnaire is not mandatory unless the specialist for the technical support structure changes.

2.5 Marking – General provisions

Marking is an integral part of product certification.

Beyond the identification of a certified product and its traceability, the marking of a product with the logo of the collective certification mark ensures optimal protection for users and protects holders against wrongful use and counterfeits.

Under no circumstances is it possible to make reference to the QB mark before the right to use this mark is obtained or to present counterfeit products for certification.

The reproduction or use of CSTB logos is only authorised through strict application of the QB graphic charter and with the support of the right of use, authorised by a valid certificate or with the prior consent of CSTB.

Furthermore, the purpose of mentioning the main certified characteristics is to ensure that the technical characteristics covered by the certification, which is formalised by the QB mark, are transparent for consumers and users. It thus enhances the certification and its content.

The purpose of the marking rules described hereafter is to guide the holder in complying with regulatory requirements and certification requirements. The QB mark General Requirements define the conditions of use, the conditions of validity of the right to use the QB mark and the procedures for sanctions in the case of wrongful use.

Without prejudice to the sanctions provided for in the QB mark General Requirements, any incorrect declaration of the certified characteristics and any fraudulent use of the QB logo will result in legal action against the holder for deceptive marketing.

2.5.1 THE QB LOGO

The QB logo must ensure the identification of each certified product. The holder undertakes to respect the QB mark's graphic charter. The QB logo and its graphic charter are available from the application administrator.

The certified product must have a description and identification distinguishing it from non-certified products.

The holder shall not use the QB logo except to single out certified products without there being any risk of confusion whatsoever with other products, especially non-certified products.

To prevent any confusion between certified products and non-certified products, applicants/holders must ensure that the trade names used are not identical or similar (for example: 'Prod+' for a certified product and 'Prod' for a non-certified product).

It is recommended that the holder remit to CSTB in advance any marking projects or materials upon which the certification mark appears.

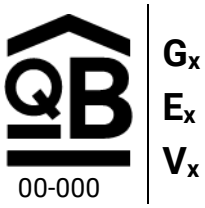
If the product cannot be marked for technical reasons, CSTB must be contacted to determine a common marking rule.

2.5.2 TERMS AND CONDITIONS FOR MARKING

This section describes both the terms for affixing the QB logo and the marking of certified characteristics.

The requirements of article R 433-2 of the Consumer Code stipulate that marking must comply with the provisions outlined in the following sections and, whenever possible, include the following information:

CLOSOIRS VENTILÉS



http://evaluation.cstb.fr

Résistance de la liaison entre corps et jupes avant et après vieillissement

Résistance à la traction du cordon adhésif avant et après vieillissement

Assistance technique

When the Hip-and-Ridge range has several GEV ratings (adaptability on several curved shapes), the marking should mention all the ratings.

It is recommended that consumers be informed about the primary reasons for and advantages of using a certified product. The certified characteristics must appear on at least one of the materials (product, packaging or communication media).

COFRAC accreditation marking can only be used with the prior written authorisation of CSTB and under the conditions expressed in the following wording: *'Certification delivered by CSTB, benefiting from COFRAC Certification of Products and Services accreditation no. 5-0010, list of locations and scope available at www.cofrac.fr'*.

Note: The holder/applicant must be able to communicate the numbers of the production batches in the plant.

2.5.2.1 Marking of certified products and/or labels on certified products

All certified products manufactured after the date indicated on the approval of the right to use the QB mark (via an admission or extension procedure) and which comply with the requirements of this Certification Reference System, must be marked, at a minimum, with the trade name (unless not possible for technical reasons) and the number or the traceability code (day of production, for example). The manufacturer had to make the marking permanent, readable, and indelible.

The product's trade name must be present every 2 metres. The same has to be applied to the number or the traceability code. Those are mandatory markings in the QB35 – Ventilated Hips-and-Ridges.

Optional: If the certificate holder wants to put the "QB" marking directly on the hip-and-ridge, several possibilities are allowed (the marking has to be permanent, readable, and indelible):

- Printing (woven or non-woven hips-and-ridges):
  - QB logo (according to the graphic chart) with the mention "QB35 – Closoirs ventilés";
  - Certificate number;
  - Link to the CSTB website.
- Ink (metallic hips-and-ridges):
  - Mention of the "QB35" in letters and numbers;
  - Certificate number;
- Imprint (metallic hips-and-ridges):
  - Mention of the "QB35" in letters and numbers;
  - Certificate number;
- Label on the hip-and-ridge (every type of hip-and-ridge):
  - QB logo (according to the graphic chart) with the mention "QB35 – Closoirs ventilés";
  - Certificate number.

In the case of optional marking, if the holder does not have any place to introduce all the above-mentioned elements, the holder can mention the missing elements somewhere else on the hip-and-ridge.

The fact that the holder mentions the QB on the hip-and-ridge does not dispense it of mentioning the product name or the traceability code which are the mandatory markings.

Note: If there is a code for identifying the product, the code must be given to CSTB.

2.5.2.2 Marking on the packaging of the certified product or on the product's accompanying document(s) (if applicable)

All packaging for certified products or accompanying documents shall include all the marking components defined in section 2.5.2 as well as the complementary information below:

- The mark logo,
- The certificate number,
- The name of the application,
- The reference to the CSTB website,
- The identification of the manufacturer holding the certification,
- The production unit identification,
- The trade name and/or reference,
- The number of the production batch,
- Where possible, the list of the certified characteristics and their certified performance levels.

If possible, the packaging can list the certified characteristics, other then the GEV classification.

Example of marking:

CLOSOIRS VENTILÉS 00-000 G_x E_x V_x http://evaluation.cstb.fr Résistance de la liaison entre corps et jupes avant et après vieillissement Résistance à la traction du cordon adhésif avant et après vieillissement Assistance technique	**Manufacturer/Distributor holder identification:** **Batch/Manufacturing number:** **Product trade name or reference:**

Note: if there is a code for identifying the product, the code must be given to CSTB.

Comment: If the product is already marked, marking on the packaging of certified products must be recommended, given that this is one of the ways to promote the certified product.

2.5.2.3 Marking on communication media and documentation (Technical or commercial documents, posters, advertising, websites, etc.)

The generic use of the QB mark through its reproduction in the holders' correspondence is forbidden, unless the holder has the right to use the QB mark for all of their products.

References to the QB mark in communication materials or documentation must be made in a way that does not allow for any confusion between certified products and other products. They shall include all the marking components defined in section 2.5.2: logo of the mark, name of the application, reference to the website and, if possible, the list of certified characteristics.

Some of the additional information below can be included to the marking:

- name and address of the certifying body (CSTB, 84 avenue Jean Jaurès - Champs sur Marne - F - 77447 Marne-la-Vallée Cedex 2);
- name and address of the holder (name and address of the representative in the European Economic Area, if applicable);
- holder identification;
- product designation (trade name);
- essential certified characteristics (designations and values);
- certificate number.

For the French market, this information must be provided in French (Law No. 94-665 of 4 August 1994 relative to the use of the French language). If necessary, the information can also be given in one or more other languages.

For the proper interpretation of this section, the holder should be advised to submit to CSTB, in advance, all communication materials and documentation where the certification mark is expected to be used.

2.6 Conditions for terminating marking or for removing the mark in the case of suspension, withdrawal or abandonment

If any product is accidentally not in conformity with the requirements, the product and its packaging shall not be marked with the QB logo or the logo must be crossed out or concealed to prevent any risk of confusion.

In case of accidental non-compliance observed after the project has been launched on the market:

→ The manufacturer is responsible for:

- Immediately informing CSTB;
- Confirming the qualities/batch numbers/lead times, etc. involved;
- Planning retroactive removal of the mark and possible withdrawal from the market.

→ CSTB is responsible for:

- Defining the means to verify mark removal (customer commitment, etc.);
- Estimating the risks of improper use of the mark, particularly in the event that certification applies to products/services at risk;
- Depending on those risks, possibly triggering an on-site inspection (company or shop) or informing the public authorities;
- Requiring the holder to undertake corrective actions and/or on-site inspection and, if applicable, suspending or withdrawing the certification.

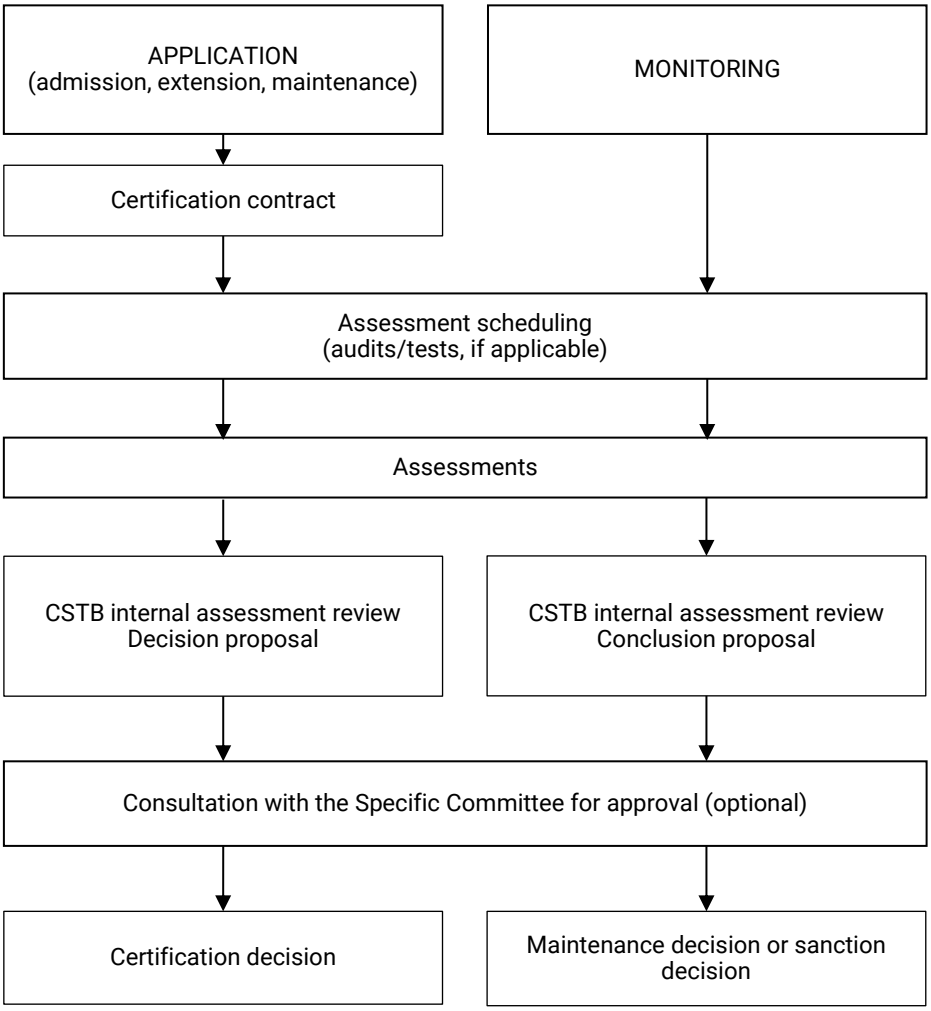
Part 3
Certification Process

3.1 General

- Definition of the applicant (see Part 5);
- Definitions of the various types of application (admission application/complementary admission application/extension application/maintenance application):

    - An application for admission is made by an applicant not having the right to use the QB mark for the Ventilated Hips-and-Ridges application.
      It corresponds to a product (or a range of products) coming from a specific design process and/or manufacturing unit and/or a specific sales location, defined by a trademark and/or with a specific reference to the product submitted and the technical characteristics;
    - A complementary and/or extension application is made by a holder and applies to a new product/modified product on the same manufacturing site;
    - A maintenance application is made by a holder and applies to a QB-certified product intended to be sold under another trademark and/or with a specific reference to the product without any modification to the certified characteristics;
    - A new application for admission for a product (or a range of products) following the withdrawal of the right to use the QB mark as a result of a sanction is made in the event of deceptive marketing practices in application of Articles L 121-2 to L121-5 of the Consumer Code.

3.2 Certification application handling process



The conditions for obtaining certification and the certification follow-up procedure are described in Parts 1 and 2 of the Appendix to this certification reference system.

3.3 Audits

3.3.1 ADMISSION AUDITS

The purpose of admission audits is to make sure that the measures defined and implemented by the applicant in the production unit meet the requirements in Part 2 of this certification reference system and technical document 99035-01 rev01.

This entails checking, before admission, the existence and effectiveness of the quality-related measures that have been taken, as well as the product inspections performed by the applicant. These are the admission audits conducted by the auditor.

If the applicant subcontracts part of their production, CSTB reserves the right to carry out an audit on the premises of the subcontractor(s) based on this certification reference system.

All the ways and means (premises, installations, equipment) enabling the auditor to carry out the mission incumbent upon him/her shall be placed at his/her disposal free of charge, along with persons qualified to implement them.

The auditor must be able to verify that manufactured products are in conformity with the products that were tested during type testing and defined in the sampling sheet (cf. *§ 2.4.2.5.3*).

In the event of any dangerous situation in relation to the certifying body's safety requirements, the auditor reserves the right to withdraw.

An audit report is prepared and remitted to the applicant (cf. *§ 3.3.3*).

3.3.1.1 Case of an initial admission application

The duration of an audit is normally 1 day per manufacturing unit.

The audit duration may be adapted according to the risk: level of development of the quality system, organisation of the company (process, laboratory, etc.) and/or number of ranges.

The duration of an audit combined with another application is 1 day for each certification reference system.

For an admission application, the audit can be carried out if:

- the production quality requirements provided in chapter 2.4 have been satisfied for at least 1 month for products covered in the application;
- the applicant proves at least 10 days of production for each range to permit the study of the results of the quality assurance put in place.

3.3.1.2 Case of a complementary admission application

The steps described in section 3.3.1 above apply, with the specific consideration that the audit may be adapted or accompanied by a follow-up audit.

3.3.1.3 Case of an extension application

The steps described in section 3.3.1 above apply with the following specific considerations:

– in the context of an extension application for a modified certified product, the tests are defined according to the planned modification;

– the audit can be adapted or accompanied by a follow-up audit.

3.3.2 FOLLOW-UP AUDITS

Follow-up audits are intended to check, following admission, that the measures defined are still being maintained.

All of the measures described in section 3.3.1 apply.

Inspections

The auditor carries out at least the following audits, taking into account the information collected during the previous audit, the results of the last checks and any remarks made by the Specific Committee:

- verification of the effective application of the corrective measures announced as a result of any observations made during the previous audit;
- verification that the holder is respecting the quality requirements defined in the certification reference system;
- verification of the self-inspection records since the last audit, statistically for at least one certified product and for the products sampled for mark laboratory tests(*);
- verification of the sales documents;
- verification of changes to the characteristics of the certified products;
- testing and sampling as defined in sections 3.4 and 3.5.2.

(*) The auditor examines the applicant's recorded results and checks that inspections and tests are conducted regularly and that the inspection frequency is respected. The auditor verifies that the results of these inspections are satisfactory or, when this is not the case, inquires about the means implemented by the applicant to deal with non-conformities and correct production.

The duration of an audit is normally 1 day per manufacturing unit.

The audit duration may be adapted according to the risk: level of development of the quality system, organisation of the company (process, laboratory, etc.) and/or number of ranges.

Normal monitoring:

For the first two years, the normal frequency is 1 annual audit for each manufacturing unit benefiting from a right to use the QB mark.

Simplified monitoring:

Simplified monitoring may be applied, with an audit frequency reduced to 1 audit every 3 years, provided that:

- the holder has a current ISO 9001 certificate, distributed by a certifying body accredited by a member of the E.A. (European cooperation for Accreditation) or by a member of the I.A.F. (International Accreditation Forum);
- the production unit has not been the subject of any non-conformity, warning or sanction in the previous 2 years.

If an ISO 9001 certificate has been withdrawn or if the plant has been the subject of a sanction, the audit frequency shall then automatically be brought back to normal monitoring, for a minimum period of 2 years.

Heightened monitoring:

In the event of breach of the requirements in this certification reference system or if the Specific Committee makes a reasoned request, a heightened monitoring procedure can be initiated for a given period. This monitoring can be adjusted up to double the normal frequency of audits, with or without heightened monitoring of the holder and sampling for testing purposes in the production unit and/or in the distribution network.

In addition, any critical deviation observed during an audit, whether or not combined with a sanction, may justify a transition to heightened monitoring. The latter will be initiated by CSTB, possibly after recommendation from the Specific Committee, for a set period with or without stricter holder inspections and sampling for testing.

3.3.3 AUDIT REPORT

An audit report is established by the inspection organisation after the admission or follow-up audits. It is sent to the holder with observations made during the audit, which can be defined as below:

- Critical deviation: Major non-compliance with a requirement in the certification reference system that seriously calls into question the performance of the product/service or the effectiveness of the quality management system.
- Non-critical deviation: Minor non-compliance with a requirement in the certification reference system that does not call into question the performance of the product/service or the effectiveness of the quality management system.
- Opinion requested of CSTB: The auditor has identified a deviation. However, he/she requires further information in order to qualify the deviation as 'critical' or 'non-critical'.

  The deviation will be qualified jointly with the application administrator or manager following the audit.
- Weak point: Recorded drift with respect to the company's practices. The auditor draws the auditee's attention to a possible risk of deviation at the next audit. Weak points are documented in the 'Strong points/Weak points' sheet.
- Strong point: Outstanding performance by the company's quality management system (observation that the company exceeds the requirements of the certification reference system). Strong points are documented in the 'Strong points/Weak Points' sheet.

3.4 Sampling

3.4.1 ADMISSION/EXTENSION APPLICATION SAMPLING

3.4.1.1 General

Initial tests indicated in section 3.5.2.1 are carried out on products sampled by the application administrator or by the auditor, by correspondence or during an audit.

The applicant can choose to have sampling done:
- by an auditor during a plant visit, before the admission audit;
- by an auditor during the admission audit;
- by the applicant administrator, by correspondence, before the admission audit.

The number of sampled products is indicated in section 3.5.2.

On the date of the admission audit, the completion of initial tests must not have been more than one year prior. Otherwise, CSTB can take samples during the audit to check, at the mark laboratory, that the results are in agreement with previous tests.

3.4.1.2 In-plant sampling

The auditor has samples taken as required from stock and/or in the production unit for testing. Samples must have been produced no more than one year previous. For some destructive testing, it is possible to take samples of products eliminated due to minor defects in terms of appearance that do not entail non-conformity of the certified products.

An information sheet recording the sampling carried out is prepared on site and handed over to the applicant/holder.

When necessary, the holder/applicant cuts the samples, at the dimensions indicated for the test and without adhesive strip (side stripe cut), before delivering them to the laboratory. All specimens the width of which will exceed a tolerance of 10% will not be admitted.

The samples taken are marked with a distinctive symbol by the auditor. They are sent by and under the responsibility of the applicant to the mark laboratory in charge of conducting the tests, unless the auditor decides to take responsibility for them. The deadline for sending samples to the mark laboratory in charge of conducting tests is set in the sampling sheet included with the samples.

A copy of this sampling sheet will be systematically sent to the laboratory in charge of testing.

Packaging and transport arrangements must allow for test specimen integrity to be preserved.

The sampled batch must be kept by the manufacturer until the test report is issued, in conformity with the specifications of this reference system.

3.4.1.3 Sampling by correspondence

The application administrator established a sampling sheet based on batches (according to the calendar date of the production) available in the stock, which are communicated by the applicant. Products must have been produced no more than one year previous.

The selected products are sent to the mark laboratory(-ies) or to the subcontracted testing laboratory by and under the responsibility of the applicant within two weeks.

A copy of this sampling sheet will be systematically sent to the laboratory in charge of testing.

Hips-and-Ridges are sent in packaging provided for their range (rolls, not folded, etc.) or cut according to the above specifications, when required by the test. Packaging and transport arrangements must allow for test specimen integrity to be preserved.

When necessary, the holder/applicant cuts the samples, at the dimensions indicated for the test and without adhesive strip (side stripe cut), before delivering them to the laboratory. All specimens the width of which will exceed a tolerance of 10% will not be admitted.

The sampled batch must be kept by the manufacturer until the test report is issued, in conformity with the specifications of this reference system.

3.4.2 SAMPLING IN FOLLOW-UP

The sampling can be done off-site (to facilitate the grouping of the products to be tested throughout the year) or on site. The sampling can be done by the certification administrator or the auditor. The follow-up sampling will be different from one year to another. The cycle is restarted every 4 years. The sampling rules are as follows:

Year	Test	Families	Products
1	Tensile strength	F1(a) et F2(a)	Every product
	Butyl tensile strength	F1a, F2a, F3a	Every product
2	Adapatbility (G)	F1(a), F2(a), F3(a)	1 rigid product et 1 flexible product
	Butyl tensile strength	F1a, F2a, F3a	Every product
3	Behavior to the water (E)	F2(a) et F3(a)	1 product
	Butyl tensile strength	F1a, F2a, F3a	Every product
4	Ventilation (V)	F2(a) et F3(a)	1 product
	Butyl tensile strength	F1a, F2a, F3a	Every product

The certification administrator or the auditor will sample the whole hips-and-ridges or samples accordingly. For the number of samples for tests, refer to the § 3.5.3.

The auditor has samples taken as required from stock intended for sale and/or from the production unit for testing. Samples must have been produced no more than one year previous. The sampling can be done off-site or during the follow-up audit. For some destructive testing, it is possible to take samples of products eliminated due to minor defects in terms of appearance that do not entail non-conformity of the certified products.

An information sheet recording the sampling carried out is prepared on site and handed over to the applicant/holder.

When necessary, the holder/applicant cuts the samples, at the dimensions indicated for the test and without adhesive strip (side stripe cut), before delivering them to the laboratory. All specimens the width of which will exceed a tolerance of 10% will not be admitted.

The samples taken are marked with a distinctive symbol by the auditor. They are sent by and under the responsibility of the applicant to the mark laboratory in charge of conducting the tests, unless the auditor decides to take responsibility for them. The deadline for sending samples to the mark laboratory in charge of conducting tests is set in the sampling sheet included with the samples.

A copy of this sampling sheet will be systematically sent to the laboratory in charge of testing.

Packaging and transport arrangements must allow for test specimen integrity to be preserved.

The sampled batch must be kept by the manufacturer until the test report is issued, in conformity with the specifications of this reference system.

It is accepted that if these samples cannot be taken, the holder will send the samples requested by CSTB to the mark laboratory, within the time required. The holder may incur sanctions if they fail to send the sample(s) to the mark laboratory within the time required by CSTB.

In the case of an additional audit, the tests generated by the non-conformity observed are conducted by the mark laboratory.

Note: In case of simplified monitoring, in the non-audit years, the application administrator prepares a sampling sheet using batches (according to the calendar date of the production) available in the stock. The holder will send the cut products to the mark laboratory.

3.4.3 SAMPLING FOR MINOR MODIFICATIONS

When modifications declared as minor have been made to the products or to the production process for the products, the holder must prove that these changes do not affect the certified characteristics. Otherwise, samples are systematically taken and tests are performed in the mark laboratory, in particular to check the characteristics involved.

3.4.4 SPECIFIC CASE OF A MAJOR CHANGE IN THE PLANT PRODUCTION CONTROL SYSTEM

The application is processed as an extension application.

Complementary tests are performed by the mark laboratory.

3.4.5 SAMPLING FOR INSPECTION OPERATIONS IN SHOPS

For distributors whose right of use has been maintained, verifications may be carried out at CSTB's initiative.

CSTB carries out checks on the marking, appearance and dimensions of such products. CSTB reserves the right to sample these products, as needed, for testing in the mark laboratory.

The costs for these verifications are to be borne by the distributor, in accordance with Part 4 of the Administrative Appendix of this certification reference system.

3.5 Testing

3.5.1 TEST PROCEDURES

3.5.1.1 Adaptability of Hips-and-Ridges to small discontinuous roofing elements

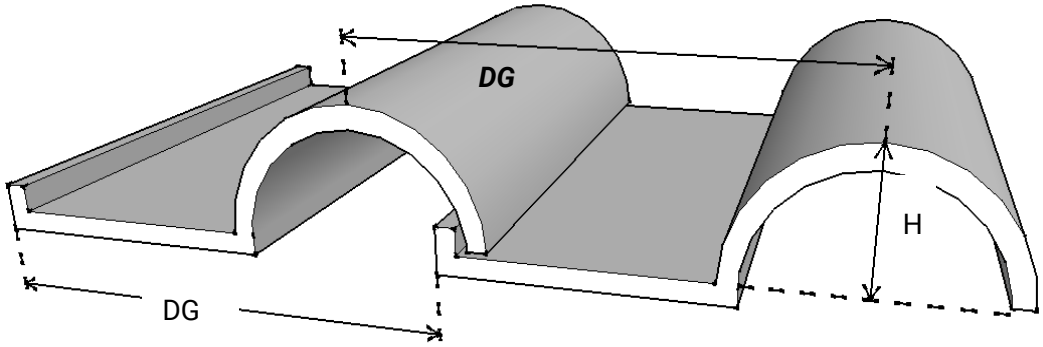
The adaptability of Hips-and-Ridges is arranged in 4 classes. This arrangement is based on the dimensions of small roofing elements defined either in the 40.1* and 40.2* series DTUs, the Technical Appraisals (ATec), the Technical Application Documents (DTA) or the Technical Experimentation Assessments (ATex).

The adaptability classes are defined according to the following ratio:

$$G=H/DG$$

Where
H = Height of the curved shape *
DG = Distance between the top of 2 consecutive curved shapes*

[*] measured at 2/3 from the front of the tile



Note: On the test jigs, distance DG is measured at the front of the tile since the curved shapes are straight.

Four jigs are defined and referenced. Each one corresponds to one of the four classes defined below:

- **Class G0:** small flat roofing elements (ratio = 0)
- **Class G1:** small roofing elements with slightly curved shape (ratio to 0.23)
- **Class G2:** small roofing elements with highly curved shape (ratio to 0.33)
- **Class G3:** small roofing elements with very highly curved shape (ratio to 0.36)

One fitness for use criteria for Hips-and-Ridges is the adaptability to the support shape. The side stripe must fit the shape of the small roofing elements after implementation (marouflage).

Every Hip-and-Ridge is tested once on the jig that corresponds to each adaptability class requested by the manufacturer, according to the applicable Technical Document 99035-01.

The test is conclusive when the criteria of the applicable Technical Document 99035-01 are fulfilled.

Otherwise, the Hip-and-Ridge is excluded for this fitness for use criteria.

3.5.1.2 Behaviour to water of the nailing stripe of Hips-and-Ridges

According to the adaptability class request, the behaviour of Hips-and-Ridges to driving rain and the effects associated with wind are determined by testing under the applicable Technical Document 99035-01.

Class E corresponds to the mean of the total quantity of water measured during the spraying test described in the applicable Technical Document 99035-01.

E	Quantity of water (g)
E1	≤ 5
E2	[5; 25]

If the Hips-and-Ridges fail to meet the E1 and E2 conditions, they cannot be certified.

3.5.1.3 Ventilation capacity

The ventilation needs of a roof in small elements are specified either in relevant 40.1* and 40.2* series DTUs, in the Technical Appraisals (ATec)/Technical Application Documents (DTA) or in the Technical Experimentation Assessments (ATex).

Ventilation sections (in cm^2/m) must be distributed on the upper and lower part of the roof. Ventilated Hips-and-Ridges participate to the upper ventilation of the roof.

The ventilation capacity of Hips-and-Ridges is expressed as follows:

V=x cm²/m

It corresponds to the ventilation at the ridge of both roof sides.

Ventilation tests must be performed when Hip-and-Ridge ventilation sections fail to satisfy all the following characteristics:

- They are measurable;
- They cannot be deformed;
- Their smallest dimension is greater than 3 mm.

Every Hip-and-Ridge whose nailing stripe is composed of superimposed perforations must be evaluated.

Every Hip-and-Ridge that is not included in the previous scope must be submitted to the certifying body to determine if tests must be performed.

When ventilation tests are required, the mean ventilation capacity V minus the standard deviation (expressed in cm²/m) is determined following the test method set out in the applicable Technical Document 99035-01.

If ventilation tests are not required, the determination of ventilation capacity (expressed in cm²/m) is made by measuring the openings of ventilation sections. The ventilation capacity is expressed as the sum of minimal geometric sections (low tolerance) on a 1-metre length.

3.5.1.4 Dimensional controls

Total Length

F1, F1a, F2, F2a Hip-and-Ridge family:

The measurement is taken at 3 points in the Hip-and-Ridge: on each side stripe element and on the central part of the Hip-and-Ridge (except ventilation openings), from one end to the other. For flexible Hips-and-Ridges, the product is rolled out (without stretching)

and is measured flat. The 3 individual measurements shall comply with the specifications of the table in § 2.4.2.4.4.

The measuring tool must be accurate to within 1 mm. Using a control rod to validate conformity inside the tolerance is an accepted alternative.

For Hips-and-Ridges longer than 5 m, the length is checked according to the procedure established by the manufacturer.

F3, F3a Hip-and-Ridge family:

The measurement is taken at 1 point of the Hip-and-Ridge: along the axis of its nailing stripe, from one end to the other. The measurement shall comply with the specifications of the table in § 2.4.2.4.4.

The measuring tool must be accurate to within 1 mm. Using a control rod to validate conformity inside the tolerance is an accepted alternative.

For Hips-and-Ridges longer than 5 m, the length is checked according to the procedure established by the manufacturer.

Total width

Hip-and-ridge family: F1 and F1a:

The measurement is taken perpendicularly to the axis of the Hip-and-Ridge at a minimum of 3 points distributed along the entire length of the Hip-and-Ridge. When measuring, either the Hip-and-Ridge can be configured spread out or the projected width of the Hip-and-Ridge can be used according to a procedure established by the manufacturer.

The measuring tool used shall be accurate to within 1 mm. Each individual value shall comply with the specifications from the table in § 2.4.2.4.4.

Hip-and-ridge family: F2, F2a, F3, F3a:

The measurement is taken perpendicularly to the axis of the Hip-and-Ridge at a minimum of 3 points distributed along the entire length of the Hip-and-Ridge laid flat. For Hips-and-Ridges with stretching capacity, the measurement is taken on minimum and maximum declared values.

The measuring tool used shall be accurate to within 1 mm. Each individual value shall comply with the specifications from the table in § 2.4.2.4.4.

Useful width of side stripes

The useful width is the part of the side stripes intended to cover the tiles.

The measurement of the useful width is performed when the side stripes are flat, not shaped. The useful width is measured from the end of the side stripe to the end of the nailing stripe at a minimum of 3 points distributed along the entire length of the Hip-and-Ridge. This measurement must be taken on each stripe.

The measuring tool used shall be accurate to within 1 mm. Each individual value shall comply with the specifications from the table in § 2.4.2.4.4.

Folding rate

The folding rate is determined with the following formula:

$$\text{Folding rate} = \frac{l_1 - l_0}{l_1} \times 100$$

Where l_1 : initial length of the fleece (at the beginning of the production line)

l_0 : folded fleece

The measurement can be done on the whole product or on a sample. The size of the sample is defined by the manufacturer and cannot be under 100 mm of length.

Hip-and-ridge family: F1, F1a, F2 et F2a :

The minimum control is done on each stripe/fleece in one (1) spot, this makes 2 measurements, or 2 samples tested in total.

Hip-and-ridge family: F3 et F3a :

The minimum control is done on one of the 2 stipe/fleece in the case that the folding is applied with the same cylinder, in 1 spot. This makes 1 measurement or 1 sample to be tested in total. If not, the measurement is performed like described in the last paragraph.

Thickness of side stripes

Given the difficulty of measuring the thickness of the lead and aluminium used for Hip-and-Ridge side stripes, the manufacturer must demonstrate that the thickness of side stripes complies with the specifications of the table in § 2.4.2.4.4 according to a procedure established by the latter.

Opening of ventilation sections

The opening of ventilation sections is measured using a calibrated rod or according to a procedure established by the manufacturer to ensure production consistency. The measurement is taken at a minimum of 6 points (3 on each side), distributed along the entire length of the Hip-and-Ridge.

Note: This check can be performed during another production step if the opening of ventilation sections is unlikely to be deformed during production.

3.5.2 ADMISSION/EXTENSION APPLICATION TESTS

3.5.2.1 Initial tests

The tests are carried out in accordance with the standards and complementary specifications set out in Part 2 of this certification reference system.

The tests are only admissible when they are performed as part of an admission application (receipt of 1, 2A or 2B and 4 standard letters by the certifying body). In the context of the application, if tests lead to product modifications, the documents of the application file must be updated accordingly. All type testing is not necessarily carried out on the same batch.

In case of an extension application, initial tests are carried out based on the intended modifications.

Initial testing is carried out under the responsibility of the mark laboratory(-ies)* in compliance with the technical specifications set out below (*by a competent independent laboratory recognised by the certifying body, cf. § 4.3):

Relevant family	Characteristics	Unit	Specification	Minimal number	Measurement method
F1, F2, F3 F1a, F2a, F3a	▪ Adaptability	Class	G0 to G3	1 specimen (cf. DT 99035-01 for the number of measurements)	cf. DT 99035-01 § 2.2
F1, F2, F3 F1a, F2a, F3a	▪ Behaviour to water	Class	E1 and E2	3 measurements on 1 specimen	cf. DT 99035-01 § 3.2
F1, F2, F3 F1a, F2a, F3a	▪ Ventilation capacity	cm^2/m	V=x	3 specimens	cf. DT 99035-01 § 4.2
F1, F1a, F2, F2a	▪ Nailing stripe/side stripe assembly at the initial state	N/50 mm	individual values ≥ 40 N/50 mm	5 specimens	cf. DT 99035-01 § 5.2
F2 F2a	▪ Nailing stripe/side stripe assembly after ageing: - UV exposure (402 hours) - freeze/thaw cycles (10 cycles) - heat/humidity cycles (45 days)	N/50 mm	individual values ≥ 40 N/50 mm	5 specimens for each type of ageing	cf. DT 99035-01 § 5.2 and § 6
F1a F2a F3a	▪ Qualification of adhesive strip resistance to peeling: - At initial state, tensile stress with a 90° angle - after heat/humidity cycles (7 days) - after low temperature ageing (-15°C) - after high temperature ageing (85°C)	N/50 mm	individual values ≥ 10.5 N/50 mm	5 specimens for each type of ageing	cf. DT 99035-01 § 5.2 and § 6

A test report is prepared and remitted to the holder within 1 month after testing. Samples sent by the manufacturer must be kept by laboratories until the certificate is issued.

3.5.2.2 Inspection of final products concerned by the admission/extension application

These inspections are carried out during the audit, in accordance with the standards and complementary specifications set out in Part 2 of this certification reference system as well as the technical specifications described below:

Site	Relevant family	Characteristics	Unit	Specification	Measurement method	No. of samples per test (1) (1st population)	No. of samples per retest (1) (2nd population)	Attributes method
U	All	Total length of Hip-and-Ridge	mm	-0.5%, +1.5%	§ 3.5.1.4.	2	2	(0 – 2; 1 – 2)
U	All	Total width of Hip-and-Ridge	mm	-5%, +5%	§ 3.5.1.4.	2	2	(0 – 2; 1 – 2)
U	All	Useful width of side stripes	mm	-5%, +5%	§ 3.5.1.4.	2	2	(0 – 2; 1 – 2)
U	All	Folding rate	%	-2%, +5%	§ 3.5.1.4.	2	2	(0 – 2; 1 – 2)
U	All	Thickness of side stripes	mm	-10%	§ 3.5.1.4.	2	2	(0 – 2; 1 – 2)
U	All	Opening of ventilation sections (2)	mm	-	§ 3.5.1.4.	2	2	(0 – 2; 1 – 2)

(1) 1 test on 1 Hip-and-Ridge per separate production order (PO) or batch. In this context, 2 batches or POs.
(2) The opening of ventilation sections is inspected whenever these latter are measurable.

Inspections marked U are carried out at the manufacturer's plant during the audit and under the supervision of a qualified auditor from the certifying body.

Attributes method:

The inspection method used is the attributes method by double sampling.

The result by attribute is given in the following format: (a – b; c – d).

NC corresponds to the number of defective, and therefore non-conforming, test specimens.

- On the first population:
  - If NC ≤ a: batch accepted,
  - If NC ≥ b: batch rejected,
  - If a < NC < b: the test is performed on the second population.
- On the combination of 2 populations:
  - If NC ≤ c: batch accepted,
  - If NC ≥ d: batch rejected.

If non-conformities are detected on tests of the 1st population during the admission/extension visit, new tests are performed on the second population at the mark laboratory. When non-conformities are detected on these new tests, the batch is considered non-conforming.

The auditor witnesses the inspections performed in the applicant's laboratory (or the beginning when the duration is too long). He/she keeps the inspection sheets at the end of the audit.

3.5.3 TESTS AND INSPECTIONS ON THE CERTIFIED PRODUCT (FOLLOW-UP)

These tests and inspections are carried out in accordance with the standards and complementary specifications set out in Part 2 of this certification reference system as well as the technical specifications described below:

Site	Relevant family	Characteristics	Unit	Specification	Measurement method	No. of samples per test (1) (1st population)	No. of samples per retest* (1) (2nd population)
U	All	Total length of Hip-and-Ridge	mm	-0.5%, +1.5%	§ 3.5.1.4.	1	1
U	All	Total width of Hip-and-Ridge	mm	-5%, +5%	§ 3.5.1.4.	1	1
U	All	Useful width of side stripes	mm	-5%, +5%	§ 3.5.1.4.	1	1
U	All	Folding rate	%	-2%, +5%	§ 3.5.1.4.	1	1
U	All	Thickness of side stripes	mm	-10%	§ 3.5.1.4.	1	1
U	All	Opening of ventilation sections (2)	mm	-	§ 3.5.1.4.	1	1
M	All	Adaptability test	Pass/Fail	-	cf. DT 99035-01 § 2	1 (4)	1 (4)
M	F2, F2a, F3, F3a	Behaviour to water	g	E1 et E2	cf. DT 99035-01 § 3.2	1 (4)	1 (4)
M	F2, F2a, F3, F3a	Ventilation	cm^2/m	V=x	cf. DT 99035-01 § 4.2	3 (4)	3 (4)
M	F1, F1a, F2, F2a	Nailing stripe/side stripe assembly at the initial state	N/50 mm	Individual values ≥ 40 N/50 mm	cf. DT 99035-01 § 5	1 (4)	1 (4)
M	F1a, F2a, F3a	Resistance to tensile stress of the adhesive strip at 90° at initial state (3)	N/m	Individual values ≥ 10.5 N/50 mm	cf. DT 99035-01 § 5	1 (4)	1 (4)

(1) 1 test on 1 Hip-and-Ridge per production order (PO) or batch. In this context, 1 batch or PO. For on-site tests (U), retests are performed on site. For tests conducted at the mark laboratory (M), twice the samples are taken in anticipation of possible retesting. For tensile testing, 5 test specimens are taken, along with another 5 for retesting from the same Hip-and-Ridge

(2) The opening of ventilation sections is inspected whenever these latter are measurable.

(3) In the case of a change in adhesive strip or when the inspections from § 2.4.2.1 are not available (density and tensile test reports provided by the supplier and/or the holder).

(4) Tests are performed in alternately from one year to another: tensile strength, adaptability, behaviour to water and ventilation. All is restarted every 4 years (for the sampling, see § 3.4.2).

Inspections marked U are carried out on site in the manufacturer's laboratory during the audit under the supervision of a qualified auditor from the certifying body.

Tests marked M are carried out in the mark laboratory(-ies)* on products from which the auditor collected samples. (*by competent independent laboratory recognised by the certifying body, cf. § 4.3).

3.5.3.1 Attributes method

The inspection method used is the attributes method by double sampling.

The result by attribute is given in the following format: (a – b; c – d).

NC corresponds to the number of defective, and therefore non-conforming, test specimens.

- On the first population:
  - If NC ≤ a: batch accepted,
  - If NC ≥ b: batch rejected,
  - If a < NC < b: the test is performed on the second population.
- On the combination of 2 populations:
  - If NC ≤ c: batch accepted,
  - If NC ≥ d: batch rejected.

3.5.3.2 In-plant checks

If non-conformities are detected during inspections of the 1st population in the plant laboratory (U) during the visit, a second check is performed on the second population in the plant laboratory. If non-conformities are detected during this check, the batch is considered non-conforming and results in a 'deviation'.

The auditor witnesses the inspections performed in the holder's laboratory (or the beginning when the duration is too long). He/she keeps the inspection sheets at the end of the audit.

3.5.3.3 Tests in mark laboratories

If tests are carried out under the responsibility of the mark laboratory(-ies) or the subcontracting laboratory, the manufacturer must send the cut Hips-and-Ridges according to the specifications of § 3.4.

The tests are conducted only if the laboratory has received the copy of the sampling sheet prepared by the auditor. A test report is prepared and remitted to the holder within 1 month after testing. The samples sent by the manufacturer must be kept by the laboratories until the test report is issued.

If non-conformities are detected on sampled products during follow-up, new tests are performed by the mark laboratory on a new batch.

A delay of 1 month or more in sending the new batch to the mark laboratory leads to suspension of the right to use the mark on the product.

If there is a non-conformity in the results on the new tests, the batch is considered non-conforming and leads to a deviation.

A complementary audit can be conducted to check the corrective actions implemented by the manufacturer.

Part 4
The Stakeholders

The organisations involved in the procedure for granting the right to use the QB mark and in monitoring the certified products are specified below.

4.1 The certifying body

The QB mark is the property of CSTB, which is a certifying body. CSTB specifies the governance rules and the operating conditions applicable to the marks. Furthermore, it takes responsibility for the application of the reference system and the decisions taken in this context.

Centre Scientifique et Technique du Bâtiment (CSTB)
Direction Enveloppe du Bâtiment
Division Certification et Evaluation de l'Enveloppe du Bâtiment
84, avenue Jean Jaurès
Champs sur Marne
F-77447 Marne La Vallée Cedex 2
☎: +33 (0)1 64 68 82 74

http://evaluation.cstb.fr/

4.2 Audit body

The audit functions for the manufacturing unit and, as the case may be, on the utilisation premises, are carried out by the following organisation, designated the audit body:

Centre Scientifique et Technique du Bâtiment (CSTB)
Direction Enveloppe du Bâtiment
Division Certification et Evaluation de l'Enveloppe du Bâtiment
84, avenue Jean Jaurès
Champs sur Marne
F-77447 Marne La Vallée Cedex 2

http://evaluation.cstb.fr/

The auditors have the inspection right on the premises of any applicant or holder within the framework of their assignments.

4.3 Test bodies

Whenever the quality assurance operations carried out within the framework of QB mark usage include tests on products, such tests are carried out at CSTB's request by the following laboratories, referred to as the mark laboratories:

Centre Scientifique et Technique du Bâtiment (CSTB)
Direction Enveloppe du Bâtiment
Division Certification et Evaluation de l'Enveloppe du Bâtiment
84, avenue Jean Jaurès
Champs sur Marne
F-77447 Marne La Vallée Cedex 2

http://evaluation.cstb.fr/

Centre Scientifique et Technique du Bâtiment (CSTB)
11 rue Pichérit – BP 82341
F-44323 Nantes Cedex 3

http://evaluation.cstb.fr/

Within the framework of a testing recognition agreement signed with CSTB, the following laboratory may, at CSTB's request, perform all tests herein, with the exception of ventilation capacity and UV ageing tests. The tests shall be performed in accordance with Part 2 of the reference system.

TESTING LABORATORY:
Centre Technique de Matériaux Naturels de Construction (CTMNC)
200 Avenue du Général de Gaulle, 92140 Clamart
☎: +33 (0)1 45 37 77 77

4.4 Subcontracting

The different functions described in sections 4.2 and 4.3 may be carried out, after opinion from the Specific Committee, where appropriate, by other audit bodies or recognised laboratories with which CSTB has established a sub-contracting contract.

Applicants/holders are informed of the subcontracting of a service once the assessment activity programme has been drawn up. If necessary, they are formally informed before any activity is started.

4.5 Specific Committee

An impartial consultative authority is established called the Specific Committee, the Secretariat of which is provided by CSTB.

The Specific Committee is requested to give its opinion on the following:

- the initial draft certification reference system or the draft revised version, as specified in the Consumer Code;
- the preparation of advertising and promotional activities that fall within its competence;
- the selection of bodies participating in the certification process and the examination and implementation of recognition agreements.

It can be consulted about any other question pertaining to the application concerned and, in particular, about any interpretation of the certification reference system with a view to taking decisions regarding dossiers in accordance with the certification reference system and at CSTB's request.

The composition of the Specific Committee is set to respect representation between the different parties concerned, which does not lead to any of them dominating and which guarantees their relevance.

Its composition is as follows:

- A President chosen from the members of the colleges defined below;
- A Vice President: a CSTB representative;
- Manufacturers College (Holders): from 4 to 9 representatives;
- Users/Specifiers college: from 4 to 9 representatives;
- Technical and Administrative Bodies College: from 4 to 9 representatives.

The representatives of audit bodies and mark laboratories have the right to participate in the meetings of the Specific Committee.

The Specific Committee issues decision notifications and its members shall be precluded from receiving any remuneration for the functions entrusted to them.

Members are appointed for a three-year term. This appointment is renewable by tacit agreement for further successive periods of one year, not exceeding three renewals, unless notice of termination is given without due cause by CSTB or the member, by registered letter with acknowledgement of receipt, three months prior to the scheduled end of the ongoing period at the time of renewal.

The Specific Committee's President can change every year.

The members of the Specific Committee formally undertake to keep confidential all information, particularly of an individual nature, communicated to them.

The Specific Committee may, where appropriate, decide to set up working groups or subcommittees and define their missions and responsibilities. The composition of the working groups is to be validated by the Specific Committee, those working groups being composed of at least one representative of the 'Manufacturers' College, one representative of the 'Users/Specifiers' College and one representative of CSTB. It may call upon professionals, external individuals or holders that are not members of the Specific Committee.

Part 5
Glossary and Terminology

Adaptability:	Capacity of an element to be compatible with another element when they are assembled in a coherent whole.
Admissibility:	Study of a dossier which enables the application to be examined. The admissibility relates to the administrative and technical parts of the dossier.
Admission:	Application by which applicants request for the first time the right to use the QB mark for a product; they declare that they understand this certification reference system and undertake to respect it.
Applicant/Holder:	Legal entity that controls and/or is responsible for respecting all the requirements defined in the QB mark certification reference system. These requirements cover at least the following steps: design, manufacture, assembly, quality control, marking, packing and market release and specify the critical points in the different steps. Any person who modifies the container and/or content of the product (for example, packets or loose cement distribution) becomes an applicant and may not be considered as a distributor. Therefore, this person must apply for the right of use.
Audit:	See Standard NF EN ISO 9001.
Certification Reference System:	Technical document that defines the characteristics that a product, a service or a combination of products and services shall have and the methods for inspecting the conformity with these characteristics, as well as the methods for communicating on the certification (including the content of the information).
Certification Scheme:	Specific certification system for well-defined products to which the same specified requirements and specific rules and procedures apply.
Complementary admission:	Application by which a holder wants to benefit from the right to use the QB mark for a new product or a new production entity.
Curved shape:	More or less convex profile of a small discontinuous roofing element.
Day of production (perpetual calendar):	Number of the day in the year (manufacturing date).

Distributor:	Person who distributes the applicant/holder's products and who does not take any action on the product to modify its compliance with the requirements of the NF mark. Distributors may be of the following types: - distributors who distribute the product under the holder's trademark. In this case, no action is to be taken as part of the QB mark. - distributors who distribute the product after changing the trademark. The applicant/holder shall apply to maintain the right of use. If the distributor does not wish to have explicit reference to the manufacturer, then an application for admission to the QB mark shall be made by the distributor. In that case, the manufacturing plant is not mentioned on the certificate. Depending on the various operations carried out by the applicant/holder or the distributor, the sites audited and the audit duration within the framework of initial certification or monitoring are to be defined case by case.
Elevating plate:	Complementary support, most often wood, attached to the structural frame along the axis of the ridges or the hips. It is intended for the mechanical fixation of the Hip-and-Ridge and of the hip or ridge, in order to form a cohesive unit.
Elongation at break:	Measurement of the length increase that a specimen with a defined section can undergo under tensile stress before it ruptures.
Elongation:	Length increase of a material under the effect of a tensile stress.
Extension:	Application by which a holder requests the extension of their right to use the QB mark for a certified product with characteristics that have been modified.
Granting of the right to use the QB mark:	Authorisation granted by CSTB to an applicant to affix the QB mark on the product for which the application has been submitted.
Hip cap/Hip:	Prefabricated accessory specifically made to ensure the waterproofing of the hip (NF P 30.101) or right or curved sloping protruding line formed by the lateral intersection of two roof pitches (NF P 30.101).
Hip-and-Ridge:	Prefabricated roofing accessory specifically made to seal ribs or corrugations in roofing or any gaps in irregular areas of roofing, ridges, edges or eaves (NF P 30.101).
Intrados (lower surface):	Inner side or lower surface of a hip, a ridge or a tile.
Maintenance:	Application by which a holder requests the maintenance of their right to use the QB mark for a product intended to be marketed by a distributor under a different brand and/or trade reference, but without modifying the certified characteristics.
Marouflage:	Operation consisting in pressing a shapable material on a support to fit its shape. The marouflage of the side stripes of a Hip-and-Ridge consists of placing and shaping them on the last line of small discontinuous roofing elements (just under the hip or the ridge) making contact between side stripes and the roofing elements.

Nailing stripe:	Central part of a Hip-and-Ridge that includes a ventilation system and to which the Hip-and-Ridge side stripes are attached.
Perforation:	Measurable and reproducible transformation of the base material.
Product:	Element resulting from a process or manufacturing process coming from a specific manufacturing unit, defined by a trademark, a specific trade reference and technical characteristics.
Range of Hips-and-Ridges:	Hip-and-Ridges with the same design and composition, all colours included, where the only variation is the product's width. Other variations, such as folding rates of the side stripes, could require complementary tests.
Reference:	A range of Hips-and-Ridges is composed of several references. These references make it possible to identify the characteristics of the Hips-and-Ridges in a range (width, folding rate, colour, etc.).
Renewal:	Application by which the holder requests the renewal of their right to use the QB mark before the validity of their QB certificate ends.
Representative [EEA]:	Public body or individual based in the EEA who represents the applicant/holder outside the EEA and has a written mandate from the latter signifying that the former may act on the latter's behalf and specifying under which context (missions and associated responsibilities and financial aspects, complaints, contact for the certifying body, among others) in the QB mark certification process according to the provisions in the certification reference system. The representative may be the distributor or importer; their different functions are clearly identified. The representative concept is vital when applicants are outside the EEA. Depending on the markets, the distributor concept may not be relevant.
Ridge cap:	Prefabricated accessory specifically made to ensure the ridge is watertight (NF P 30.101).
Ridge:	Line, right or oblique, formed by the upper intersection of two pitches or by the upper line of a single pitch roof (NF P 30.101).
Side stripes:	Lateral part of the Hip-and-Ridge with a shapable material intended to cover the subjacent small discontinuous roofing elements by fitting perfectly to their shape.
Subcontracting:	A company carries out some of the production steps for the certified products, under the control of the QB mark holder.
Suspension:	Decision communicated by CSTB which cancels the authorisation to use the QB mark temporarily and for a specified period of time. The suspension may be issued as a sanction or in the event that the right to use the mark is temporarily renounced by the holder. Suspension is accompanied by a ban on using the mark on future products. It shall be for a maximum period of 6 months, renewable once, following which a withdrawal of the right to use the QB mark shall be announced if no action has been initiated by the holder. The sanction notifications which affect the usage right (suspension/withdrawal) are signed by CSTB Management.

Transverse area or useful width:	The visible part of an implemented tile, measured perpendicularly to the pitch (NF P 30.101).
Under-ridge:	Tile or roofing accessory that lays under the ridge tiles (NF P 30.101).
Ventilated Hip-and-Ridge:	Prefabricated roofing accessory with nailing stripe and side stripes enabling under-roof ventilation and water protection for roof hips and ridges.
Ventilation capacity:	Capacity to exchange air in the ventilated space, situated under the small roofing elements, from the low part of the pitch (entering by the eaves) to the high part of the pitch (exiting by the ridge). For Hips-and-Ridges, ventilation capacity is expressed in cm^2/m.
Ventilation:	Exchange of air in the ventilated space, situated under small discontinuous roofing elements, from the low part of the pitch (entering by the eaves) to the high part of the pitch (exiting by the ridge).
Warning:	Non-suspensive sanction notified by CSTB. The product is still marked, but the holder must correct the deviations observed within a defined time period. When a warning is accompanied by an increase in the number of inspections, the actions must be launched within a defined time period. The warning may only be renewed once.
Withdrawal of the usage right:	Decision communicated by CSTB to cancel the right to use the QB mark. A withdrawal may be pronounced as a sanction or in the case of abandonment of the QB mark usage right by the holder.