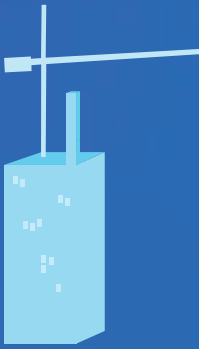




# The certification of European construction products



Every year, [SCOR Global P&C's Inherent Defects team](#) organises a morning seminar for its clients (*Matinée Décennale*), during which a technical subject of common interest to the insurance and reinsurance industry is presented by renowned external experts: in 2012, the theme was product certification.

The text of this publication is a translation of the [presentation given by Yannick Lemoigne](#), a member of the *Centre Scientifique et Technique du Bâtiment* (Scientific and Technical Construction Centre), during the 6<sup>th</sup> *Matinée Décennale* on the certification of construction products.



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# CERTIFICATION | YANNICK LEMOIGNE



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## Definition

Certification makes it possible to attest to the compliance of a product, a service or a process with a set of requirements defined and described in a certification benchmark. It may deal with very diverse themes. It may relate to health and safety in the workplace, the quality of management (standard ISO 9001), or the environment (standard ISO 14000). It is therefore a cross-sector, multi-branch activity, which concerns a large number of agents.

In the construction field, it mainly concerns 4 categories:

- Construction products or equipment
- Construction processes (design, installation, etc.)

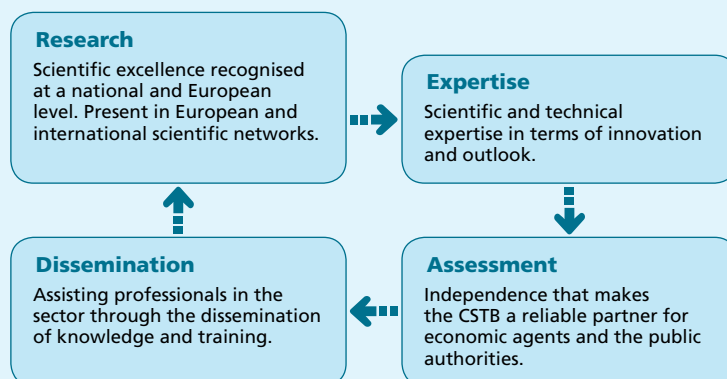
- Professional qualifications (all areas, from service to management)
- All types of works: total or partial work, towns, districts, etc.

In general, and from a practical point of view, certification includes audits, inspections or tests conducted by a third party (laboratory, certification body, etc.). If the results are positive, the certification body issues a certificate attesting the quality of the “product”. The agent may then display a marking on its product attesting to its qualities.

### An example of a certification body: the CSTB (*Centre Scientifique et Technique du Bâtiment – Scientific and Technical Construction Centre*)

The CSTB is the scientific and technical certification body in France. It is a state-funded industrial and commercial establishment (Etablissement Public Industriel et Commercial or EPIC) for research and expertise in the field of construction and the surrounding urban environment, reporting to the Ministry of Regional Equality and Housing.

#### 4 key activities



#### The CSTB in figures

- 598 technical opinions published
- 195 new technical opinions over the year
- 95 technical experimentation assessments (ATEX)
- 84 Pass Innovation certificates
- 1500 certification holders
- 50% foreign clientele

It should be noted that not all certifications are equal, which means that you need to have the right information to be able to fully judge their value.

In France, certification has a twofold nature: it may be required by the State regulations, in which case it is classed as regulatory certification, or it may be voluntary, in which case it is the market demands certification of a product by a third party body.

The main objective of regulatory certification is the protection of users; it concerns products with high safety stakes such as gas safety valves. Nevertheless, this kind of certification remains rare.

The objective of voluntary certification is mainly contractual performance: the company aims to objectively demonstrate that the product, service or process it markets fully meets the level of quality required by the client under the contract.

It should be noted that a certification mark is not necessarily associated to a type of certification. The NF mark, for example, may be used in both regulatory and voluntary certification.

Each European State has its own approach to certification. In France, the emphasis is on consumer protection. The 2008-776 French Consumer Code Act regulates and defines the process of certifying products and services.

To ensure the certification is recognised, the process should be conducted by a third party certification body that is independent from the applicant (i.e. from the importer, the supplier, the service provider or the client). As a first step, the certification body should establish a certification benchmark and involve all the parties concerned by the certification: authorities, users and prescribers. Moreover, the certification body itself should be accredited, thereby demonstrating the objectivity of its assessments. The classification "certification benchmark" (*référentiel de certification*)

is important because it subjects the French organisation to the regulations in force and thus enables it to issue a certification that, if necessary, may be recognised by the French authorities.

As a second step, the certifying body, by formal and contractual request, will determine whether the product or service fully complies to the established certification benchmark.

If the results are positive, the product or service may then be awarded the certification and display the certification mark. In this event, information relating to the certification of a product or service must be easily accessible to the user.

## **Added Value**

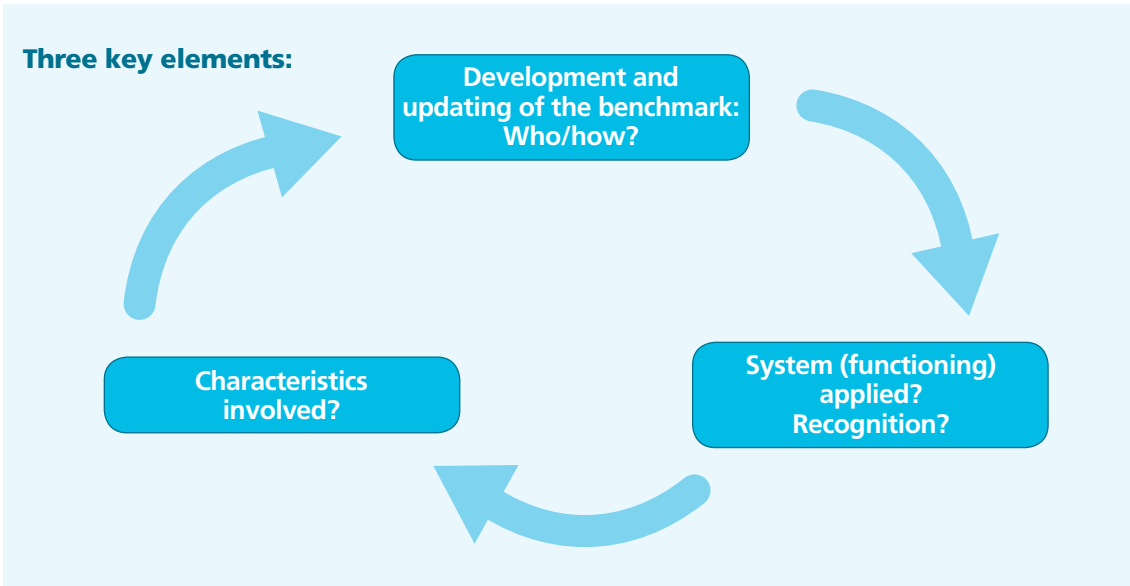
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Certification represents genuine added value, for both the applicant and the consumer. It puts consumers in a position where they can appreciate the performance of a product, a service or a process, and enables them to gain confidence. For the applicant, it is an opportunity to highlight the quality of what it is marketing, and to assess both its own organisation and the product in question. Certification also enables equitable competition between the various market agents (national, European and international), because it leads to an assessment of products according to shared rules and criteria. Finally, it is a significant commercial argument. Although certification is a gauge of confidence, it is nonetheless necessary to maintain a discriminating attitude towards it. When faced with a certification, it is important to bear in mind three key elements: the development and implementation of the certification

### **2008-776 French Consumer Code Act**

**Article L.115-27** "Certification of a product or service subject to the provisions of this section is constituted by the activity by which an organisation, independent of the manufacturer, the importer, the supplier or the service provider, attests to the fact that a product or a service, or a combination of products and services, conforms to the characteristics described in a certification benchmark". The certification benchmark is a technical document defining the characteristics that a product or a service, or a combination of products and services, should display, and the methods used to monitor compliance with these characteristics. The certification body is responsible for drawing up a certification benchmark, and collects the viewpoints of the parties concerned.

**Article L.115-28** "Only organisations that have been accredited by the national accreditation authorities may proceed with the certification of products or services...". "Any reference to certification in the advertising, labelling or presentation of any product or service, as well as on any related commercial documentation, must be accompanied by clear information providing the consumer or user with easy access to the nature of the certified characteristics. Benchmarks may be consulted free of charge at the premises of the certifying body, or copies may be sent out at the expense of the applicant".



benchmark, the certification process and finally the characteristics taken into account for certification.

1<sup>st</sup> key element:

- A certification benchmark may be developed simply on the basis of standards, which may be European standards or harmonized European standards. The latter are issued by the European Standardisation Committee (CEN). The mission of this organisation, which is mandated by the European Commission and the member States, is to create common assessment methods for European products. The CE mark, for example, is based on harmonized European standards issued by the CEN.
- The certification benchmark may also be developed by the certification organisation chosen by the applicant. In this event, questions should be asked about the certifying body: is it a private organisation that could be influenced in some way, or is it an independent organisation? In France, the Consumer Code requires the certifying body to be a duly-authorized third party, and stipulates that the certification benchmark be established after the opinions of the parties concerned have been collected. It also stipulates that the benchmark should be accessible to everyone. This is not always the case for international services.

2<sup>nd</sup> key element:

- Let us now look at the fundamentals of the certification process. First of all, we should consider the way in which the tasks are allocated during the process between the certifying body and the certified organisation: who chose the sample to be tested, for example? Where did this sample come from, did the applicant provide it or did the certifying body select it?

With regard to the challenges or risks associated with the product to be certified, the tests scheduled for the certification process should be considered: initial audit, initial tests, follow up (and frequency) audit, follow up (and frequency) tests, etc.

For example, a certification issued following a single initial audit is not as relevant as a certification that includes both initial audits and tests and audits and tests conducted for monitoring purposes.

In addition, it is also important to take into account the notification or accreditation of the technical body and/or the certification process. Notified bodies are designated and approved by the member States of the European Union. Notification is granted to certifying organisations that are authorised to issue a certificate of compliance with CE marking requirements. By issuing notification to a certifying organisation, the States recognise its technical competence. In France, the Consumer Code requires that certifying body be accredited by the French Accreditation Committee (COFRAC). This committee assesses the certifying body's compliance to standard NF EN 45011. Standard NF EN ISO/CEI 17000 defines accreditation as an "Attestation issued by a third party, relating to a compliance assessment body, and constituting a formal recognition of the authority of the latter to conduct specific activities relating to compliance assessment". In order to obtain its accreditation and keep it, the certifying organisation must be regularly audited by the COFRAC. Within the European Union, regulation CE 765/2008 of 9 July 2008 and law 2008-776 of 4 August 2008 stipulate that there can only be one accreditation body per country.

The certification bodies must, particularly for notification purposes, be able to provide evidence that they are insured against the consequences of failures in their activity. This insurance must cover a geographical area corresponding to the certification of such bodies, for example Europe for a notified body issuing certificates of compliance for the CE mark.

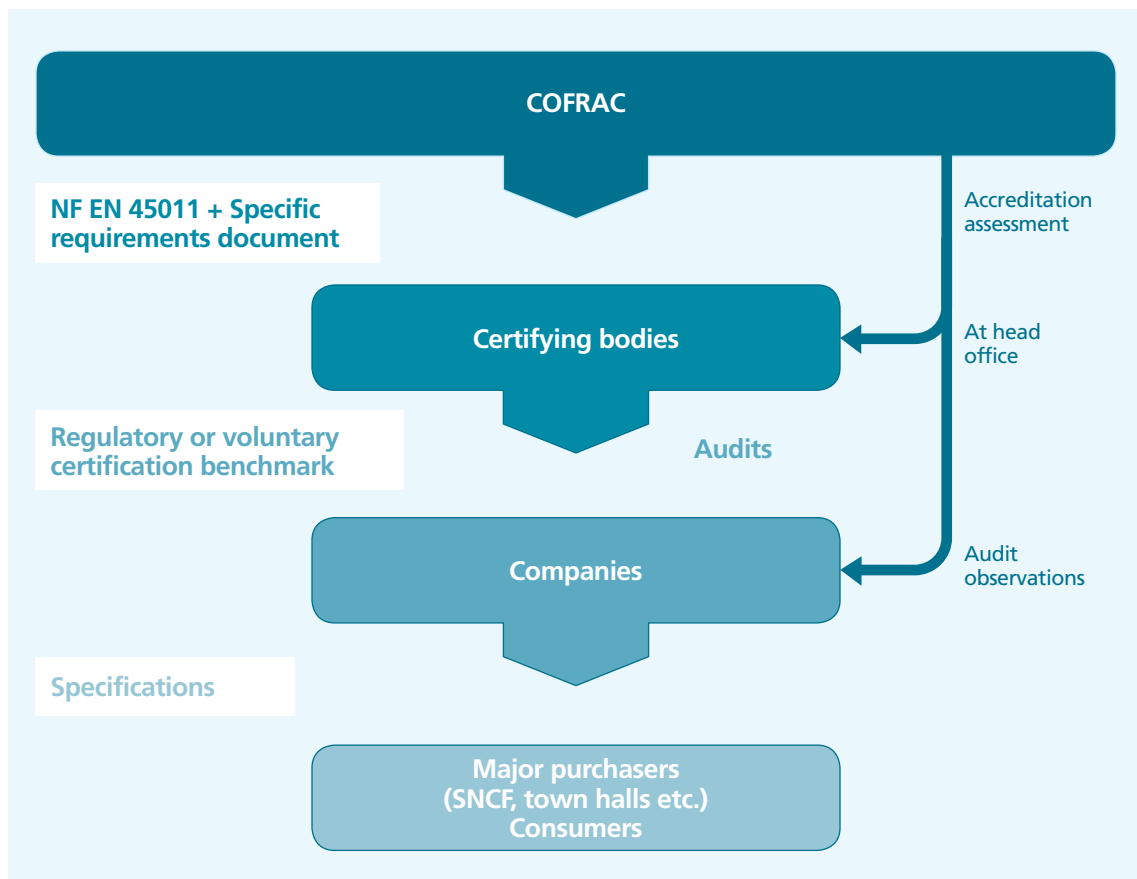
the tiles could potentially last for several decades or even centuries, the user may want to change them much sooner for diverse reasons.

Nevertheless, care should be taken to avoid adverse impacts: the multiplication of tested features may very rapidly render the certification too costly.

3<sup>rd</sup> key element:

- It is necessary to consider is the nature of the characteristics taken into account for certification. This involves the relevance of the characteristics to the use of the product. For example, in the case of a road sign, the durability of the colour is a very important feature, because it is linked to the safety of road users. Conversely, for the average consumer, the durability of tiles affixed with adhesive (i.e. the durability of the tiles or the adhesive) may be less important: even if

Besides, not all users place the same importance on the features of a product and although the durability aspect of tile adhesive may be less important for one individual, it may, on the other hand, be of the utmost importance for an insurer which provides inherent defects insurance. It is necessary to achieve a balance between the features of the product and what it is used for. This implies certification with a scope that varies in accordance with market needs. Finally, the defined certificates and performances must be accessible to all.



## Specific cases

Certification may take specific forms, but the principle always remains the same: a duly authorised organisation or agent is called upon to conduct an audit, tests or supervisory controls on an applicant to check whether a product, service or process complies with a certification benchmark. Thus, we may consider diagnostic surveys (lead, asbestos, etc.) as a specific form of certification. This appears increasingly in French legislation and it provides greater clarity to transactions, particularly in the real estate sector.

Another specific instance of certification is technical supervision. In France, this is compulsory for properties or building with the capacity to house the amounts of people defined in categories one to four<sup>1</sup>, for high-rise buildings (*Immeubles de Grande Hauteur* or *IGH*) and for underpinning work relating to solidity, finished shells and personal safety. This kind of certification is designed to comply with technical regulations and rules. The State approves the bodies it recognises as being competent to conduct technical supervision.

Performance declaration and the CE mark on construction products demonstrate compliance to a specific assessment. This is a regulatory procedure. A manufacturer must establish an attestation of conformity (AoC) for its product and attach the CE mark to it once it has satisfied the requirements of technical European specifications: harmonised European standards or European technical assessment<sup>2</sup>. This marking is not solely delivered to European products: Chinese products, for example, may also benefit from it. The assessment of performance for CE marking only concerns features considered to be essential by the harmonised specifications, i.e. the harmonised European standards or European assessment documents. These features relate to the basic requirements applicable to works:

- Mechanical strength and stability
- Safety in the event of fire
- Hygiene, health and the environment
- Safety in use and accessibility
- Protection against noise
- Energy economy and heat retention
- Sustainable use of natural resources

Based on the harmonisation of European standards, this marking contributes to the free circulation of construction products within the European single market. It is neither a mark of quality, nor a certification. The CE logo indicates that the manufacturer is committed to the compliance of its product with the applicable European legislation.

There are 5 Classes of Assessment and Verification of Constancy of Performance (AVoCP) relating to the use of the CE marking on construction products. These classes are categorised from 4 to 1+, with 1+ representing the highest protection stakes and consequently the strictest controls.

### 5 Classes for the assessment and verification of constancy of performance:

- **Class 1+/1**, certification of the constancy of performance by a notified body.
- **Class 2+**, certification of factory production control by a notified body.
- **Class 3**, determination of product type by a notified laboratory.
- **Class 4**, declaration by the manufacturer.

These 5 assessment classes all share the same basis: the control of the manufacturer's factory production. This condition is common to all classes. The intervention of a certification body when determining the product type is necessary from system 3, however it is the manufacturer that chooses the sample to be tested and passes this to the laboratory in charge of the tests. A test report is subsequently delivered to the manufacturer, which can then make its performance declaration.

In class 2+, the certification of factory production control is conducted by a certification body. This certification concerns the verification and control methods required by harmonised European standards, or European technical assessment for non-standard products. This system targets the methodology rather than the product itself.

Classes 1 and 1+ are used for certification of the constancy of performance by a notified body. They are designed to certify the performances declared with regard to the essential characteristics of the construction product.

*(1) Category 1: more than 1500 people; Category 2: between 701 and 1500 people; Category 3: between 301 and 700 people; Category 4: 300 people and above, with the exception of establishments included in category 5; Category 5: establishments described in Article R.123-14 where the amount of people received is lower than the minimum figure set by the security regulations for each type of use. Article R123-19 of the French Construction and Housing Code.*

*(2) European technical assessment is requested by the manufacturer of a non-standardised construction product (product not covered, or totally or partially covered by a harmonized European standard). Consequently, the performance declaration and CE marking for such products are voluntary.*



## Comparison of 2 examples of certification

	CE Marking	Market demand
Tile adhesive	AVoCP system 3: <ul style="list-style-type: none"> <li>• resistance to traction</li> </ul>	Third party certification: <ul style="list-style-type: none"> <li>• Workability and setting time</li> <li>• Compatible underlying material</li> <li>• Type of bonding (simple/double)</li> </ul>
Cement	AVoCP system 1+: (tests/sample taking every 2 months) <ul style="list-style-type: none"> <li>• Mechanical strength</li> <li>• Physical + chemical characteristics</li> </ul>	Third party certification: (tests/sample taking every month) <ul style="list-style-type: none"> <li>• Specific use</li> <li>• Specific composition</li> </ul>

Let us now compare two examples of certification for construction products: tile adhesive and cement. Because tile adhesive does not play a fundamental role in the security of works, the member States have chosen to apply class 3. This involves an initial test, where the manufacturer sends a sample of its product to a laboratory so that this can be subjected to tests, for example to determine its resistance to traction, or with regard to any other feature within the scope of CE marking.

For cement, which is a key product for construction (with a structural role), the 1+ class for the assessment and verification of the constancy of performance is used. This certification requires tests and sample taking every two months. The objective is to test the product's mechanical strength and its physical and chemical characteristics – in short, its fundamental characteristics.

For the manufacturers, the controls required to apply CE marking do not necessarily relate to market needs in terms of verifying product performance: for example, an entrepreneur will be more interested in setting time or workability, which are not taken into account by CE marking. Consequently, manufacturers often turn to a third party to obtain additional certification for their products, services or processes.

This certification takes into account a wider range of characteristics, and proposes more frequent sample taking. This practice enables the manufacturer to verify the quality of its product and gives the user more guarantees and information regarding the quality of the product. The NF marking is one of these additional certifications, for example, along with markings from certifying organisations such as ACERMI or Certifié CSTB Certified for the CSTB.

## Certification, labelling and process evaluation

It is important to distinguish certification, labelling and process evaluation. Certification is an attestation of the compliance of a product or a service with a set of requirements defined and described under a defined system and in a specific context. It involves comparing works, a product or the competence of an agent compared to a benchmark defined previously and in conjunction with all the parties concerned by the product. This process is regulated in France and controlled by accreditation.

Conversely, the attribution of a label is a more flexible process. Labelling does not yet have a strict legal definition, unlike the certification of a product or service. Moreover, it may involve a marking created jointly by a manufacturer and an organisation; the manufacturer may also be the co-owner of the label used by its product. Finally, in certain cases, the manufacturer itself chooses the sample to be tested for attribution of the label.

Process assessment consists, in a given context, of determining the technical recommendations that can guide agents' decisions relating to the successful completion of a defined construction project. This assessment may cover different construction phases, from design and construction to maintenance.

To summarise, the certifications are designed to guide and inform users. They provide information with high added value, in both professional and commercial terms. Although a marking is present in order to provide more information to the user, users should nevertheless approach markings with a discriminating eye in order to make optimal use of them.

