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Implementation Rules for CE-certification of Execution of steel structures and aluminium structures according to EN 1090-1

REVISION 05

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Proposed by the Technical Bureau 3 on 23.11.2023, Approved by the Management Body on 15.12.2023. Date of application: 01.01.2024

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OCAB CE1148

OCBS CE1148

Implementation Rules

TRA CE EN 1090 Revision 05

Approved by the Management Body on 15.12.2023

Implementation Rules for CE-certification of Execution of steel structures and aluminium structures according to EN 1090-1

CONTENT

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1 DOMAIN OF APPLICATION AND SCOPE

These Implementation Rules, hereafter also referred to as 'TRA CE EN 1090', supplement the Particular Rules for the assessment and verification of constancy of performance for metallic construction products of OCAB-OCBS, hereinafter referred to as 'BRP CE'.

This document sets out the specific procedure for the assessment and verification of constancy of performance of structural components[1] in steel or aluminium in accordance with Annex ZA of standard EN 1090-1:2009+A1:2011, for the CE certification provided by OCAB-OCBS in the context of the application of Regulation (EU) No 305/2011[2], hereinafter referred to as 'CPR'.

This document is updated whenever necessary. In accordance with contractual provisions, new versions shall take effect immediately for all manufacturers[3] relying on OCAB-OCBS for certification services that fall within the scope of these Rules.

Legal provisions, such as those of the CPR, take precedence over the provisions of these Rules.

2 CAPACITY OF OCAB-OCBS

OCAB asbl - OCBS vzw is a non-profit association founded in 1977 and has the selfless goal of promoting quality in the steel, ferrous and non-ferrous metals sector by controlling and enforcing in an independent way the application and enforcement of laws, regulations and decisions.

The statutes of OCAB-OCBS were first published in the annexes of the Belgian official journal of 6 October 1977 and have been updated several times since then. The registered office of OCAB-OCBS is in 1000 Brussels, rue Ravensteinstraat 4.

OCAB-OCBS was notified by the Belgian State to the European Commission as a Notified Body for the European Regulation (EU) No 305/2011 (CPR) and is registered there under identification number 1148. The notification concerns specific products which are the subject of European Decisions and harmonised technical specifications as referred to in §3.1 . The current status of the notification of OCAB-OCBS can always be consulted in the '*Nando*' -database of the European Commission.

This notification authorises OCAB-OCBS, as a third party, to carry out tasks that are part of the procedure of assessment and verification of constancy of performance of construction products according to the CPR.

OCAB-OCBS is bound by the conditions on which this notification is based, including the provisions of the CPR, the provisions of the Royal Decree of 21 July 2014[4] and the resulting recognition conditions.

3 REFERENCE DOCUMENTS

3.1 Harmonised technical specifications

The harmonised technical specifications applicable for these Implementation Rules are the harmonised standards of the EN 1090 series, 'Execution of steel structures and aluminium structures':

- EN 1090-1:2009+A1:2011: Execution of steel structures and aluminium structures – Part 1: Requirements for conformity assessment of structural components (referred to in this document as 'EN 1090-1')

The version in force for CE certification under the CPR is determined by publication in the Official Journal of the European Union (OJEU).

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[1] *In this document, this terminology is used to cover both structural components and kits.*

[2] *Regulation (EU) No 305/2011 of the European Parliament and of the Council of 9 March 2011 laying down harmonised conditions for the marketing of construction products and repealing Council Directive 89/106/EEC (**CPR**, Construction Products Regulation).*

[3] *"Manufacturer" means any natural or legal person who manufactures a construction product or who has such a product designed or manufactured, and markets that product under his name or trademark. The responsibilities of a Manufacturer also apply to the natural or legal person who assembles, packages, processes or labels ready-to-use products with a view to placing them on the EU market under his own name (cf. Art. 15 of the CPR). The responsibility of a manufacturer shall also be placed on any party that modifies the intended use of a product in such a way that other essential requirements enter into force, or that substantially modifies or rebuilds a product (thereby creating a new product) with the intention of placing it on the EU market.*

[4] *Royal Decree on notified bodies authorised to carry out, as third parties, tasks that are part of the procedure of assessment and verification of constancy of performance of construction products from 21 July 2014 [Belgian official journal, 25.05.2014].*

3.2 Other reference documents

Other standards

The harmonised standards referred to above refer to other standards in the EN 1090 series, including:

- EN 1090-2:2018: Execution of steel structures and aluminium structures – Part 2: Technical requirements for steel structures (referred to in this document as 'EN 1090-2');
- EN 1090-3:2019: Execution of steel structures and aluminium structures – Part 3: Technical requirements for aluminium structures (referred to in this document as 'EN 1090-3').

as well as testing standards or other normative documents.

Other documents of OCAB-OCBS

- BRP CE: Particular Rules for the assessment and verification of constancy of performance of metallic construction products in the framework of the European Construction Products Regulation
- TAR CE: Applicable Rates and fees

The version in force of the documents published by OCAB-OCBS is made available on its website.

Documents of the GNB-CPR

The documents of the GNB-CPR (Group of Notified Bodies for the CPR), that aims to harmonise the practices of the various notified bodies, serve as a basis for the certification procedures applied by OCAB-OCBS. These documents are made available by OCAB-OCBS via its website or are provided on simple request.

These documents include, for example:

- NB-CPR/17/722r8, 'Guidance to notified bodies on the Assessment and Verification of Constancy of Performance under the Construction Products Regulation', 2019
- NB-CPD/SG17/09/069r3, 'Revised Position Paper: EN 1090-1:2009+A1:2011- Certification of FPC of steel and aluminium structural components', 2016;
- NB-CPR/SG17/16/106r2, 'Position Paper: Equalisation of Notified Bodies' methods for the estimation of duration of audits to EN 1090-1', 2017.

Legal documents

The CPR, the Delegated Regulations or the Decisions of the European Commission are available via the EURLEX database of the European Union.

4 THE CERTIFICATION PROCEDURE

The general provisions regarding the certification procedure have been set out in the Particular Rules BRP CE.

The Manufacturer who wishes to obtain certification sends an application to OCAB-OCBS using a standard form available on the OCAB-OCBS website.

To start the certification procedure the manufacturer shall return the duly signed and approved proposal to OCAB-OCBS. The certification procedure shall begin on that date.

By returning the validated application, the manufacturer confirms that he has taken note of the reference documents and undertakes to comply with them.

OCAB-OCBS then carries out the tasks of assessment and verification of constancy of performance assigned to it as a Notified Body, as set out in Chapter 6 and the following chapters of the present Implementation Rules.

OCAB-OCBS decides to issue or to maintain a certificate for the products concerned if the results of the assessment and verification of constancy of performance meet the requirements and if all technical and administrative conditions are met.

The certificate can only be issued after signing, by both the manufacturer and OCAB-OCBS, of a certification agreement drawn up by OCAB-OCBS to comply with the applicable standards and Rules.

A typical example of a certificate as issued by OCAB-OCBS within the framework of these Implementation Rules is given in Annex C .

To confirm and to maintain the validity of the certification, OCAB-OCBS then organizes the execution of the tasks provided by the CPR for this purpose.

The finding of non-conformities regarding the requirements of certification may give rise to a request to the manufacturer to take corrective actions so that the certification can be maintained, or it may lead to sanctions (cf. BRP CE). The manufacturer always has the possibility to submit an objection or file an appeal to OCAB-OCBS according to the modalities laid down in the BRP CE.

5 GENERAL ASPECTS OF THE ANNEX ZA OF THE HARMONISED STANDARD

5.1 Context

Annex ZA of the standard identifies the clauses of the standard that relate to the *essential characteristics* specified in the standardisation request addressed to CEN by the European Commission and the European Free Trade Association.

In addition, Annex ZA sets out the *system* for assessment and verification of constancy of performance of the product (AVCP), laid down in legal acts issued by the Commission, to which the product is to be subject when the manufacturer draws up the Declaration of Performance (DoP) and affixes the CE marking.

In the event of a conflict between Annex ZA and the CPR, the provisions of the CPR always prevail.

5.2 Products and their intended use

The tables below list the products as mentioned in Annex ZA of the harmonised standards that are in the scope of these Implementation Rules.

EN 1090-1	Construction product	Intended use
Table ZA.2	Steel and aluminium structural components	For structural use in all types of construction works

Table 5.2 -1: Products and their intended use according to EN 1090-1

5.3 Essential characteristics

The performance for essential characteristics shall be determined in accordance with the methods laid down in the harmonised standard. Tables ZA of the harmonised standard specify, for each essential characteristic, the article of the standard applicable to it and whether the performance is expressed in levels or classes.

The essential characteristics laid down in the harmonised standard are given in the tables below for information only. For precise information, please refer to the corresponding Annex ZA of the harmonised standard.

Essential characteristics provided by EN 1090-1 (Table ZA.1)	**Articles of the standard**
Tolerances on dimensions and shape	4.2, 5.3
Weldability	4.3, 5.4
Fracture toughness Impact resistance	4.4, 5.5 4.8, 5.10
Load bearing capacity	4.5.1, 4.5.2, 5.6.2
Deformation at serviceability limit state	4.5.5
Fatigue strength	4.5.1, 4.5.3, 5.6.2
Resistance to fire	4.5.1, 4.5.4, 5.7
Reaction to fire	4.6, 5.8
Release of cadmium and its compounds	4.7, 5.9
Emission of radioactivity	4.7, 5.9
Durability	4.9, 5.11

Table 5.3 -1: Essential characteristics provided by EN 1090-1

5.4 The AVCP-system

Annex ZA of the harmonised standard also specifies the AVCP system (see BRP CE, Article 4.2) that applies. In accordance with European Commission Decision 98/214/EC, modified by Decision 01/596/EC, the system for these products and for all their essential characteristics is **system 2+**.

6 TASKS AND RESPONSIBILITIES

6.1 Distribution of tasks

The distribution of the respective tasks of manufacturer and Notified Body under AVCP system 2+ is shown in the following table.

	Tasks	Clauses from standards	Clauses from Rules
Manufacturer	Carry out an Assessment of Performance of the construction product on the basis of testing (including sampling), calculation, tabulated values or descriptive documentation of the product	EN 1090-1 :2009+ A1:2011, §6.2	TRA CE EN 1090 Ch.7
	Determine the *product-type* on basis of the Assessment of Performance		BRP CE Ch.5 TRA CE EN 1090 Ch.7
	Establish, maintain and retain the appropriate technical documentation[5]		
	Carry out and maintain the Factory Production Control (FPC)	EN 1090-1 :2009+ A1:2011, §6.3	TRA CE EN 1090 Ch.8
	Execute the prescribed test plan on samples taken in the factory by the manufacturer	EN 1090-1 :2009+ A1:2011, Table. 2	TRA CE EN 1090 Ch.8
	Draw up the Declaration of Performance (DoP)		BRP CE An.A
	Affix the CE marking		BRP CE An.B
Notified Body	Carry out an initial inspection of the factory and of the Factory Production Control (FPC)		TRA CE EN 1090 §9.2
	Carry out the continuing surveillance, assessment and evaluation of the Factory Production Control (FPC)		TRA CE EN 1090 §9.3

Table 6.1 -1: Distribution of tasks under system 2+

[5] *As a basis for the Declaration of Performance (DoP) the manufacturer draws up the technical documentation describing all the information relevant to the system of assessment and verification of constancy of performance. The technical documentation shall be kept for at least ten years after the construction product has been placed on the market. The technical documentation shall be updated in the event of a change in the construction product or in the harmonised technical specification.*

7 PROVISIONS FOR THE ASSESSMENT OF PERFORMANCE

7.1 Objective and responsibilities

The purpose of the *Assessment of Performance* is to determine the performance[6] of the product for its essential characteristics. The Assessment of Performance shall serve as a basis for determining the product type[7], expressed as the set of representative performance levels or classes of a construction product, and for drawing up the Declaration of Performance by the manufacturer.

Under AVCP System 2+, the Assessment of Performance is carried out under the responsibility of the Manufacturer. The Manufacturer is responsible for the assessment itself, but also for the type testing -including sampling- or the type calculations on which the assessment is based.

The standard EN 1090-1[8], containing provisions for initial type testing and initial type calculations, applies, except for clauses that would be in conflict with the CPR.

7.2 Scope and selection

The Assessment of Performance review is carried out for the type of products that a manufacturer wishes to place on the market.

The scope of EN 1090-1 covers both series manufactured products (greenhouses, shelves, modular structures, etc.) and unique products (bridges, unique building frames, etc.). The manufacturer must determine the product-type on the basis of the performance of the steel or aluminium structural elements that he wishes to place on the market.

The type of structural components in steel or aluminium is determined by the following conditions:

- each type corresponds to a unique reference code provided by the manufacturer;
- a type shall not include alternative manufacturing processes, as these may significantly alter the performance of the essential characteristics to be declared.

The Assessment of Performance shall be carried out on samples of the product or its constituent products representative of the product-type.

For the purpose of testing, components may be grouped into families if the selected property/properties is/are common to all component within that family.

The standard EN 1090-1 lays down additional conditions in this regard.

The number of samples used to establish the performances of the product is defined as a single item in Table 1 of the standard EN 1090-1. This because many structural components are non-series items and with a unique component specification.

If a new product-type is developed using physical testing, then suitable statistical techniques shall be used to assess product characteristics based on the number of samples tested (Annex D of EN 1990 provides a reference for design of structural components based on physical testing).

A type calculation carried out for a component can be used for documentation of subsequent manufactured components with the same performance characteristics. A new or revised type calculation shall be carried out if there is a change in one or more of the structural performance characteristics that are affected by a change in the design of the component.

The Assessment of Performance is carried out before the first bringing on the market of the product and shall be repeated in case of changes which could affect the conformity of the product with the declared performance. Such changes include but are not limited to:

- changes to the construction product, its constituent products, the manufacturing equipment or the manufacturing process;
- changes of production to a higher execution class ;
- changes to the harmonised technical specification with regard to methods and criteria for the Assessment of Performance, including changes to supporting standards called up by the harmonised specification.

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[6] performances are expressed in levels, classes or by means of a description

[7] for the definition of 'product-type': see Glossary, Annex A

[8] 'Initial type testing' (abbreviated ITT), was the terminology used under the Construction Products Directive (CPD). This corresponds to 'type testing' (TT) or 'type calculations' (TC) according to the terminology of the CPR, that has repealed the CPD.

7.3 Assessment of Performance programme and methods used

The Assessment of Performance covers the essential characteristics listed in Annex ZA (see §5.3) for which the manufacturer must or wishes to declare the performance.

The Assessment of Performance shall be carried out strictly in accordance with the methods specified in the harmonised standard.

Where type tests (TT) or type calculations (TC) are carried out, they shall be carried out on samples representative for the product-type.

Type calculation (TC) aims at assessing the structural design capabilities, where the manufacturer declares performances for characteristics governed by design of the component.

Type Testing (TT) aims at assessing the manufacturing capabilities.

The standard EN 1090-1 contains provisions for the Assessment of Performance programme. However, the CPR takes precedence over the standard if the standard's provisions would conflict with the CPR[9].

The product-type shall be determined by the manufacturer based on the results of the Assessment of Performance.

The manufacturer informs the notified body when a new Assessment of Performance based on type testing (TT) has been undertaken.

7.4 Use of historical, shared or cascaded data

The Manufacturer may, after examining and verifying the data, consider in the Assessment of Performance programme:

- *Historical data*[10] from type tests or calculations that have been carried out prior to the application for certification of the type;
- *Shared type tests or calculations data* (i.e., type tests or calculations carried out for a given manufacturer that are made available to other manufacturers);
- *Cascaded type tests or calculations data* (i.e., type tests or calculations carried out for a supplier of constituent products, provided to the manufacturer).

The manufacturer must be able to demonstrate that the owner of the data gives him permission to use the data.

The manufacturer shall verify in all cases the representativeness of the type whose performance is to be assessed, the suitability of the methods used and whether the conditions under which these type tests or calculations are carried out enable it to assume responsibility for them.

Where cascaded type-test data are used, the manufacturer's must demonstrate his ability to integrate the constituent products concerned into his manufacturing process. The Assessment of Performance programme can take this into account. Guidance is provided in the documents of the Group of Notified Bodies (NB-CPD/SG04/10/075, §2).

7.5 Documentation

All type tests or calculations shall be the subject of records.

The Manufacturer shall draw up an Assessment of Performance report containing all the necessary information, in particular the precise description of the product, the reference to the harmonised technical specification and the methods used.

The results of the Assessment of Performance programme shall be recorded, and such records shall be maintained and be made available for inspection for a period of at least 10 years after the date when the last product to which the programme refers to has been delivered on the market.

[9] *On the date of publication of these Implementation Rules, some of the applicable standards of the EN 1090 series could predate the entry into force of the CPR and therefore might contain certain incompatibilities with the concepts of the CPR.*

[10] *The recommendations of Position Paper NB-CPR/19/792 Use of Historical Assessment Data of the GNB-CPR apply.*

8 PROVISIONS FOR FACTORY PRODUCTION CONTROL (FPC)

8.1 Generalities and Goal of Factory Production Control (FPC)

The manufacturer shall implement and maintain Factory Production Control (FPC) in accordance with the provisions of the harmonised technical specification.

The goal of the FPC is to guarantee the constancy of performance of the product and to guarantee that the products[11] placed on the market

- meet the performances declared by the manufacturer, as well as
- conform to the requirements of the harmonised technical specification.

The provisions of EN 1090-1 laying down the requirements for Factory Production Control apply for the purposes of these Implementation Rules [12].

Factory Production Control shall be subject to inspections and assessments by the Notified Body (cf. Chapter 9).

8.2 Documentation

The manufacturer must document his FPC in a structured manner. He shall do so using written procedures, instructions and other appropriate documents.

The works' manual is the basic document that describes the FPC implemented by the manufacturer. It clearly defines how the manufacturer manages and maintains various aspects of the FPC.

The documentation of the FPC must cover all applicable requirements of the harmonised technical specification and of the present Implementation Rules.

The manufacturer shall manage its documentation in a controlled manner through a procedure that ensures that all requirements and provisions necessary for an efficient FPC are up to date, available and applicable.

Also see §6.3.1 of EN 1090-1.

Note: The FPC documentation can also be incorporated in a broader quality management system provided that it can be demonstrated that all requirements of the present certification are met.

Recommendations

The FPC documentation typically includes at least a description of:

- *the manufactured products and their production method;*
- *the policies to ensure that the products achieve the desired performance;*
- *the document management system, including versioning, archiving, and document approval;*
- *the structure of the organisation, as well as the tasks and responsibilities of the personnel;*
- *the training and competences of the personnel;*
- *the Inspections of installations and equipment, including inspection and test equipment;*
- *the checks and tests carried out on incoming materials, during manufacture and on the finished product;*
- *the measures to be taken in the event of non-conforming products and the corrective actions to be taken.*

8.3 Records

The manufacturer shall ensure that all relevant FPC operations are subject to readable, identifiable, durable and accessible records.

He shall retain the records at least for the period required to comply with the requirements and responsibilities that apply to him[13]. He lays down this period in his FPC procedures.

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[11] in accordance with the product type determined by the Manufacturer on the basis of the Assessment of Performance he has carried out

[12] except for the clauses of the standard that would conflict with the CPR, for example if this standard was published before the entry into force of the CPR.

[13] Independent from other requirements, the technical documentation and Declaration of Performance shall be kept for a period of 10 years after the placing of the product on the market (CPR, Article 11(2)).

Records of control results shall include the identification of the controlled object, the moment of control, the result, the assessment criteria and the assessment of the result.

Also see §6.3.1 of EN 1090-1.

8.4 Organisation and responsibilities

The manufacturer describes in his manual the structure of his organisation and the responsibilities related to the FPC.

Particular attention shall be paid to the departments and the personnel responsible for ensuring the constancy of performance and the conformity of the product.

Also see §6.3.2 of EN 1090-1.

Recommendations

Responsibilities can be presented in a functional or nominative organisation chart with corresponding job descriptions in which responsibilities, required competencies, and task descriptions are included.

When parts of the process are outsourced by the manufacturer and carried out under his responsibility, he clearly fixes how his FPC is applied. Such outsourcing is fixed by contract.

8.5 Personnel and training

The manufacturer ensures the availability of resources necessary to support the operation of the FPC and ensure product performance.

The manufacturer shall lay down the measures to ensure that the personnel involved in the FPC have the appropriate training, experience and qualification. He keeps records of this.

Recommendations

It is advised that the manufacturer establishes a training plan for the staff, including for new employees. Training can consist of external training or internal training (including "on the job" training).

Registration of the followed training and of competences in a polyvalence matrix is an example of a tool suitable to ensure that only personnel with the required competence shall be assigned to a job position.

In particular, the manufacturer ensures:

- having, for each main welding process, one or more welders with valid qualification according to EN 9606-1 for steel or EN ISO 9606-2 for aluminium. Welders for fillet welds shall have a suitable qualification for welding fillet welds;
- having, for each main fully mechanised or automatic welding process, one or more operators with valid qualification according to EN ISO 14732;
- having Welding Coordinators to manage the processes under their supervision and understand the limits of their competence. Guidance on suitable knowledge is given in EN 1090-2 (Tables 14 and 15) and in EN 1090-3 (Table 9), as appropriate in terms of the standard EN ISO 14731 and of the applicable execution class.

Also see §6.3.2 of EN 1090-1.

8.6 Equipment

All equipment must be regularly inspected and maintained to ensure that its use, wear and possible failure do not result in deviations.

Equipment for inspection, measurement and testing must be regularly inspected and calibrated according to procedures and frequencies laid down in the FPC.

The status of equipment that is periodically controlled or that does not meet the requirements is clearly identified.

Also see §6.3.3 of EN 1090-1.

Recommendations

The status of equipment to be regularly inspected or maintained may be indicated by affixing stickers with identification and the time limit until the next inspection or the date of the last inspection.

Equipment that no longer meets the specifications normally is to be isolated or marked "out of order".

The management of the periodic interventions can be shown by including the equipment in an overview list.

8.7 Process control

The manufacturer shall plan and carry out production under controlled conditions. The process control is aimed at proactively ensuring the performance and conformity of the product.

The FPC documentation describes the parameters for design, process planning, process control and inspection, testing and verification, corrective measures, storage, delivery and shipping.

The FPC documentation must contain a control plan that clearly indicates all processes for the manufacture and control of the product. All points where inspection or sampling takes place must be identified and the frequencies and methods used must be clearly defined.

The manufacturer shall establish procedures to ensure that the production process and tolerances allow for product performances to comply with the declared values.

The manufacturer's FPC must cover all processes, production lines, units, or departments, including those subcontracted to or operated by subcontractors.

When the manufacturer outsources certain processes, he carries out the necessary checks to ensure that his specifications and FPC are applied unabated.

Recommendations

When certain processes are outsourced, depending on the situation, the manufacturer's FPC can provide for

- *an entry check after the execution of the outsourced process,*
- *surveillance, e.g. through audits, inspections, tests, etc. of the FPC applied by the subcontractor, or*
- *a combination of both.*

The main manufacturing processes for which the control and inspection plan has to be specified in the FPC documentation include:

- preparation (cutting, shaping, holing, cut outs), see EN 1090-2 §6 or EN 1090-3 §6;
- welding, see EN 1090-2 §7 or EN 1090-3 §7;
- mechanical fastening, see EN 1090-2 §8 or EN 1090-3 §8 ;
- surface treatment, see EN 1090-2 §12 or EN 1090-3 §10 and corrosion protection, see EN 1090-2 Annex F.

8.8 Design and specification

8.8.1. Design

When the manufacturer is responsible for the design of the product, the different design steps and methods must be documented. Records shall be sufficiently detailed and accurate to demonstrate that the manufacturer's design responsibilities have been satisfactorily carried out.

The manufacturer shall ensure that the designed product corresponds to the product type for which the Assessment of Performance was carried out.

The design activity results in a construction specification and a manufacturer's documentation according to clauses §4.1 and §4.2 of the EN 1090-2 and EN 1090-3 standards. These documents contain all the relevant and necessary information to be able to manufacture the product, also broken down into detailed specifications for each element to be manufactured.

Recommendations

The design activity can be divided into several phases based on a design plan, with interim checks and pre-designated responsible persons. Examples of such phases are, the final approval of the design, the release for production, the verification of the performances and, if necessary, the notification to the certification body.

Also see §6.3.4 (design), §6.2.4 and §6.2.5 (calculation) of EN 1090-1.

8.8.2. Component specification

The manufacturer shall ensure that the product or its constituent products to be manufactured are checked against a sufficiently detailed specification that makes it possible to assess performance and conformity.

The component specification defines the initial type and is thus the primary control document that links TT/TC with production. Requirements.

The component specification shall be prepared from design information. To the extent that the manufacturer undertakes the preparation of the component specification from design information, clause 6.3.4 of EN 1090-1 applies.

The execution class to be applied shall be given in the component specification, see EN 1090-2 and EN 1090-3.

Annex A of EN 1090-1 gives guidance on the preparation of the component specification.

In many cases the responsibility for preparation of the component specification is shared between the manufacturer and the purchaser (or designers acting on their behalf). A manufacturer's declaration that a component complies with its component specification does not cover those aspects of design not undertaken by the manufacturer, nor does it cover that they have been correctly incorporated into its component specification.

In cases where the manufacturer produces components in accordance with calculations and component specifications provided by the purchaser (or by designers on their behalf), the conformity evaluation shall check that the components comply with the component specification.

Also see §6.3.6 and Annex A of EN 1090-1.

8.9 Raw materials - constituent products

The manufacturer shall apply appropriate control procedures to ensure that all incoming materials and/or constituent products meet the criteria of his FPC and the requirements of the harmonised technical specification.

The requirements of §4.1 and §5.2 of EN 1090-1 apply.

The requirements for traceability of constituent products given in EN 1090-2 and EN 1090-3 shall be complied with. The requirements for traceability in EN 1090-2 and EN 1090-3 are dependent on execution class.

If incoming materials and/or constituent products are covered by a harmonised technical specification, the values declared by the supplier in his Declaration of Performance may be taken into account when assessing these materials and/or constituent products against the requirements set out for the in the FPC documentation. Depending on the use, the verification of the declared values may or may not be a sufficient basis of trust. If the Declaration of Performance and CE marking do not provide sufficient information, the manufacturer will require additional information from the supplier, or will carry out additional checks as part of his FPC.

For metallic products, test documents according to EN 10204 must be provided according to clauses §5.2 of EN 1090-2 and EN 1090-3.

Also see §6.3.5 of EN 1090-1.

Recommendations

The manufacturer shall keep a record of all required specifications of the incoming materials and/or constituent products. These comply with those of the materials used for the initial determination of the product type.

The control procedures may consist of a documentary review, tests, checks at the supplier's premises or a combination of the above.

For certain materials and/or constituent products, an expiry date management may be necessary for their use.

8.10 In process control

The manufacturer shall establish procedures to ensure that the production process and tolerances allow for product performances to comply with the declared values and to satisfy the requirements of the harmonised technical specification.

Therefore, he will set out in his FPC-documentation an inspection and testing plan that at least meets the requirements of the harmonised technical specification[14]. Methods, criteria and actions to be taken shall herein be documented.

[14] *Performances declared by the manufacturer shall always be determined on the basis of the methods prescribed by the harmonised technical specification.*

The inspection and testing plan will be carried out conforming the procedures of the manufacturer and status of its progression is clearly identified during the various production steps.

The execution of the plan and the actions resulting therefrom shall be subject to the necessary registrations, identifications and markings.

Recommendations

The test plan may consist of direct tests or indirect tests during the different stages of production.

Indirect tests may be used to carry out the test plan provided the correlation with the direct test has been demonstrated.

8.11 Handling, storage, delivery

The manufacturer applies adequate procedures for product handling and has suitable storage areas and provisions preventing deterioration of the products' performances or damage to the product as long as it is under his responsibility.

The delivery documents shall provide for traceability to the users.

Constituent products shall be handled and stored in conditions that are in accordance with product manufacturer's recommendations. A constituent product shall not be used beyond a shelf life specified by its manufacturer. Products that have been handled or stored in a way or for a length of time that could have led to significant deterioration shall be checked before use to ensure that they still comply with the declared performances and the harmonised technical specification. Structural steel components shall be packed, handled and transported in a safe manner, so that permanent deformation does not occur, and surface damage is minimized. Handling and storage preventive measures specified in table 8 of EN 1090-2 :2018, given in Annex D , shall be applied as appropriate.

8.12 Control of the end product

The manufacturer shall establish procedures to ensure that the performance of the final product is maintained, complies with the values he declares and meets the requirements of the harmonised technical specification.

To this end, the manufacturer shall carry out for each type of product a test plan to demonstrate the performance and conformity of the product.

This test plan shall be documented and shall at least set out the characteristics to be determined, the methods used[15], the minimum frequencies, the applicable criteria and the actions to be taken. The test plan meets the requirements of the harmonised technical specification.

The test plan shall be carried out in accordance with the manufacturer's FPC procedures.

The testing of samples taken at the factory by the manufacturer in accordance with a prescribed plan and the requirements of EN 1090-1 shall be the means of evaluation of conformity of the structural components in steel or aluminium with the performances declared by the manufacturer (cf. DoP).

The execution of the plan and the actions resulting therefrom shall be subject to the necessary registrations, identifications and markings.

The manufacturer shall establish procedures to ensure that the declared values and classes of all of the characteristics are maintained. The means of production control of characteristics and the sampling methods for a component or family shall be in accordance with Table **Error! Reference source not found.**-1.

If the component specification includes a prescribed inspection and test plan for component properties, then those requirements shall be followed in addition to the requirements given in Table **Error! Reference source not found.**-1.

Characteristic	Evaluation method	Sampling
Tolerances on dimensions and shape	Inspection and test in accordance with EN 1090-2 or EN 1090-3	Each component. (This requirement may be reduced if the components are manufactured under similar conditions or if the geometry is not critical for their use.)

[15] *Performances declared by the manufacturer shall always be determined on the basis of the methods prescribed by the harmonised technical specification.*

Characteristic	Evaluation method	Sampling
Weldability	Checking of inspection documents for compliance with the specified requirements to the constituent product.	Documentary checks of all constituent products used in manufacture.
Fracture toughness/ brittle strength (steel components only) + Impact resistance	Checking of inspection documents for compliance with the specified requirements to the constituent product.	Documentary checks of all constituent products used in manufacture.
Yield, proof or tensile strength of constituent products used in manufacture	Checking of inspection documents for compliance with the specified requirements to the constituent product.	Documentary checks of all constituent products used in manufacture.
Structural characteristics governed by the structural design (load-bearing capacity, deformation at serviceability limit state, fatigue strength, resistance to fire)	Check that the design is carried out according to the relevant Eurocode.	Check that the calculations are relevant and verified for the manufactured component.
Structural characteristics governed by manufacturing	Check that manufacturing is done in accordance with the component specification and EN 1090-2 or EN 1090-3.	Check in accordance with the requirements to inspection in EN 1090-2 or EN 1090-3 and the component specification.
Durability	Check that manufacturing is done in accordance with EN 1090-2 or EN 1090-3	Check in accordance with the requirements to inspection in EN 1090-2 or EN 1090-3.

Table-8.12 -1 – Frequency of product testing as part of factory production control

In cases where the manufacturer produces components in accordance with calculations and component specifications provided by the purchaser (or by designers on their behalf), the conformity evaluation shall check that the components comply with the component specification.

Also see §6.3.7 of EN 1090-1.

8.13 Marking and traceability

The FPC's procedures ensure that all products, parts or constituent products are correctly identified, marked and traceable.

The manufacturer is responsible for affixing the CE marking to the finished product and/or the accompanying documents, as well as for drawing up the Declaration of Performance for the product.

The identification codes he mentions therein make it possible to ensure traceability to the corresponding production data.

Recommendations

The traceability to the production data may consist of the registration of lot numbers of the materials and/or constituent products used, of the registrations resulting from the implementation of the inspection and testing plan and of process parameters used during production.

8.14 Handling of non-conforming products and corrective action

In the event that the products give a test result that does not meet the declared performance or does not comply with the conformity criteria of the harmonised technical specification, the manufacturer shall immediately determine the affected lot and take appropriate action to prevent the shipment of that lot.

The manufacturer's procedures shall also lay down the actions to be taken if he only finds after delivery that the performance of the product does not comply with the values he has declared.

Any such non-conformities shall be recorded as they occur, and these records shall be kept for the period defined in the manufacturer's procedures.

The manufacturer shall have documented procedures that instigate action to eliminate the cause of nonconformities and to adapt the FPC in order to prevent recurrence.

Also see §6.3.8 of EN 1090-1.

Recommendations

The implementation of corrective actions with verification of their effectiveness, aims at preventing the recurrence of non-conformities.

After confirmation of their effectiveness, these actions usually lead to an adjustment of the FPC documentation.

If the manufacturer decides to change the product type, he will initiate a new Assessment of Performance and verify that the scope of his CE certificate covers this product type.

8.15 Handling of complaints

The manufacturer has a procedure for handling complaints and keeps a register of complaints received and their handling.

8.16 Efficiency of the Factory Production Control (FPC)

The manufacturer regularly assesses the efficiency of his FPC to ensure the constancy of performance of his products as well as the compliance to the harmonised technical specification.

He keeps records of these assessments and of the actions that follow.

Recommendations

Internal audits of the FPC, periodic reviews of the relevance of the FPC documentation and annual management reviews are part of suitable methods for this.

Management reviews can use input from:

- *analysis and synthesis of non-conforming products;*
- *internal audit reports;*
- *overview of customer complaints;*
- *overview of corrective measures and their effectiveness;*
- *the suitability of the FPC documentation;*
- *the need for staff training;*
- *the evaluation of subcontractors*.

9 PROVISIONS FOR THE VERIFICATION OF CONSTANCY OF PERFORMANCE

9.1 Objective and process

The purpose of the inspection of the factory and of the inspection and evaluation of the Factory Production Control (FPC) is:

- to verify that the Factory Production Control (FPC) meets the requirements of the reference documents;
- to verify the effectiveness of Factory Production Control (FPC) to ensure the product's constancy of performance and to ensure that the product achieves the performance declared by the manufacturer.

The inspection of Factory Production Control (FPC) is organized in accordance with the relevant clauses of EN ISO/IEC 17021-1:2015, more specifically those relating to the organisation of the audit process (clauses §9.1 to §9.4 and § 9.6 of this standard, including those relating to the determination of the audit duration, the audit plan, the planning and the execution of audits and maintaining certification).

The Notified Body may designate an inspection body to carry out the inspections under its responsibility as a subcontractor.

9.2 Initial inspection of the factory and the Factory Production Control

9.2.1. Inspection of a new factory

In the case of a new factory, an initial inspection of the factory and of the Factory Production Control shall be carried out based on information on the Factory Production Control and on the equipment used for the manufacture of the structural components in steel or aluminium. The inspection must, among other things,

- verify that the FPC-documentation complies with the requirements;
- verify that the equipment used to manufacture and test structural components in steel or aluminium complies with the requirements;
- verify that the manufacturer has the necessary resources to ensure the conformity and constancy of performance of the product.

Annex B of EN 1090-1 provides for additional precisions regarding the initial inspection of the Factory Production Control, in particular to differentiate between cases where the manufacturer is responsible for design or not.

To be noted:

- The initial inspection of a new factory shall include an assessment of all FPC-documentation and all procedures concerned.
- In accordance with the provisions of EN ISO/IEC 17021-1:2015, the initial inspection is carried out in two steps: a 1st step for the assessment of the documents and the preparedness, in order to be able, in case of a positive conclusion, to proceed to the 2nd step, i.e. the assessment of the implementation.
- The duration of the initial inspection is determined in such a way that it allows for examining whether the FPC considers all the points to be dealt with. In this sense, its duration is generally longer than for inspections for surveillance purposes.
- During the initial assessment of the factory, all units, lines and departments that fall under one FPC and where relevant elements of the FPC are realized must be individually inspected. This includes those subcontracted or operated by subcontractors, unless their FPC, for the relevant scope, is inspected by another Notified Body with which OCAB-OCBS has concluded a subcontracting agreement.
- The initial inspection of the factory and the initial evaluation of the FPC shall include the installations managed by constituent products suppliers, etc., unless the manufacturer has established a sampling procedure to verify the main characteristics of these incoming constituent products. The manufacture of raw materials is not covered by this provision.

9.2.2. Inspection for a new type of an existing factory

In the case of a new type of structural components in steel or aluminium in an existing factory, the information on all crucial changes in Factory Production Control and in equipment involved in the production of the product must be considered. This must form the basis for deciding, depending on the importance of the changes to the FPC, whether a special inspection is necessary. In such case, any new equipment that has brought about a notable change in the works' manual must be inspected to verify that it meets the appropriate requirements.

9.2.3. Criteria for the evaluation of production equipment

The inspection shall evaluate the suitability of the production equipment in relation to the FPC and its ability to meet the requirements of the harmonised standard and to ensure the constancy of performance of the product. The following criteria shall be considered:

- the equipment is suitable for the manufacture of structural components in steel or aluminium, with sufficient accuracy to ensure that the requirements of the applicable product standard are met, and that constancy of performance can be ensured;
- measures must be taken to prevent the mixing of distinct types and qualities during storage and delivery.

9.2.4. Criteria for the evaluation of suppliers of materials or constituent products

The inspection must evaluate the management of suppliers of materials or constituent products and the thereto relevant provisions of the FPC.

9.2.5. Criteria for the evaluation of laboratories

The laboratory responsible for carrying out tests for the prescribed test plan and for Factory Production Control must have at least the necessary equipment to carry out the appropriate tests specified or referred to in the works' manual.

The laboratory responsible for carrying out the prescribed test plan or Assessment of Performance tests must at least have the equipment required to carry out the tests according to the prescribed test methods, for the characteristics specified in the harmonised standard.

Laboratories demonstrate the ability to provide timely and in an appropriate manner the results for the Factory Production Control.

9.2.6. Criteria for the evaluation of the Assessment of Performance

The initial inspection shall verify that the Assessment of Performance is (or was) carried out correctly and forms a valid basis for the Verification of Constancy of Performance.

Thereto it shall be verified that:

- sampling for the Assessment of Performance is documented, and that it is justified that the samples taken are representative of the ongoing production;
- the correct methods, as specified in the harmonised technical specification, are used to perform the Assessment of the Performance;
- the Assessment of Performance is documented in accordance with the requirements of the harmonised technical specification;
- that all mandatory threshold levels are being met;
- where the Assessment of the Performance is (was) outsourced, the manufacturer can provide a justification of the competence of the testers/calculators/assessors;
- that the manufacturer has processes in place to ensure that Assessment of Performance shall be repeated in case of changes which could affect the conformity of the product with the declared performance. Such changes include but are not be limited to:
  - changes to the structural components in steel or aluminium, its constituent products, the manufacturing equipment or the manufacturing process;
  - changes to the harmonised technical specification with regard to methods and criteria for the Assessment of Performance, including changes to supporting standards called up by the harmonised specification.

However, whether or not particular changes necessitate the repetition of the Assessment of Performance is assessed case by case.

After having been informed by the manufacturer that he has carried out a new Assessment of performance based on Type Testing (TT), the Notified Body reviews the FPC to ensure that it is capable of controlling the production of the new product. The Notified Body does not need to undertake a supplementary assessment visit if the method of production is covered by the existing FPC. This requirement does not apply where a product type is developed by Type Calculation (TC).

9.2.7. Reporting

After each initial inspection, a confidential report is established and transmitted to the manufacturer.

9.3 Surveillance, assessment and evaluation of the Factory Production Control

9.3.1. Inspection tasks

Inspection tasks include surveillance, assessment and evaluation of the Factory Production Control implemented by the manufacturer.

The inspection shall verify that any significant changes to the works' manual relevant to Factory Production Control have been notified by the manufacturer to the Notified Body within one month of its application.

The inspection must verify that the Factory Production Control meets the requirements of EN 1090-1, that it has been carried out in accordance with the works' manual and that the constancy of performance of the product is ensured in relation to the Declaration of Performance drawn up by the manufacturer.

It is also to be verified that the manufacturer's Declaration of Performance is fully supported by the Assessment of Performance and the Factory Production Control.

Annex B of EN 1090-1 provides for additional precisions regarding the initial inspection of the Factory Production Control, in particular to differentiate between cases where the manufacturer is responsible for design or not.

To be noted:

- The inspection team shall normally be composed of one or two persons, at least one of whom shall be technically competent in the production and testing of structural components in steel or aluminium.
- The duration of the inspection is determined in advance based on the complexity of the installations to inspect and the scope covered by the Factory Production Control.
- The inspection body assesses and records the documents, interviews the personnel concerned and inspects the equipment (including equipment used in production, delivery and in the laboratory). Emphasis is placed on all measures taken by the manufacturer to ensure the constancy of performance of the product.
- Before leaving the factory, the inspectors shall hand over a copy of the registration of non-conformities found and their main findings to the representative designated by the manufacturer (and to the quality manager, if not the same person). The inspection body may ask the manufacturer to mark comments on this document and to co-sign it before the inspectors leave the factory.

9.3.2. Frequency of inspections

The on-site factory inspections are normally carried out following the requirements given in AnnexB.3 of EN 1090-1 and the Notified Body informs the manufacturer in advance when an inspection will be carried out.

Between factory inspections, documentary inspections and remote inspections are carried once per intermediate calendar year.

To be noted:

- The inspection body, when delegated by the Notified Body, shall take the initiative to agree a date for the inspection with the manufacturer and shall send him an audit plan prior to the inspection.
- If the Notified Body wishes to, it may request to be included in the distribution list of controlled versions of the works' manual. Where the Notified Body is not on the distribution list, it is appropriate to request an updated copy of the works' manual before the date of the inspection.
- The Notified Body may decide that an additional inspection must be organised if justified by the circumstances.
- The manufacturer must report annually if there has been an occurrence of
  - new or amended key provisions;
  - change of Welding Coordinator;
  - new welding processes, type of base material and qualification report of an associated welding procedure;
  - new essential equipment.
- Based on this information and based on the outcome of a documentary inspection, the notified body decides to carry out a factory inspection or if the documentary inspection is sufficient.

9.3.3. Reporting

At the end of the inspection, the inspection body shall hand over to the manufacturer a list of identified non-conformities. Where non-conformities are identified, the manufacturer must provide, within a time limit set by the inspection body, a root cause analysis and a description of all corrective actions taken or planned.

After each inspection, a confidential report is prepared and sent to the manufacturer.

After evaluating whether the corrective actions taken or planned can be accepted, the Notified Body shall decide on its final evaluation.

To be noted:

- The confidential report should not be limited to non-conformities but shall contain all relevant findings.
- The importance of all findings and the time limit within which corrections must be made, must clearly be stated in the list of non-conformities.
- The report shall be sent to the manufacturer as soon as possible after the inspection, also considering that urgent action may be required.

10 ACTIONS IN CASE OF NON-CONFORMITY

The control of non-conforming structural components in steel or aluminium or parts thereof and the corrective actions to be taken are entirely the responsibility of the manufacturer, who must document the detailed procedures thereto in the works' manual.

To be noted:

- In the event of non-conformity, it is the responsibility of the manufacturer to take appropriate measures in accordance with the relevant detailed procedures documented in the works' manual.

If OCAB-OCBS notices that the manufacturer does not comply with the requirements of these Implementation Rules or of the applicable reference documents, OCAB-OCBS will request the manufacturer to take appropriate corrective action.

Maintaining certification may underly conditions from OCAB-OCBS to execute additional inspection tasks necessary to verify that the manufacturer, after having taken corrective actions, (again) complies with the requirements based on which the certificate was issued.

11 VERSION HISTORY

Version	Date	Changes
00	03/2011	Creation
01	12/2013	Adaptations
02	09/2015	• Adaptations to the CPR • Changes to technical requirements in function of the CPR
03	03/2016	• Changes to the CE model certificate
04	12/2020	• Reference at § 19.2.2 to the Quality Manual regarding the audit programme of a complete cycle (inclusion of the addendum to revision 3) • Change in § 12.2.2 to the periodicity of inspections
05	12/2023	• Complete overhaul • Change from OPAC to TRA

ANNEXES TO THESE IMPLEMENTATION RULES

ANNEX A ABBREVIATIONS AND GLOSSARY

A.1 Abbreviations and acronyms

AVCP	Assessment and Verification of Constancy of Performance
BRP	Bijzonder Reglement – Règlement Particulier
CEN	Comité Européen de Normalisation
CPR	Construction Products Regulation
DoP	Declaration of Performance
FPC	Factory Production Control
GNB-CPR	Group of Notified Bodies for the CPR
OJEU	Official Journal of the European Union
TC	Type Calculations
TRA	Toepassingsreglement – Règlement d'Application
TT	Type Testing

A.2 Glossary

Component specification: Document or documents giving all necessary information and technical requirements for manufacturing the structural component [EN 1090-1 §3.1.1]

Constituent products: materials or products used in manufacturing with properties which enter into structural calculations or otherwise relate to mechanical resistance and stability of works and parts therof, and/or their fire resistance, including aspects of durability and serviceability [EN 1090-1 §3.1.2]

Essential characteristics: Characteristics of the construction product which relate to the basic requirements for construction works.

Execution class: classified set of requirements specified for the execution of the works as a whole, of an individual component or of a detail of a component.

Manufacturer: any natural or legal person who manufactures a construction product or who has such a product designed or manufactured, and markets that product under his name or trademark

Harmonised technical specifications: harmonised standards and European Assessment Documents

Performance of a construction product: the performance in relation to the essential characteristics, expressed by levels or classes, or in a description.

Factory Production Control: the documented, permanent and internal control of production in a factory, in accordance with the relevant harmonised technical specifications

Product-type: the set of representative performance levels or classes of a construction product, in relation to its essential characteristics, produced using a given combination of raw materials or other elements in a specific production process.

Structural components: components to be used as load-bearing parts of works designed to provide mechanical resistance and stability to the works and/or fire resistance, including aspects of durability and serviceability which can be used directly as delivered or can be incorporated into a construction work [EN 1090-1 §3.1.9]

Structural kit: set of structural components to be assembled and installed on site [EN 1090-1 §3.1.10]

Type calculation: initial calculation in accordance with the harmonised technical specification by which the performance of the construction product is determined for a given essential characteristic.

Type testing: initial testing in accordance with the harmonised technical specification by which the performance of the construction product is determined for a given essential characteristic.

ANNEX B BASIC QUESTIONNAIRE FOR INSPECTION OF THE FPC

The questionnaire given hereafter as an example, forms the basis for the questionnaires used for the inspection of Factory Production Control (FPC).

The bodies carrying out the inspection of the FPC on behalf of the notified body shall use this as a basis for their internal supporting documentation and for their inspection methods and reporting.

Note: Questions shown in *italic* are intended for periodic inspections of surveillance. Questions displayed in normal writing are formulated in terms of an initial inspection; these topics may however be verified during periodic inspections for surveillance.

Note: This list is not intended to be exhaustive. When implemented, it must be adapted to the specific applicable requirements and to the situation.

Questions	Ref.
Scope of the FPC	
For which product/product families has the manufacturer implemented the FPC?	
Is specified which product types are addressed by the FPC? Which are these?	
Are the Assessments of Performance carried out by the manufacturer in accordance with the terms of the harmonised technical specification?	
What is the method chosen by the manufacturer to declare the performance of his products?	
Are the data of the Declaration of Performance available?	
Is it clearly established that the manufacturer's Declaration of Performance is the reference for the constancy of performance aimed at by the FPC?	
If the manufacturer wishes, within the scope of his certificate, to place for the first time products with different performances on the market, does he carry out a new Assessment of Performance and does he adapt the production modalities and the FPC accordingly?	
Which processes does the manufacturer apply?	
Have there been any changes since the last inspection to: - *the products for which the FPC is implemented?* - *the performances declared by the manufacturer?* - *the production or control methods?* - *the scope of the CE certificate?* - *the harmonised technical specification?* *Have the FPC and its documentation been adapted to these changes?*	
Documentation	**8.2**
Are the provisions of the FPC properly documented by written procedures, instructions and/or other appropriate documents?	
Does the content of the FPC documentation meet the requirements of the harmonised technical specification, the standards to which this refers and the certification rules of OCAB-OCBS?	
If the FPC documentation has been incorporated into a broader quality management system, was it ensured to meet all the requirements of the present certification?	
Does the manufacturer apply a procedure that ensures - that all relevant FPC documents are valid and up-to-date, - that they are available to the persons who have to apply them, and - that they are complied with?	
What archiving periods has the manufacturer set for FPC documentation and are they respected?	
Records	**8.3**
Are all relevant FPC data recorded and are these registrations correctly managed?	
What archiving periods has the manufacturer set for records and are they respected?	

Organisation and responsibilities	**8.4**
Is the structure of the organisation described in the FPC documentation? Are the different responsibilities and job descriptions regarding FPC clearly defined?	
If significant processes are outsourced, are the conditions related to the FPC contractually fixed?	
Personnel and training	**8.5**
Have measures been taken to ensure that the staff involved in the FPC have the appropriate training, experience and qualification? Are the records of this kept?	
Does the staff have sufficient knowledge of the FPC ? Do they apply the FPC provisions correctly?	
Have there been any staff changes since the last inspection?	
Are there any special provisions to ensure the qualification of new employees or of employees who are assigned a new task?	
Equipment	**8.6**
Is the production equipment regularly inspected and maintained? Is the relevant documentation available and is it kept up to date?	
Is the equipment suitable to ensure the constancy of performance of the products?	
Is there an inspection and calibration plan for the equipment used for inspection, measurement and testing? Is this plan being implemented correctly and are the records available?	
Is the status of equipment to be periodically controlled or that does not meet the requirements clearly indicated?	
Process control	**8.7**
Is the FPC applied to all necessary processes? Which are they? - preparation; - welding; - mechanical fastening; - surface treatment; - corrosion protection.	
Are there significant processes that are outsourced by the manufacturer? If so, what measures have been taken?	
Does the FPC documentation describe the necessary parameters for process planning, execution, control and inspection?	
Are all processes registered at regular intervals or continuously (automatically)?	
Have there been any changes in the way of recording or documenting since the last inspection?	
Are the production processes and their control suitable to ensure the constancy of performance and the conformity of the product?	
Design and specification	**8.8**
Design	**8.8.1**
If the manufacturer is in charge himself for design tasks, does the FPC documentation contain the necessary provisions for it?	
Are the design methods (e.g. calculations) carried out according to the applicable standards?	
Is it clear how the design takes into account the performance of the product to achieve, the defined product type and the requirements of the harmonised technical specification?	
Are there suitable registrations available?	
Specification	**8.8.2**
Are there specifications available that define all the necessary variables and criteria for the manufacture of the products or its constituent products?	
Do these specifications allow to achieve the performances of the product and to ensure compliance with the Declaration of Performance?	
Is it established how these specifications can be managed and adjusted?	

Raw materials, materials, constituent products	**8.9**
Which (raw) materials / constituent products are used by the manufacturer?	
Does the FPC documentation contain the requirements for (raw) materials and/or constituent products and the way in which they are checked?	
Have the provisions for (raw) materials and/or constituent products and for their incoming control changed since the previous inspection?	
Do the (raw) materials / constituent products meet the requirements?	
Is the control of (raw) materials / constituent products suitable to ensure the constancy of performance of the final product?	
In process control	**8.10**
Does the FPC documentation describe the necessary parameters for inspection, testing and verification during production? If the harmonised technical specification contains requirements for this, are they met?	
Are the planned inspections, tests and verifications carried out and recorded?	
Are appropriate actions taken if the results do not meet the criteria?	
Handling, storage, delivery	**8.11**
Does the FPC documentation contain the necessary provisions for handling, storage and delivery?	
Does the manufacturer apply appropriate procedures for the handling of the products or components?	
Does the manufacturer have suitable storage areas and provisions to prevent performance alteration or damage to the product as long as it is under his responsibility?	
Have measures been taken to prevent the mixing of different types of products during storage and delivery?	
Control of the end product	**8.12**
Does the FPC documentation contain the necessary provisions for inspection, testing and verification on the finished product and are they in accordance with the harmonised technical specification?	
Have any changes been made to the test methods and/or the test equipment since the previous inspection?	
Are the performance values measured or determined for essential characteristics checked against the specifications for the performances of the product?	
Do the performance values for the product determined through the FPC comply with: - the values declared by the manufacturer in his Declaration of Performance and - the requirements of the harmonised technical specification?	
Marking and traceability	**8.13**
Do the FPC provisions ensure that all products, parts or constituent products are correctly identified, marked and traceable?	
Are the requirements from the harmonised technical specification about marking of products (insofar as they do not conflict with the CPR) correctly applied?	
Is the reference to the notification number of OCAB-OCBS used correctly?	
Do the data provided by the manufacturer on his Declaration of Performance allow to ensure traceability to his products and to the corresponding FPC data?	
Handling of non-conforming products and corrective action	**8.14**
Does the manufacturer apply a system that allows the detection of deviations and non-conformities quickly enough in order to - unambiguously identify and mark products whose performance does not comply with the specifications or are not conforming to the Declaration of Performance, and - to prevent them from being supplied in this way?	
Is the registration of non-conformities and subsequent actions ensured?	
Do findings of non-conformities lead to a root cause analysis and to adjustments of the FPC to prevent recurrence of non-conformities and to ensure that declared performances are met?	

What actions does the manufacturer take if, after delivery, he finds that the delivered products do not have the performances he has declared or do not meet the requirements of the harmonised technical specification?	
Handling of complaints	**8.15**
Does the manufacturer keep a register, with corresponding documentation, concerning all complaints received related to his certification?	
Have complaints been received regarding the performances or conformity of products, or other requirements from standards or rules?	
Have appropriate measures been implemented and documented?	
Efficiency of the FPC	**8.16**
Does the manufacturer regularly assess the effectiveness of his FPC to ensure the constancy of performance of his products? How does he do so?	
What are his findings on this, and does he implement appropriate measures if they prove necessary?	
Conclusions	**8.1**
Are the provisions and implementation of the FPC in accordance with the requirements of the harmonised technical specification?	
Do the setup and implementation of the FPC allow to ensure the constancy of performance, so that the performance of the products placed on the market conform to the performances declared by the manufacturer?	

ANNEX C CERTIFICATE TEMPLATE

OCAB CE1148 OCBS CE1148

Rue Ravensteinstraat 4, 1000 BRUSSELS

Certificate of conformity of the factory production control

«Certificat number»

issued on the basis of the certification scheme specified in BRP CE and TRA CE EN 1090.
In compliance with Regulation (EU) No 305/2011 of the European Parliament and of the Council of 9 March 2011 (the Construction Products Regulation or CPR), this certificate applies to the construction product

«Steel/Aluminium» structural components

placed on the market under the name or trade mark of

«Company»

«Stree»

«Postal code» «Locality»

and produced in the manufacturing plant

«Manufacturing plant»

This certificate attests that alle provisions concerning the assessment and verification of constancy of performance described in

EN 1090-1:2009 + A1:2011

under system 2+ are applied and that

the factory production control is assessed to be in conformity with the applicable requirements

This certificate was first issued on «FirstIssuingDate» and will remain valid as long as neither the harmonised standard, the construction product, the AVCP methods, nor the manufacturing conditions in the plant are modified significantly, unless suspended or withdrawn by the notified factory production control certification body.

Brussels, «SignatureDate»
Benny DE BLAERE, Managing director
The validity of the present certificate is confirmed if visible on the OCAB-OCBS website

BELAC 434-PROD

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ANNEX D LIST OF HANDLING AND STORAGE PREVENTIVE MEASURES

D.1 Handling and storage of constituent products and of structural components

See EN 1090-2 :2018 §6.3, in particular Table 8, shown hereafter:

Lifting	
1	Protection of components from damage at the lifting points
2	Avoidance of single point lifting of long components by use of spreader beams as appropriate
3	Bundling together lightweight components particularly prone to edge damage, twisting and distortion if handled as individual items. Care taken to avoid localized damage where component touch each other, to unstiffened edges at lifting points or other zones where a significant proportion of the weight of the bundle is imposed on a single unreinforced edge
Storage	
4	Stacking of manufactured components stored before transportation or erection clear of the ground to be kept clean
5	Necessary supports to avoid permanent deformations
6	Storage of profiled sheeting, and other materials supplied with pre-finished decorative surfaces according to the requirements of relevant standards
Protection against corrosion	
7	Avoidance of accumulation of water
8	Precautions in order to avoid the penetration of moisture into bundles of sections with metallic precoatings NOTE: In case of prolonged open storage on site, the bundles of sections should be opened and the sections separated to avoid the occurrence of 'black or white rust'.
Stainless steels	
9	Handling and storage of stainless steel to prevent contamination by fixtures or manipulators etc. Careful storage of stainless steel, so that the surfaces are protected from damage or contamination
10	If appropriate, use of protective film or other coating, to be left on as long as practicable
11	Avoidance of storage in salt-laden humid atmospheres
12	Protection of storage racks by suitable wooden, rubber or plastic battens or sheaths to avoid carbon steel, copper-containing, lead etc. rubbing surfaces
13	Use of markers containing chloride or sulphide prohibited. NOTE: An alternative is to use protective film and apply all marks only into this film.
14	Protection of stainless steel from direct contact with carbon steel lifting tackle or handling equipment such as chains, hooks, strapping and rollers or the forks of forklift trucks by use of isolating materials or light plywood or suction cups. Use of appropriate erection tools to ensure that surface contamination does not occur
15	Avoidance of contact with chemicals, including dyes, glues, adhesive tape, undue amounts of oil and grease NOTE: If it is necessary to use them, their suitability is to be checked with their manufacturer.
16	Use of segregated manufacturing used for carbon steel and stainless steel to prevent carbon steel pick-up. Use of separate tools dedicated for use with stainless steel only, particularly grinding wheels and wire brushes. Wire brushes and wire wool of stainless steel, preferably an austenitic grade
Transport	
17	Special measures needed for protecting manufactured components in transit

Table D.1.-1: List of handling and storage preventive measures

D.2 Storage and handling of welding consumables

The welding consumables shall be stored, handled and used in accordance with the manufacturer's recommendations.

If electrodes and fluxes need to be dried and stored, appropriate temperature levels and times shall be fulfilled in accordance with the manufacturer's recommendations or, in their absence, in accordance with the requirements of the table below.

Unused consumables at the end of the welding shift must be dried again in accordance with the above requirements. For the electrodes, drying shall not be done more than twice.

Remaining consumables have to be discarded.

Welding consumables showing signs of damage or degradation have to be discarded. Damage or degradation includes, for example, cracked or flaking coatings on coated electrodes, rusty or dirty wire electrodes, and wire electrodes with chipped or damaged copper coatings.

	Temperature level (T)	**Time (t)**
Drying [a)]	300 °C < T ≤ 400 °C	2 h < t ≤ 4 h
Storage [a)]	≥ 150 °C	before welding
Storage [b)]	≥ 100 °C	during welding
[a)] Drying cabinet [b)] Heating quiver		

Table D.2-1 : Temperature and duration of drying and storage