

# FORCE Certification A/S

## ABC-Reinforcement steel

### General terms for certification of reinforcement steel products 17th edition – October 2019

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## 1. Introduction and Basis for Product Certification

This ABC deals with the special requirements applicable to obtain and maintain a product certification according to applicable product standard given below.

In addition FORCE Certification A/S (**FC**) General Conditions apply. The General Conditions is shown on our website [www.forcecertification.com](http://www.forcecertification.com). The requirements are to be satisfied by FC as well as the manufacturer in the implementation and maintenance of the certification process. None of the informative guidelines or other conditions can replace the requirements described in this ABC.

FC issues product certificates to manufacturers of reinforcement steel products according to:

Standard	Products
EN 10080, 2 <sup>nd</sup> Edition of 2006	Steel for the reinforcement of concrete - Weldable reinforcing steel - General
prEN 10138-1: 2009*	Prestressing steels - Part 1: General requirements
prEN 10138-3: 2009*	Prestressing steels - Part 3: Strand

\* Available on request

Additional requirements given in the following standards may apply:

Standard	Products
Eurocode 2, EN 1992-1-1:2004/A1:2015, Edition 2	Design of concrete structures – Part 1-1: General rules and rules for buildings
EN 1992-1-1 DK NA:2017	Prestressing steels - Part 1: General requirements

The technical rules for mechanical testing and product specification are stated in the product standards, see also annex B.

## 2. General

The terms in this ABC must be met in order to achieve a certification of product.

Manufacturers who apply for product certification accepts to enter into a certification agreement with FC. Unless explicitly stated by the manufacturer, the certification agreement will assume that the applicant, manufacturer and factory are all identified by the name and address of the FC client. This certification agreement states conditions and obligation for continuous certification of the product(s) in question.

A successful completion of a certification process results in issue of a certificate, and the manufacturer then has permission according to chapter 10 and annex B to use the FC logo on products or in marketing. The product certificate verifies that FC is confident that the manufacturer's reinforcement steel products fulfil the requirements and levels given in the product standards and specified on the product certificate.

Regular surveillance audits will be made to confirm that the Factory Production Control (FPC) system of the manufacturer is maintained and that the certified products meet the requirements throughout the period of validity.

## 3. Application for Product Certification

The following activities have to be carried out when a manufacturer applies for a product certification of a product:

- Forwarding of application form to FC together with information (specification of product).
- FC prepares a testing program according to the specified testing standard (as stated in the product standards) and the testing program is forwarded to the manufacturer for acceptance.
- If type testing has been performed previously and/or the properties of the product have been currently documented within the past 12 months, e.g. through other agreements, the results may be used in the evaluation for the certification.
- Agreement on time schedule for audit visit and type testing.

## 4. Type Testing

Type testing includes the following activities:

- inspection from FC at the manufacturing facilities, where the manufacturer's organization and FPC system is audited
- sampling of test specimens for type testing
- type testing at FORCE Technology or another laboratories accredited under EA according to the specified standard in clause 1
- issuing of product certificate, when initial inspection and type test results fulfils the requirements

## 5. Audit of FPC and Sampling of Products

### 5.1 General

To achieve a product certification the manufacturer shall operate a documented and implemented FPC system appropriate to the organisation and production to fulfil the requirements in relevant standard mentioned in clause 1.

### 5.2 Procedure for Initial Audit

If the manufacturer does not already have had the FPC system audited in relation to the relevant reinforcement steel product standard an initial audit will take place. If the manufacturer already has products approved then the initial audit will take place in continuation of a periodic audit. The initial audit will as a minimum focus on the following FPC points for methods, responsibility and execution:

- purchase
- on-receipt inspection
- process control
- process inspection
- final inspection
- testing
- control of nonconforming product
- corrective actions
- inspection equipment
- measuring equipment
- testing equipment

- product identification
- traceability
- a responsible inspector
- competence of personnel

Furthermore the necessary test specimens for type testing are sampled.

### 5.3 Procedure for Periodic Audit

The FC-auditor prepare an audit program for five years ensuring that all aspects of the FPC specified in 5.2 are evaluated.

Periodic audit by FC at the manufacturer is done as agreed and specified in the standard. The following issues are as a minimum verified during the audit:

- continuously compliance with the FPC-system
- relevant changes in organization, FPC-system, equipment etc.
- product compliance with the type approved product
- examination of manufacturers plans and execution of inspection of the production, including internal testing of the products
- thirds party audit testing as specified in the relevant standard mentioned in clause 1

## 6. Manufacturer's Internal Production Tests

The manufacturer shall – as stated in the relevant standard mentioned in clause 1 – appoint an inspector who is responsible for carrying out the internal production control. The FC approved inspector shall be independent of the production and responsible for operating the FPC-system ensuring the homogeneity and quality of the certified reinforcement steel products.

Produced quantity, types with matching markings and all test results shall be recorded.

If mistakes or defects occur which have influence on the quality of the product and causing non-compliant product the manufacturer shall inform FC immediately.

## 7. Change in Product Specification or FPC

If the requirements to achieve and maintain a product certification according to the rules, operational documents, international and national standards and guidelines are changed within the period of validity of the certificate, the manufacturer shall implement these requirements before date of commencement.

### 7.1 Modification of Products

It is the obligation of the manufacturer to immediately notify FC when modification of the product, including Welding Procedure Specifications (WPS), certification of welders, etc. is planned. A change may influence the product certification.

If changes are made to the certified product the following activities must be performed:

- the manufacturer shall forward a revised product specification to FC
- if additional tests are to be required a test programme will be compiled and the tests performed

FC forwards new product certificate after finalizing of tests with satisfactory results.

### 7.2 Changes in the FPC System

Minor changes in the FPC system which have no influence on the final product may be informed to FC during periodic audits. Major changes must be informed to FC in order to obtain approval, before they are executed.

## 8. Record of Complaints

The manufacturer is obliged to set up a registration of complaint system relevant to certified products in accordance with this ABC. This register shall:

- register all complaints, which the manufacturer learns about products compliance with the requirements in the relevant standards
- be made available to FC

The manufacturer shall take appropriate action with respect to such complaints. The manufacturer shall document the actions taken.

## **9. Rules for communication of the certification**

At every reference of the product certification, the manufacturer must make sure that:

- the requirements of FC are met when the manufacturer refers to the status in the media such as the Internet, brochures or advertisements or in other documents;
- there is made no misleading declaration about the certification;
- the impression will not be given that the certification is valid for products beyond the scope of the certification;
- the certification will not be used in such a way that it could bring discredit to FC and reduce the trust of the public;
- certificates are published in full only
- the manufacturer in case of suspension or withdrawal of certification cease to use all advertising that refers to the certification, including sales material, brochures, homepage etc.

## **10. Rules for use of Certification Mark**

DANAK logo must not be used on the certified product.

FC's certification mark and logo are shown in Annex A. The certification mark must be used only on the product or product packing, while FC's logo can be used only at the working place or used on writing paper and advertising material for marketing purposes. FC's mark may be used on each product/product packing or for sales purposes. The following applies for use of mark:

- the mark shall be reproduced in its entirety and of reasonable size and uniform colour and followed by number of standard
- the mark is only to be used to accentuate the specific product of the manufacturer
- the mark must not bring discredit to the obtained product certification
- all use of the mark shall cease when the product certification terminates
- the manufacturer cease to use the FC logo and certification mark, and all references to the product certificate shall be withdrawn when the product certification terminates

## **11. Suspension and Withdrawal of Certificate**

FC has the right to suspend a certificate at any time during its period of validity:

- If the product no longer fulfils the specified requirements after retesting
- If manufacturer does not take corrective action within the time limits agreed upon
- If the manufacturer does not permit that surveillance or recertification audits are carried out with the required intervals
- If manufacturer misuses the certificate or the mark
- If manufacturer does not comply with the financial terms and conditions of the certification agreement
- If the manufacturer in any way brings discredit on FC
- If the manufacturer has no production of the specific product

During the period of suspension – normally 90 days - the certificate is temporarily invalid. Status of suspension will be published on FC website.

At any time FC has the right to withdraw a certificate during the time of suspension in the event that the manufacturer omits to correct the conditions that lead to the suspension within the time limit decided by FC. Soon after information about withdrawal of certification the manufacturer must at once return the certificate to FC.

Status about withdrawal certificates is available FC's website.

## **12. Confidentiality**

FC treats all information gained by its employees during the certification process or in any other manner as strictly confidential and will not pass on such information to unauthorised persons without the written consent of the manufacturer.

FC has taken measures to ensure that confidential information is not accessible to unauthorised persons.

The manufacturer should be aware of the fact that, as a consequence of DANAK accreditation, FC is under an obligation, upon request, to supply DANAK with all necessary information for its surveillance with the accreditation, including fees

and rates and basis for their calculation. Furthermore, FC is under obligation to receive surveillance visits by DANAK, and the company must accept that such a surveillance visit may include the certified activities at the manufacturer.

#### *Provisions related to GDPR*

FC does not require general access to manufacturer registrations including registered personal data, and access to sensitive personal data must be cut off. FC will not select or extract personal data from the manufacturer's registrations.

FC must have the opportunity to judge a representative number of employees in order to assess the competence of the staff within the applied certification scheme. This review will mainly take place when visiting the manufacturer's premises. If, in case of applications or documentation of corrective actions, the manufacturer sends evidence of employee competence to FC, this documentation shall not contain any personally sensitive information including CPR numbers, special categories of personal data, union membership or health information. FC deletes documents containing personal data after the assessment.

### **13. Appeals and complaints**

An appeal against a *decision* made by FC shall be addressed in writing within 4 weeks after the receipt of the decision to FC.

A complaint against FC's *activities* in connection with the certification, shall be addressed in writing within 4 weeks after the date of certification to FC.

Information on contact and procedure for complains appears from [www.forcecertification.com](http://www.forcecertification.com).

### **14. Publication**

FC maintains a list containing current and relevant information on all product certificates. FC undertakes to maintain an up-to-date database over issued certificates on the website, see [www.forcecertification.com](http://www.forcecertification.com).

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*Changes from 16<sup>th</sup> ed.: Updated with specific requirements to FPC*  
*Changes from 15<sup>th</sup> ed.: Provisions implemented in par. 9 regarding GDPR*  
*Changes from 14<sup>th</sup> edition: prEN 10138-sereis updated with 2009 edition*  
*Changes from 13<sup>th</sup> edition: Updating of standards and references to National Annexes*  
*Changes from 12<sup>th</sup> edition: Editorial changes and updating of standards and addresses.*

Annex A: Use of FORCE Certification A/S's Mark and Logo



***FORCE Certification A/S logos***

## Annex B: Overview of Specifications used on the Danish Market

### Introduction

The basis for the product specifications is:

Standard	Products
EN 10080, 2 <sup>nd</sup> Edition of 2006	Steel for the reinforcement of concrete - Weldable reinforcing steel - General
prEN 10138-1: 2009*	Prestressing steels - Part 1: General requirements
prEN 10138-3: 2009*	Prestressing steels - Part 3: Strand
Eurocode 2, EN 1992-1-1:2004/A1:2015, Edition 2	Design of concrete structures – Part 1-1: General rules and rules for buildings
EN 1992-1-1 DK NA:2017	Prestressing steels - Part 1: General requirements

The following reinforcing steel products are covered by the specifications:

- Hot rolled unalloyed ribbed steel, quenched and self-tempered
- Hot rolled alloyed ribbed steel, free cooled
- Hot rolled stainless ribbed steel, free cooled
- Hot rolled unalloyed ribbed steel, free cooled and cold stretched
- Cold rolled unalloyed ribbed steel
- Cold drawn unalloyed and indented steel
- Cold rolled stainless ribbed steel
- Cold drawn stainless and indented steel

### Product specifications

#### *General requirements*

Characteristic yield- or 0.2 stress:  $R_{ek} \geq 400$  MPa

Characteristic tensile-/yield ratio:  $(R_m/R_e)_k \geq 1,08$

Characteristic uniform elongation:  $A_{gk} \geq 3\%$

#### *Special requirements*

Characteristic uniform elongation:  $A_{gtk} \geq 8\%$

Characteristic yield- or 0.2 stress:  $R_{ek} \geq 550$  MPa

#### *Minimum values*

Annex C in Eurocode 2, EN 1992-1-1:2004/A1:2015, Edition 2: Design of concrete structures – Part 1-1: General rules and rules for buildings, is valid.

#### *Requirement or quantile values*

Annex C in Eurocode 2, EN 1992-1-1:2004/A1:2015, Edition 2: Design of concrete structures – Part 1-1: General rules and rules for buildings, is valid.

## Type testing

Rules and requirements in the relevant product standard are valid. Tests are performed according to the following standards:

- DS/EN ISO 15630-1, 1<sup>st</sup> Edition of 2002-07-08: Steel for the reinforcement and prestressing of concrete – Part 1: Reinforcing bars, wire rod and wire.
- DS/EN ISO 15630-2, 1<sup>st</sup> Edition of 2002-07-08: Steel for the reinforcement and prestressing of concrete – Test methods - Part 2: Welded fabric.
- DS/EN ISO 15630-3, 1<sup>st</sup> Edition of 2002-07-08: Steel for the reinforcement and prestressing of concrete – Test methods - Part 3: Prestressing steel.

## Fabrication Production Control (FPC)

- DS/EN 10080, 2<sup>nd</sup> Edition of 2006-01-13: Steel for the reinforcement of concrete - Weldable reinforcing steel - General.
- prEN 10138-1: Latest edition: Prestressing steels - Part 1: General requirements.

## Marking

CE-marking is not possible at this moment. The rolled in marking of the manufacturer is acceptable, although no EU coordination is available. FORCE Certification A/S provides logo for marking label.