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Kiwa certification scheme FprEN 10138

Certification scheme requirements for prestressing steels according to FprEN 10138:2009 part 1, 2 and 3

Trust
Quality
Progress

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1. Preface

This certification scheme explains the process of certification according to FprEN 10138:2009 part 1, 2 and 3 carried out by Kiwa as a Conformity Assessment body.

1.1 Scope

The following parts of the FprEN 10138 are applicable:

- FprEN 10138-1: 2009 Prestressing steels - Part 1: General requirements
- FprEN 10138-2: 2009 Prestressing steels - Part 2: Wire
- FprEN 10138-2: 2009 Prestressing steels - Part 3: Strands

The FprEN 10138-1 specifies general requirements for uncoated high tensile strength steel products, which are widely used for the prestressing of concrete and are also used for other tensile applications in the construction field. The FprEN 10138-1 specifies both the product requirements as the requirements for the evaluation of conformity to which both the manufacturer and Kiwa as Conformity Assessment body need to comply.

The FprEN 10138-2 specifies specific product requirements for technical (strength) classes of stress relieved cold drawn high tensile steel wire, either plain or indented. It is applicable to wire which has been straightened and stress relieved and then supplied in the form of coils or in bundles of cut lengths.

The FprEN 10138-3 specifies specific product requirements for technical classes of high tensile steel wire strand, which has been given a stress relieving heat treatment.

1.2 Framework of the FprEn 10138 certification scheme

Although the EN 10138 series are meant to be part of the CPR legislation for CE marking, this is not yet the case. Therefor the scheme is a private law scheme and can be voluntarily requested by manufacturers. The scheme does not set public law regulations.

Despite the fact that the EN 10138 series are not a part of the CPR legislation, Kiwa will use the Conformity Assessment procedures as are intended for the manufacturers and Notified bodies working under the CPR legislation.

The certification is based on all the requirements of the standard and not only on the requirements as set in the annex ZA of the standard.

For the FprEN 10138 series the conformity system is 1+. This means that Kiwa as a conformity assessment body will perform

- Initially: the initial type testing and an initial factory production control (FPC) audit
- Continuous: the audit testing and regular FPC audits (4x times per year).

The duration of the FPC audits is standard one full day but may depend on the scope and the amount of samples to be taken. The duration of the audit will be determined per manufacturer in the certification agreement.

The manufacturer needs to have a valid ISO 9001:2015 certificate which covers the product scope and production location for which the manufacturer will be or has been certified under this scheme.

If as part of the assessment laboratory reports are used to show that the requirements of the FprEN

10138 are met, it must be demonstrated that they have been drafted by a laboratory that complies with the accreditation standard ISO/IEC 17025. If initial type – and audit tests are performed at the production location of the manufacturer Kiwa will witness these tests.

The FprEN 10138-1 makes a reference to the ISO 15630-3: 2002 test standard. This standard is replaced by the ISO 15630-3: 2019 which has to be used for all new tests to be performed.

The Kiwa Regulations for Certification apply to these certification activities and lay down the rights and duties of both the manufacturer and Kiwa being the Conformity Assessment Body. Where applicable, this Certification scheme provides additional or modified conditions.

No Board of Experts has been appointed for this scheme. References to this in the Kiwa Regulations for Certification do not apply.

1.3 Relation to other certification schemes

The FprEN 10138 certification scheme can be easily combined with the KOMO certification schemes BRL 2401 ‘prestressing steel’ and BRL 1720 ‘prestressing steel FeP 2060 for foundation piles as those BRL’s are partly based on the FprEN 10138 series.

1.4 Terms and definitions

The technical terms and definitions given in FprEN 10138-1:2009 apply. For the evaluation of conformity the terms and definitions used in the CPR 305/2011 and the Kiwa customer guide ‘CE certification in the framework of the Construction Products Regulation (CPR)’ apply.

1.5 References

Annex I provides the references contained in this document.

2. The road to certification

2.1 The application

Based on your application we will send you a quotation including the initial assessment and the certification maintenance. When you sign the quotation and return it, this will form the certification agreement.

2.2 Performing initial type testing

We will start performing an initial type testing including the sampling according to FprEN 10138-1 Ch. 8.2. We will discuss the nature and number of tests with you in advance. Any outsourcing of the testing on behalf of Kiwa or any carrying out these tests at your location is always done in consultation with you. The tests to determine the special properties excluding the deflected tensile test are never to be performed at your location. It is also possible, under exceptional circumstances, to accept historical test results. Ask your contact person what the conditions are for this.

For the initial type testing all tests as described in the FprEN 10138-1 need to be performed and the results need to comply to the relevant FprEN 10138 standard.

Where a number of sizes in a product family are tested and one or more of the sizes does not acquire the required values then only the sizes that did pass the test shall be certified. If these constitute a size range then only this limited size range shall be certified.

2.3 Performing the initial Factory Production Control (FPC) audit

We will plan an initial on-site FPC audit. We ask you to inform us in advance about who the manager of the quality system is. He or she will act as the contact person for the audit team and will exercise effective guidance. The manager of the quality system must be available during the audit.

During the FPC audit we will verify if your quality system, as well as the organisation and the implementation of your FPC system comply to the requirements of FprEN 10138-1 Ch. 8.3.

The FPC audit consists of both a documentation assessment and an implementation assessment. In the **documentation assessment**, we assess whether your working method is sufficiently documented, up to date, available and compliant with the relevant standards.

Before performing the FPC audit on-site, the assessor may ask you to submit the quality system documentation and the ISO 9001 certificate and latest report so that we can carry out part of the documentation assessment in advance and prepare for the audit. If the documentation is not available or not suitable in its present form, the assessor may ask you to supplement or modify the documentation before making an appointment with you in order to perform the FPC audit on-site.

We will carry out the **implementation assessment** entirely at your location to assess whether you work in accordance with the method you have indicated.

Prior to the FPC audit, we will send you an audit report containing the assessment aspects and an **audit plan**. The audit plan contains the planning, duration and also the scope of the audit. The assessor will review the audit plan with you at the beginning of the FPC audit.

We will apply **the sanction policy**, as indicated in Annex II, of this document when assessing any findings.

2.4 Issuing the certificate

After the assessment, any outstanding nonconformities must be resolved and verified by us before we make a decision to issue the certificate.

The certificate you receive has an indefinite period of validity. It indicates the scope on the basis of which you are certified. A template certificate is included in Annex III.

2.5 Marking your product

After you received your certificate you have to mark your product according to FprEN 10138-1 Ch.10.1. On top of that the label shall give the relevant Kiwa logo as shown below and the certificate number.

2.6 Use of certificate, certification mark and logo

When issuing the certificate we will provide you with the Kiwa logos in JPG. and .EPS format as shown here.

The following rules apply to the use of these logos:

- Use of this logo is only permitted:
  - to you as a certified client;
  - in relation to the certified subject matter;
  - during the period of validity of the certificate.
- The execution requirements are as follows:
  - Logos may only be depicted in full, in the height/width ratio specified by Kiwa;
  - Displaying part of/additions to the logo is not permitted;
  - Images may only be displayed in black and white on a white or transparent background;
  - In order to ensure legibility, the minimum width of the image must be 1.5 cm.

You are entitled to use our Kiwa logos on your website, brochures and quotations.

You are **not** entitled based on this certification scheme to use the CE marking on your product.

Kiwa annually monitors the improper use of certificates and certification marks by the manufacturer. See the Kiwa Regulations for Certification for more details on the use of our Kiwa logos, certificate and certification mark.

3. Maintaining certification

3.1 Audit testing

We will carry out periodic product assessment (audit testing) including the sampling according to FprEN 10138-1 Ch. 8.4.2. Any outsourcing of the testing on behalf of Kiwa or any carrying out these assessments at your location is always done in consultation with you.

Every FPC audit (4x per year) we will take samples for performing the tests.

The test results are verified every FPC audit. If the results show that the production does not conform to the requirements, this will be a major non conformity. We will ask you to take appropriate measures according to our **sanction policy** (see annex II). The measures will depend on the type and significance of the nonconformities noted but shall include:

- an increase in the frequency of testing
- suggestion to change the condition of the production

In case significant deficiencies are not solved but confirmed by repeating tests, the Kiwa marking will be immediately stopped and/or removed for all suspect finished product.

Depending on the time required to take corrective measures, demonstrate conformity and the type and significance of the deficiencies we may decide to remove the suspected product type, quality and diameter range from the certificate.

3.2 periodic FPC audits

4x per year we will perform a FPC audit. During these audits we will assess if your system of factory production control continues to conform to the requirements of FprEN 10138-1 Ch. 8.3 and that you still have a valid ISO 9001:2015 certificate which covers your production location and the scope of products for which you are certified under the FprEN 10138-1.

2x per year during the FPC audit we will evaluate the results of the manufacturer long term quality level assessment.

For performing the periodic FPC audit the same information applies as when carrying out the initial FPC audit (see Chapter 2.3).

We will apply **the sanction policy**, as indicated in Annex II, of this document when assessing any findings.

3.3 Changing your scope

You are obliged to notify us of any changes in relation to the scope on the certificate (e.g. significant change of manufacturing conditions in the plant, change of the product or a change of production location) before you place these products on the market under the certificate. We then assess whether an additional assessment is necessary and change the certificate after a positive result of the assessment.

3.4 Termination of your contract

If you wish to terminate your certification agreement, please inform us in a timely manner. We require a 3 month advance notification.

Annex I: References

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

- FprEN 10138-1: 2009 Prestressing steels - Part 1: General requirements
- FprEN 10138-2: 2009 Prestressing steels - Part 2: Wire
- FprEN 10138-2: 2009 Prestressing steels - Part 3: Strands
- ISO 15630-3 Steel for the reinforcement and prestressing of concrete - test methods – part3: Prestressing steels
- Kiwa Regulation for certification
- Customer Guide - CE certification in the framework of the Construction Products Regulation (CPR)

Annex II: Sanction policy for the FPC audit

Major and minor nonconformities

We use two types of nonconformities: a minor and a major nonconformity.

A **minor nonconformity** is a finding that:

- does not affect the capability of the management system to process the intended results;
- has no direct effect on the conformity of the product or the process;.

A **major nonconformity** is a finding that:

- influences the capability of the management system to deliver the intended results (not effective control of the process);
- has a direct possible effect on the conformity of the product or the process, i.e. the product may not meet the performance;
- demonstrates systematic or repeated failure within the same control aspect (e.g. a number of minor nonconformities).

Repetition of a minor nonconformity

If we have identified a minor nonconformity on an aspect during the previous FPC audit and a nonconformity on the same aspect is identified during the next audit, this will automatically become a major nonconformity.

Follow-up in cases of a minor nonconformity

We may choose to either agree with you about the corrective measures directly during the FPC audit and to assess the effectiveness of the corrective measures at the next FPC audit. Or either to have the follow-up as stated in the event of a major nonconformity (see next paragraph).

Follow-up in the event of a major nonconformity

Within two weeks after the identification of the nonconformity you must send us an action plan including a time path for the implementation of the corrective measures that we have to approve. This action plan contains an investigation into the cause, extent of the nonconformity and corrective measures to resolve and to prevent it. We must verify within 3 months, in case of periodic FPC audit, or within 6 months, in case of an initial audit, after the identification of the nonconformity that the nonconformities have been corrected. The verification may be done by means of an extra on-site verification audit or by means of a documentation assessment if that also provides sufficient confidence in the effectiveness of the corrective measures.

If the verification of a major nonconformity does not lead to a positive finding, we will ask you to send us again an action plan for approval. We must verify within 3 months after the negative finding of the first verification that the nonconformities have been corrected.

Refusing, suspension and withdrawing certification

In the case of an **initial audit**, if the verification does not lead to a positive finding, we will refuse certification. After this, we will only consider a new application if you can prove that you have taken the corrective measures to meet all requirements.

In the case of **a periodic FPC audit**, if the second verification (see previous paragraph) does not lead to a positive finding, we will suspend the certificate. If after 3 months of suspension no demonstrably improvement has occurred, we will withdraw the certificate.

We may also use our the right to, directly after the identification of a nonconformity or after the first negative verification of the corrective measures, suspend, refuse or withdraw certification depending on the gravity of the nonconformity.

The Kiwa website will show that the certificate has been suspended or withdrawn. Further conditions for refusing, suspending and withdrawing certification and the possibility to appeal against these decisions are specified in the Kiwa Regulations for Certification.

Annex III: Certificate template

CERTIFICAAT

Certificate of
constancy of performance
K@@@@/@@

Issued	dd-mm-jjjj	Replaces	K@@@@/@@
First issued	--	Page	1 of 1

Prestressing steel according to FprEN 10138-1:2009

<Name Manufacturer>

Kiwa attests that all provisions concerning the assessment and verification of constancy of performance described in (Annex ZA of) the standard FprEN 10138-1:2009 under system 1+ for the performances set out in this certificate are applied and that the factory production control conducted by the manufacturer is assessed to ensure the constancy of performance of the construction product.

Type:	Wires (stress relieved cold drawn, smooth, intended) prEN 10138-2 Y1770C - 5,0 - R1-F1-C1 Strands (multi-wire, multi-wire compacted, indented and high bond) prEN 10138-3 Y1860S7 - d - R1-F1-C1 with d from 6,9 to 15,7
Steelmaking process:	Manufactured from carbon steel by cold reduction
Intended use:	For the prestressing of concrete structures
Requirements	FprEN 10138-1:2009 Prestressing steels - Part 1: General requirements FprEN 10138-2:2009 Prestressing steels - Part 2: Wire FprEN 10138-3:2009 Prestressing steels - Part 3: Strands Kiwa Certification scheme FprEN 10138

This certificate will remain valid as long as neither the standard, the construction product nor the manufacturing conditions in the plant are modified significantly, unless suspended or withdrawn.

Ron Scheepers
Managing director

Publication of this certificate is allowed.
Consult www.kiwa.nl in order to ensure that this certificate is still valid.

Manufacturer **Manufacturing plant**

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kiwa certified FprEN 10138-2 kiwa certified FprEN 10138-3