

# STANDARDS AND CONFORMITY ASSESSMENT

**Chris Clear** of the **British Ready-Mixed Concrete Association** sets out the background as to how the relationship between conformity assessment and Standard should be handled, and why it is such a complicated topic. The article refers to concrete as an example of a construction product outside the Construction Product Regulation (CPR), and cement as an example of a construction product covered by the CPR.

According to the international, European and British rules for drafting product Standards, they should not include any mandatory requirements for conformity assessment activities. Standards may contain requirements for sampling, testing and conformity criteria, but for these aspects to be part of conformity assessment then they should be expressed in a neutral way as they may be implemented by the manufacturer or supplier (first party), a user or purchaser (second party), or an independent body (third party).

For harmonised Standards, the system of conformity assessment is set by European regulation, or UK regulation where the UK aligns with the EU. For non-harmonised Standards, the requirements for conformity assessment are set by the specifier, or by the provisions valid in the place of use.

Most product Standards contain requirements for sampling and testing the product, and also any conformity criteria that need to be met to confirm conformity to the Standard. This is one reason why conformity assessment is often perceived as a necessary part of a Standard. However, for international, European and British Standards it is a rule that conformity assessment activities shall not be part of a product Standard.

## STANDARDS

Standards are the distilled wisdom of people with expertise in their

subject matter and who know the needs of the organisations they represent – such as manufacturers, sellers, buyers, customers, trade associations, users, or regulators. The ideal is that there should be one Standard for each product that is adopted by everyone, everywhere. This ideal is supported by the International Standards Organisation (ISO) and the European Standards Organisation (CEN), where they have adopted almost identical requirements for drafting Standards:

- ISO/IEC Directives Part 2<sup>(1)</sup>
- CEN/CENELEC Internal Regulations Part 3<sup>(2)</sup>.

## CONFORMITY ASSESSMENT

Significantly, both the above documents set the same rules with respect to conformity assessment, ie, Standards containing requirements for products shall be written in accordance with the 'neutrality principle', such that conformity can be assessed by a manufacturer or supplier (first party), a user or purchaser (second party), or an independent body (third party). These documents continue with, "Such documents shall not include requirements related to conformity assessment other than requirements which are necessary to provide repeatable and reproducible conformity assessment results". This means it is permitted to include requirements for test methods and sampling rates together with the conformity criteria in the product Standard.

However, it is not permitted to include requirements for who does the sampling and testing for conformity assessment, nor to include competence requirements for whomever carries out conformity assessment. In summary, it can be said that product Standards, and the related test Standards, shall describe 'what' and 'how', but not 'who'.

As one would expect, there are Standards for conformity assessment; indeed due to the complicated nature of conformity assessment there is a series of Standards, but the lead Standard is EN ISO/IEC 17000<sup>(3)</sup>. This series of Standards sets the basis for how conformity assessment is dealt with in international, European and British Standards.



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### GOVERNMENT AND CONFORMITY ASSESSMENT

The Government has set a comprehensive 'Conformity Assessment and Accreditation Policy in the United Kingdom'<sup>(4)</sup>, which reiterates the benefits as:

- provide purchasers with confidence in the suppliers, products or services they use
- help businesses be competitive
- facilitate trade
- create market advantage
- provide a visible link between Standards and the market.

If applied incorrectly, however, conformity assessment can also:

- be a burden on business
- create barriers to trade

- inhibit innovation
- confuse the market.

The Government is very clear that conformity assessment schemes should be driven either: by market demand, including demand from end-users and consumers; or, where justified, by the public interest as implemented by regulators rather than by those with a commercial interest in conformity assessment. Conformity assessment procedures should be those that impose the lightest burden on business, commensurate with the objective to be achieved.

### CONCRETE STANDARDS AND CONFORMITY ASSESSMENT

Standards, in themselves, are voluntary. For example, in the UK,

concrete is specified or supplied to be conforming with BS EN 206<sup>(5)</sup> and BS 8500-2<sup>(6)</sup>.

Specifying or supplying in accordance with BS 8500-2 means that the requirements of BS EN 206 are automatically invoked.

It is important to emphasise that there are no regulations in the UK that explicitly require concrete to conform to BS EN 206 and BS 8500-2. These Standards are voluntary. However, most concrete is specified and supplied in accordance with these Standards because the customer knows that what is specified is clearly defined and the supplier knows what is required to ensure the concrete supplied meets the specification. Where the specifier requires third-party verification that the concrete conforms to BS EN 206 and BS 8500-2, then this can be performed by an accredited conformity assessment body.

### ACCREDITED BODIES

There are two well-established accredited conformity assessment schemes for concrete in the UK, which are:

- Quality Scheme for Ready-Mixed Concrete, QSRMC
- BSI Kitemark Scheme for Ready-Mixed Concrete, BSI KSRMC.

These bodies are accredited by the United Kingdom Accreditation Service, UKAS, the Government accreditation body.

Specifiers are free to specify that the concrete supplied to their project(s) shall be from a supplier holding QSRMC or KSRMC certification. National Highways (formerly Highways England) *Specification for Highway Works*<sup>(7)</sup> requires QSRMC or an equivalent accredited certification scheme. The National House Building Council in its Standards<sup>(8)</sup> includes requirements for any ready-mixed concrete supplied to be covered by QSRMC, KSRMC or equivalent certification.

### PRODUCT CONFORMITY CERTIFICATION

The specification of a designated concrete to BS 8500-2 includes the normative requirement for the producer to have product conformity certification with specified minimum requirements. Where such certification is not required, or where certification without minimum requirements is preferred, then the specifier has the option of specifying a



designed, prescribed, standardised prescribed or proprietary concrete, together with whatever level of product conformity certification is considered appropriate.

As discussed earlier, the ISO/IEC Directives and CEN/CLC IR3 prohibit linking a requirement for certification to be necessary to conform to a Standard and the British Standards Institution should follow the ISO/IEC Directives and CEN/CLC IR3. However, it is permissible for BS 8500-2 to include requirements for conformity assessment for two reasons:

1. BSI rules for the structure and drafting of UK Standards<sup>9</sup> is an expanded version of the ISO/IEC Directives and CEN/CENELEC Regulations. The ISO/IEC Directives and CEN/CENELEC IR3 rule that, "Such documents shall not include

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requirements related to conformity assessment other than..." is modified to "As a general rule, such documents should not include provisions related to conformity" in the BSI rules. However, the inclusion of conformity assessment has to be approved and this is why the foreword to BS 8500 includes the BSI statement that "The requirement for third-party certification has been approved by the Standards Policy and Strategy Committee".

2. 'Designated concretes' is only

one method of specifying concrete and there are other methods of supplying the same concrete conforming to all the technical requirements but without including the requirement for third-party certification.

Concrete to BS EN 206 is not part of the EU Construction Products Regulation but if it were, the requirement for a conformity assessment system(s) would be set at the European regulatory level.

### CONFORMITY ASSESSMENT AND REGULATIONS

Cement to BS EN 197-1<sup>(10)</sup> is a primary constituent of concrete and is covered by the CPR, and therefore BS EN 197-1 is known as a harmonised Standard. This means that conformity assessment requirements are set by the regulation where the term used is 'Attestation and Verification of Constancy of Performance' or AVCP. It is important to note that CEN IR3 applies to BS EN 197-1 as it applies to any CEN Standard and so where the Standard can only include requirements necessary to provide repeatable and reproducible conformity assessment results. Requirements for cement are set at the European regulatory level but details of the AVCP system and assigned responsibilities are set in a different Standard, EN 197-2<sup>(11)</sup>. For clarity, within the EU the specifier just specifies cement to EN 197-1, the requirements set out in EN 197-2 are duties for the manufacturer and conformity assessment body to satisfy the law.

Even though the UK has left the European Union, part of the agreement appears to be that the UK will still effectively abide by the CPR, but the terms 'harmonised Standard' and 'CE Marking' are to be replaced by 'designated Standard'

and 'United Kingdom Conformity Assessment (UKCA) Marking', respectively.

### AMENDED CONCRETE STANDARD

The recently published second amendment to EN 206 is a result of a CEN technical board decision (Decision BT 21/2017) in 2017 that EN 206 shall be revised because the conformity aspects were not in line with CEN guidance on conformity assessment. This is only an interim amendment in that it just clarified that the Annex C is informative, whereas in the unamended version the Annex was incorrectly identified as normative. As the UK application of EN 206 with the complementary British Standard BS 8500-2 always interpreted Annex C as informative, there are no changes required to UK practice. To remove all the breaches of CEN Regulations, further revision of EN 206 is required and work is already underway with a target publication date aligned with publication of the revised Eurocodes around 2024 to 2025. **C**

#### References:

1. INTERNATIONAL STANDARDS ORGANISATION, *ISO/IEC Directives Part 2. Principles and rules for the drafting of ISO and IEC documents*. Eighth Edition, ISO, Geneva, 2018.
2. EUROPEAN COMMITTEE FOR STANDARDIZATION AND THE EUROPEAN COMMITTEE FOR ELECTROTECHNICAL STANDARDIZATION, *Internal Regulations Part 3 – Principles and rules for the structure and drafting of CEN and CENELEC documents (ISO/IEC Directives – Part 2:2018, modified)*. CEN-CENELEC, Brussels, June 2019.
3. INTERNATIONAL STANDARDS ORGANISATION, EN ISO/IEC 17000. *Conformity assessment. Vocabulary and general principles*. ISO, Geneva, 2020.
4. DEPARTMENT FOR BUSINESS, ENERGY AND INDUSTRIAL STRATEGY. *Conformity Assessment and Accreditation Policy in the United Kingdom. Guidance*. Office for Product Safety and Standards, Birmingham, 2021.
5. BRITISH STANDARDS INSTITUTION, BS EN 206. *Concrete. Specification, performance, production and conformity*. BSI, London, 2013+A2:2021.
6. BRITISH STANDARDS INSTITUTION, BS 8500. *Concrete. Complementary British Standard to BS EN 206. Part 2 – Specification for constituent materials and concrete*. BSI, London, 2015+A2:2019.
7. NATIONAL HIGHWAYS. *Manual of Contract Documents for Highway Works. Volume 1 – Specification for Highway Works. Appendix B – Product Certification Schemes*. Available at: <https://bit.ly/3i3kvd8>, May 2014.
8. NATIONAL HOUSE BUILDING COUNCIL. *NHBC Standards 2021*. NHBC, Milton Keynes, available at: <https://bit.ly/3i2E31b>, January 2021.
9. BRITISH STANDARDS INSTITUTION, *Rules for the structure and drafting of UK standards*. Second Edition, BSI, London, April 2017.
10. BRITISH STANDARDS INSTITUTION, BS EN 197. *Cement. Part 1 – Composition, specifications and conformity criteria for common cements*. BSI, London, 2011.
11. BRITISH STANDARDS INSTITUTION, BS EN 197. *Cement. Part 2 – Assessment and verification of constancy of performance*. BSI, London, 2020.