

The chromium (VI) legislation for cement Compliance protocol for chromium (VI) content of cement

Introduction

Since 17 January 2005, an amendment to the UK's COSHH regulations (implementing EU Directive 2003/53/EC) has restricted the marketing/supply and use of cement and cement-containing preparations, where they contain when hydrated, more than 0.0002 % (2 ppm) chromium (VI) by dry weight of cement. Up to this point, BCA Member Companies have been self-verifying the chromium (VI) content of their chromium (VI)-reduced cements in accordance with a set of principles that are now formalised in a Kitemark Verification Scheme developed by BSI Product Services. This Scheme is based on draft proposals in normative Annex A of prEN 196-10 'Evaluation of the compliance of cement with the regulatory limit in Directive 2003/53/EC on water-soluble hexavalent chromium content'. The test method used is described in the same draft European Standard (see Fact Sheet 10.6 in this series).

Status and requirements of the BSI Kitemark verification scheme

The Kitemark Verification Scheme is now open to applicants and consists of four main elements:

- assessment of factory production control by the verification body;
- testing of product; continual autocontrol testing by the manufacturer and periodic audit testing by both the manufacturer and verification body;
- evaluation of results of autocontrol and audit testing leading, in the case of compliance, to the issue of a Kitemark licence and a 'verification certificate' or, leading in the case of non-compliance, to a set of graded actions with withdrawal of the verification certificate as the ultimate sanction;
- on-going assessment by the verification body.

Principles of autocontrol and audit testing of chromium (VI)-reduced cements

For the purposes of autocontrol testing, the manufacturer samples cement despatched from the factory at the rate of one sample per month. Samples are stored under the manufacturer's recommended storage conditions (stable temperature and moisture) until the end of the declared shelf-life period, \pm five days. Cement sampled from bulk supply is stored in completely filled, airtight, sealable containers, whereas cement sampled from packed supply is stored in unopened, undamaged bags. At the end of the shelf-life, \pm five days, the manufacturer determines the water-soluble chromium (VI) content of all the stored samples and records the results. Audit samples are 'spot' samples taken under the supervision of the verification body at the point of despatch of cement from the factory at a minimum frequency of one per year but the frequency can be increased by BSI PS in the case of non-compliance. Storage is under the responsibility of the manufacturer until the end of the declared shelf-life, \pm five days. At that point, the samples are despatched to the verification body's testing laboratory where they are sub-sampled and sealed into tamper-proof containers. The test laboratory determines the water-soluble chromium (VI) content of one sub-sample and the manufacturer carries out the same determination on the other.

Single result compliance criterion and the evaluation of test results

Each test result is evaluated by the verification body against a 'single result compliance criterion' defined as follows:

"The regulatory limit specified in the Annex to Directive 2003/53/EC constitutes a single result compliance criterion as a maximum percentage value. A single test result shall be deemed to demonstrate compliance when it does not exceed the maximum percentage criterion, each expressed to four decimal places, and taking due account of the uncertainty of the test method (EN 196-10)."

In addition, the verification body carries out statistical assessments on the manufacturer's autocontrol test results, at least twice a year, to check whether they are accurate and also belong to the same statistical population as the results obtained from audit testing. Any deviations are compared with the precision estimates given in test method prEN 196-10.

Health and safety

Reducing agents, used to lower soluble chromium (VI) content of cements, do not make cement safe to handle without PPE. Cement, when wet, can cause two types of dermatitis, allergic and irritant. Reducing agents only protect against allergic dermatitis. The same PPE is, therefore, required for handling wet cement now that reducing agents have been introduced as was previously required. Irrespective of the introduction of reducing agents, correct PPE will ensure users do not suffer allergic dermatitis, irritant dermatitis or burns.

Where can I find out more?

For product-specific information, contact your supplier/manufacturer directly. For generic information, contact: M G Taylor at BCA, Tel: 01276 608716, mtaylor@bca.org.uk

Document No: ST/FS/10.7	Revision No: 2
Author: M G Taylor	Drafted: November 05 Last revised: 25 April 06



BUXTON LIME INDUSTRIES LIMITED

CASTLE CEMENT

HEIDELBERGCEMENTGroup



United Kingdom