

MPA Cement Fact Sheet 10.3

Chromium (VI) and cement

Information for ready-mixed concrete producers and concrete product manufacturers

Introduction

Clause 47 of *Annex XVII* of the REACH Regulation regulates cement and cement-containing preparations for their water-soluble chromium (VI) content. It has the objective of minimising the occurrence of chromium (VI)-related allergic dermatitis which can arise from contact with wet cement during use [see Fact Sheet 10.1 in this series].

MPA Cement' Member Companies approach to meeting the requirements of the legislation

In order to comply with the legislation, MPA Cement's Members control the amount of water soluble chromium (VI) in all bulk and bagged cements (and their other cement-containing products/preparations) by the addition, where necessary, of small amounts of a reducing agent such as ferrous sulfate or stannous sulfate. In the UK, this means that all their cements have levels of soluble chromium (VI), when water is added to the cement, that are no more than 2 ppm (0.0002%) by mass of the dry cement.

Shelf-life of cement

Cement manufacturers' responsibility

Reducing agents added to the cement during production have a limited period ('shelf-life') of effectiveness. After this period has expired they can no longer be relied upon to keep the soluble chromium (VI) level below 2 ppm when the cement comes into contact with water. Under the legislation, a storage period ('shelf-life') has to be declared for cement treated with a reducing agent and MPA Cement's Members declare this to be 61 days from the date of despatch for bulk delivery of most common cements. For cement packed in bags (paper or plastics) different storage periods can apply. Declared shelf-life applies only to cement that has been stored in accordance with the manufacturer's recommendations.

The cement manufacturer's responsibility for controlling the soluble chromium (VI) content ends at the expiry of the declared storage period (shelf-life), when stored in accordance with the manufacturer's recommendations.

Concrete producers' responsibility

Concrete producers and concrete product manufacturers also have a responsibility to ensure that the fresh concrete that they produce meets the requirements of the legislation. They are able to discharge this responsibility, in respect of cement, by ensuring it is stored in accordance with the manufacturer's recommendations. This ensures that fresh concrete is not produced containing cement that has passed the shelf life indicated on the delivery documents. However, MPA Cement has encouraged concrete producers and concrete product manufacturers to verify with the Health and Safety

Executive (HSE) that the above conditions are sufficient to meet their own statutory obligations under REACH. Any liability for chromate-related dermatitis arising from fresh concrete made with cement that is beyond its declared storage period resides with the concrete producer.

Cement performance

MPA Cement's Members only add a very small quantity of reducing agent to cement (typically below 0.5% by mass of cement). Trials to date have indicated that at these low levels of addition, there are no significant changes to the performance of the cement in concrete. A slight reduction in concrete workability may, however, be observed and it is possible that when used in combination with some additions, an increase in setting time might also be experienced.

Labelling of cement

In addition to the normal health and safety warnings, delivery documents for cement now include the following information: the date of dispatch, the declared storage period (shelf-life) from the date of despatch and the recommended storage conditions relevant to the declared storage period. Other information is at the discretion of the manufacturer and this currently includes a 'use-by-date' and the consequences of using the cement after the declared storage period or when improperly stored.

Health and safety

Reducing agents do not make cement safe to handle without PPE (personal protective equipment). Cement, when wet, can cause two types of contact dermatitis, *allergic* dermatitis and *irritant* dermatitis. Reducing agents only protect against allergic dermatitis. The same PPE is required for handling wet cement since reducing agents were introduced as was previously required. Correct PPE would 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: C McCague, Tel: +44(0)20 7963 8000, colum.mccague@mineralproducts.org

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