

CAA Admixture Update spring 2011

Admixture Standards

EN 480 parts 1 and 13 for reference concrete and mortar **have passed the** UAP amendments to allow a higher specific surface range for the CEM I reference cement and will become effective later this year. This should improve the supply situation. In the mean time reference cement to the current spec is still available through CAA.

EN 480 part 8 **has passed** enquiry to change the method for determining dry material content so that constant weight rather than a fixed time becomes the standard method.

EN 480part15 and EN 934part 2 are under development to include Viscosity Modifying Admixtures (VMA) mainly for use in SCC. The draft changes to EN 934-2 have passed at enquiry.

Cementitious Products in contact with Drinking Water

The water regulators from the 4MS group (UK, F, NI, D) have signed a memorandum of understanding for mutual recognition of products approved at national level in any of the 4 MS for drinking water applications.

Their work is largely outside the scope of M/136, DG Enterprise and CEN so in future a more harmonised European approach to product approvals will still be required.

Other MS may choose to join the 4MS mutual recognition scheme

The 4MS common approach to cementitious products is still being developed but will use the harmonised test methods developed by TC 164.

Ready mix / site mixed will not be included and will continue to be under national regulations.

The 4MS mutual approval of factory made cementitious products will be accessed by testing the final product for organoleptic properties, TOC, microbial growth and migration of specific metals and organic substances.

All admixture raw materials will have to appear on a positive list, this will include raw materials for grinding aids, release agents, curing compounds and coatings on fibres.

Admixtures, cement/additions, release agents, curing compounds and fibres can have separate approvals testing leading to a certificate of conformity which will allow reduced testing for the final cementitious product. These may also become a requirement for Ready mix / site mixed applications.

CAA is working with the UK DWI in developing the 4MS common approach and has a seat as UK expert at the 4MS cementitious sub group.

Because the 4MS scheme is outside M/136 and not EU harmonised, the requirements will probably not go into product standards, eg EN 934-1 in the near future.

The immediate requirement for EFCA is to update the current list of substances used to manufacture admixtures, grinding aids, release agents and curing compounds

Regulated Dangerous Substances (RDS)

The European Commission are revising product mandates to take account of the approach of CEN TC 351 on RDS and the development of harmonised standards to assess the release of RDS from construction products.

The concrete industry believe that concrete to EN 206 should be considered as WFT (Without Further Testing) based on currently available data as there are no known cases where concrete has released 'dangerous substances above regulatory limits'.

The concrete industry is currently preparing data for a dossier in support of this position.

The admixture industry is being asked to provide data in respect of certain chemicals from the commission 'indicative list' DS 041 - 051 rev 9 (copy available through John Dransfield if requested) that may be used as raw materials in admixtures.

The CPDW positive list may help with this although there may be some substances that will not be on this list.

As the CPR will have replaced the CPD by the time the TC 351 work is complete, any response needs to consider the CPR situation, ie all stages of the construction, use and demolition process.

EFCA have been asked to complete the admixture clauses in the dossier. This will include:

A statement on substances mentioned in the EC indicative list DS 041 - 051 rev 9

A specific statement on release of Formaldehyde and Ammonia

Concrete Industry Sustainability

The UK concrete industry has recently published its 3rd Sustainability report which includes data supplied by CAA. The report shows that the industry continues to reduce its carbon footprint and demonstrate excellent sustainability indicators against government targets. The report is available from:

http://www.sustainableconcrete.org.uk/pdf/MB_3rd_Concrete_Industry_Sustainability_Performance_Report.pdf

The industry is now collecting 2010 data for the 4th report. It is also working with consultants to set new sustainability targets to 2020. CAA is fully involved with this work as part of its commitment to support the concrete industry and improve its own sustainability credentials.

The mpa has produced a guidance document on specifying sustainable concrete which includes a section on admixtures. A copy of the guidance document is available from the publications page of the CAA web site.

EPD's

The current generic EPD's for admixtures are now 6 years old and require updating. The European Admixture Federation EFCA, has agreed to work with German Admixture Association (Deutsche Bauchemie) to produce updated versions, working to the new European standard prEN 15804. All the European Associations including CAA will be supplying data for this project. The current EPD's can be found at <http://www.admixtures.org.uk/publications.asp>

Waterproofers

The Concrete Society is currently collating supplier technical data on integral admixtures supplied as Water Resisting to EN 934-2 (commonly known as waterproofers). The society is particularly interested in the potential benefits than these admixtures could give to concrete durability. However for the user, the information provided by most suppliers is difficult to compare and the real benefits open to question as good quality, well designed concrete is already very durable. It is hoped that a Concrete Society technical report can be produced, giving the user additional guidance.

Air Entrainment and Freeze Thaw

The last two cold winters has resulted in a number of reported failures of concrete pavements as a result of freeze thaw and or salt scaling damage. There appears to have been a number of causes covering site control, workmanship, specification and materials. This has lead BSI B/517/1 to look again at the recommendations in BS 8500 and it is likely that there will be amendments to some of the clauses later this year.

Air entraining admixtures are an essential requirement for frost resistance of concrete pavements and other structures where the concrete is likely to be at or near saturation at the time of freezing. However, air entrainment is only effective if it is present in sufficient amounts after the concrete has been placed and hardened. The CAA has produced a recent advice sheet **AIS 16** to help concrete producers and users to supply and place air entrained concrete. This is available from the CAA web site.

EFCA

The European Federation of Concrete Admixture Associations is holding its annual assembly in Istanbul on June 9th. Key areas of activity include:

- Admixtures not covered by EN 934.
- Support for standardisation of the VMA admixtures.
- Provision of customer information required by the REACH legislation. Provision of information in support of the 4MS requirements for concrete in contact with drinking water and release of regulated dangerous substances.
- Updating generic EPD's and information on the long term fate of admixtures.
- EFCA also supports the work of the European Concrete Platform and is active on a number of CEN technical committees including TC 104/SC3 and TC 104/WG14.