Revision of EN 206-1

Workshop 4 March 2010
Hong Kong

EN 206-9: Self-compacting concrete

- Concrete – Part 9: Additional rules for SCC
- 'About' to be published with five test methods
- Part 9 will be incorporated into the revision of EN 206-1
- SCC is not a single concrete but a family of concretes

SCCs defined by:

- **Flowability – Slump-flow test- EN 12350-8**
- **Viscosity – V-funnel test (EN 12350-9) or T500**
- **Segregation resistance – Sieve segregation test (EN 12350-11)**
- **Passing ability – L-box (EN 12350-10) J-ring (EN 12350-12)**
- **EN 206-1 provides classes for all these tests**

EN 206-9: Slump flow classes

SF class	Limit values, mm
SF1	550 to 650
SF2	660 to 750
SF3	760 to 850

Further guidance

- Some given in an annex
- European Guidelines on SCC- specifications, production and use
- Available for free downloading from the ERMCO website

Revision of EN 206-1

- Formal work item will not be created until September 2010
- However, work has been underway for two years

Four Task Groups

- TG5: Use of additions
- TG10: Conformity and production control
- TG17: Equivalent durability procedure
- TG 18: Editorial panel

Objectives

- The aim is to leave as much as possible of the current EN 206 1 unchanged
- Try to take a further step towards having common European requirements, but accept that some topics are too difficult to reach a consensus
- However as tables are being added and removed, a major editorial review is needed

Strategic issues

- Claim is being made that certain topics covered by EN206 1 should be moved into other standards. These include:
  - Exposure classes
  - Chloride classes
  - Identity testing
- Such changes will be resisted, as the concrete standard has a very wide range of users, not just structural designers

Strategic issues

- Geotechnical standards, e.g. bored piles, pay lip service to EN 206 1
- Fully accepted that they have special needs, but EN 206 1 should provide for these special needs in a way that is verifiable
- JWGs have been set up to resolve both of these strategic issues

TG5: use of additions

- Now European standard for GGBS – EN 15167-1
- Rules for use needed
- Cannot yet agree k-values
- Framework for combination concept will be included

TG10: Conformity

- New definitions of:
  - Production day
  - Production week
  - Document
  - Average outgoing quality
  - Average outgoing quality limit
  - Fibre content

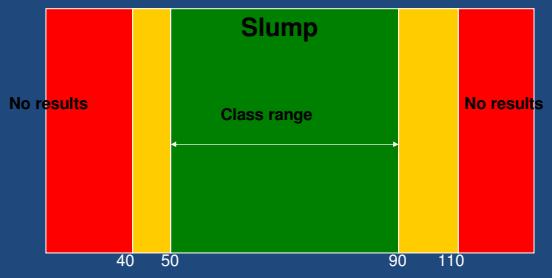
TG10: Conformity

- Introducing conformity criteria for fibre content
- Details still being debated

TG10: Conformity

- Conformity of consistence and air content will be based on single values
- Some tightening of the requirements
- Keeping class limits

Example Slump class S2 Main discharge



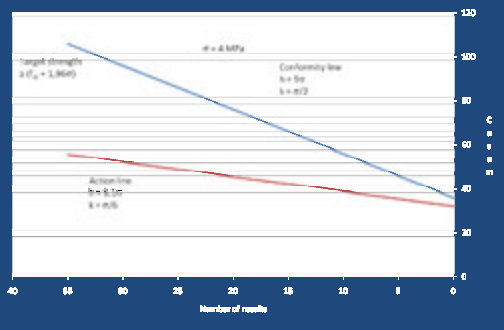
TG10: Conformity

- Vebe classes to be deleted
- Table 22: *Control of constituent materials,* to be deleted

TG10: Conformity

- Alternative to mean strength rule based on use of control charts
- Based on AOQL of 5%
- Debate still on over whether action limits or non-conformity limits are required

V-mask for action and conformity



TG10: Conformity

- Still to debate the maximum length of the assessment period
- An attempt is being made to reduce it from one year

TG17

- Equivalent durability concept is new
- Technical/political problems
- Essential for the future of concrete as tool to show a more sustainable concrete is adequately durable

TG17

- Reference concrete
- Candidate concrete no limit values
- By testing have to show candidate concrete is as good as reference concrete
- Accelerated tests introduce issues
- Ageing effects

TG18

- All other issues
- Number of important changes
- Clarify that recommended chloride limits for prestressed steel apply to steel in contact with the concrete
- Previously agreed interpretation of the production control clause to be included in the normative text

ASR

- In this revision, the reference back to national provisions remains
- New CEN/TR is being prepared
- CEN/TC51 is trying to agree a common way of expressing reactive alkalis
- CEN/TC154 is trying to develop a test method for measuring the alkali contribution from aggregates

ASR

- The aim is include in the 2015 version of EN 206 1 a common way of expressing the reactive alkalis in concrete
- Limit values will be NDP, as the level of safety is set at the national level

When ?

- Although it is called the 2010 revision of EN 206 1 it will not be published in 2010
- Best guess 2012 or 2013 if it is to be aligned with a revision of EC2