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Qualification of CEM II/B-M (P-LL) 42,5 R (Bascement Plus Slite) for use according to SS137003:2021+T2:2025

Commission

On commission from Heidelberg Materials Cement Sverige AB (HMC) RISE *Infrastructure and concrete technology* have reviewed or carried out qualification testing according to SS 137003:2021+T2:2025 annex T for Portland composite cement EN 197-1 CEM II/B-M (P-LL) 42,5R Slite (Bascement Plus Slite) certificate number 0402-CPR-C500441, produced in Slite by HMC. RISE has also evaluated these tests for use of this cement in exposure classes XC2 – XC4 and XF4.

RISE Research Institutes of Sweden AB is a notified body (number 0402) for product certification according to SS-EN 197-1.

Basis

Fabrication, testing and evaluation of specimens are reported in

- RISE report O100634-1234146 & O100634-1274868 ”Kvalifikationsprovningar av CEM II/B-M (P-LL) 42,5R, Slite enligt S137003:2021+T1:2024. Utvärdering för exponeringsklasserna XC, XD, XS och XF dated 2024-10-30,
- ”Bascement Plus VPI – Underlag för fastställande av användningskriterier enligt bilaga T i SS 137003:2021+T1:2024” daterad 2024-08-27”elaborated by HMC
- RISE report O100634-1346750 ”Kvalifikationsprovningar av CEM II/B-M (P-LL) 42,5R, Slite enligt S137003:2021+T2:2025. Utvärdering för exponeringsklasserna XC2 – XC4 samt XF4 dated 2025-12-16,

The report from HMC can be found as an annex to the RISE report from 2024-10-30.

The evaluation has been carried out by Ph.D. Elisabeth Helsing, senior researcher at RISE.

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Opinion

Test results from the qualification testing show that

Portland composite cement EN197-1 CEM II/B-M (P-LL) 42,5R Slite (Bascement Plus Slite)

certificate number 0402-CPR-C500441, can be used in the exposure classes mentioned below in accordance with SS137003:2021+T2:2025 when the application criteria given for the respective exposure classes below are applied.

Exposure class XC2: The highest equivalent water-to-cement ratio, vct_{ekv} , shall be 0,57.

Exposure classes XC3 and XC4: The highest equivalent water-to-cement ratio, vct_{ekv} , shall be 0,52.

Exposure class XF4:

- The highest equivalent water-to-cement ratio, vct_{ekv} , shall be 0,43.
- Evaluation of salt-frost testing on carbonated and non-carbonated surface can be carried out after 56 frost cycles.
- The frequency of continuous frost testing may be reduced in accordance with the rules in 8.1 (2) SS 137003:2021+T2:2025.

For other exposure classes the rules in SS 137003:2021+T2:2025 applicable for a CEM II/B-M (P-LL) 42,5R are presupposed to be applied.

When additions type II are added to this cement where possible according to SS 137003:2021+T2:2025 and the k -value concept is applied, the highest acceptable vct_{ekv} in exposure classes XC2 – XC4 and XF4 according to SS 137003:2021+T2:2025 based on Portland cement clinker content of the binder is presupposed to be applied.

RISE Research Institutes of Sweden AB Infrastructure and Concrete technology – Material Lab

Issued by

Lovise Sjöqvist

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