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European Technical Assessment Body
for construction products



European Technical Assessment

ETA-12/0537
of 17 July 2026

English translation prepared by DIBt - Original version in German language

General Part

Technical Assessment Body issuing the
European Technical Assessment:

Deutsches Institut für Bautechnik

Trade name of the construction product

Blast furnace cement CEM III/A 52,5 N-SR "Rotterdam"

Product family
to which the construction product belongs

Blast Furnace Cement CEM III/A with assessment of
sulfate resistance (SR) and optional with low effective
alkali content (LA) and/or low heat of hydration (LH)

Manufacturer

Heidelberg Materials Nederlands Cement B.V.
Rotterdam
Humberweg 9
3197 KE BOTLEK-ROTTERDAM
NIEDERLANDE

Manufacturing plant

Heidelberg Materials Nederlands Cement B.V.
Rotterdam
Humberweg 9
3197 KE BOTLEK-ROTTERDAM
NETHERLANDS

This European Technical Assessment
contains

10 pages including 5 annexes which form an integral part
of this assessment

This European Technical Assessment is
issued in accordance with Article 95(4) of
Regulation (EU) No 2024/3110, on the basis of

EAD 150009-01-0301

This version replaces

ETA-12/0537 issued on 11 October 2017

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Specific part

1 Technical description of the product

The blast furnace cement CEM III/A 52,5 N-SR "Rotterdam" is a cement which fulfils all requirements given in EN 197-1 for a common cement of strength class 52,5 N.

Furthermore, the blast furnace cement CEM III/A 52,5 N-SR "Rotterdam" has a high resistance against sulfate attack on concrete.

The assessment for the verification of the essential characteristic "sulfate resistance" (SR) was done on a blast furnace cement CEM III/A with a blast furnace content of 52 % by mass. The blast furnace slag has a glass content of at least 90 % and a $(\text{CaO} + \text{MgO})/\text{SiO}_2$ -ratio of at least 1,2.

The blast furnace cement CEM III/A 52,5 N-SR "Rotterdam" is manufactured from a Portland cement clinker, a blast furnace slag and an addition of gypsum or anhydrite or any mixture of them to control setting. The specific surface (Blaine) of the cement shall be at least $5500 \text{ cm}^2/\text{g}$ by combined grinding of the raw materials. It is also possible to manufacture the blast furnace cement CEM III/A 52,5 N-SR "Rotterdam" by separately grinding and subsequent mixing of the raw materials with a specific surface (Blaine) of at least $5500 \text{ cm}^2/\text{g}$.

The Portland cement clinker (K) content of blast furnace cement CEM III/A 52,5 N-SR "Rotterdam" is (35 – 48) % by mass. The blast furnace slag (S) content of blast furnace cement CEM III/A 52,5 N-SR "Rotterdam" is (52 – 65) % by mass.

The cement does not contain minor additional constituents.

2 Specification of the intended use in accordance with the applicable European Assessment Document

The blast furnace cement CEM III/A 52,5 N-SR "Rotterdam" is intended to be used for preparation of concrete, mortar, grouts and other mixes for construction and for the manufacturing of construction products.

The blast furnace cement CEM III/A 52,5 N-SR "Rotterdam" is especially characterized by a high resistance against sulfate attack on concrete.

The verifications and assessment methods on which the European Technical Assessment is based lead to the assumption of a working life of the of concrete incorporating the blast furnace cement CEM III/A 52,5 N-SR "Rotterdam" of at least 50 years. The indications given on the working life cannot be interpreted as a guarantee given by the producer, but are to be regarded only as a means for choosing the right products in relation to the expected economically reasonable working life of the works.

3 Performance of the product and references to the methods used for its assessment

3.1 Mechanical resistance and stability (BWR 1)

Essential characteristic	Performance
Specific surface of the cement (Blaine)	$\rho \geq 5500 \text{ cm}^2/\text{g}$
Early strength (2 days)	$R_{c,2d} \geq 20,0 \text{ N/mm}^2$
Standard strength (28 days)	$R_{c,28d} \geq 52,5 \text{ N/mm}^2$
Initial setting time	IST = 140 min
Soundness	S = 1 mm
Loss on ignition	LOI = 0,97 % by mass
Insoluble residue	IR = 0,25 % by mass

Essential characteristic	Performance
Sulfate content (as SO ₃)	SO ₃ = 3,1 % by mass
Chloride content	Cl = 0,05 % by mass
Sulfate resistance (SR)	see Annex A (A1 to A4)
Alkali content of the cement (as Na ₂ O _{eq}) (LA)	No performance assessed.
Heat of hydration (LH)	No performance assessed.

3.2 Content, emission and/or release of dangerous substances (BWR 3)

Essential characteristic	Performance
Water-soluble chromium (VI) content	No performance assessed.

4 Assessment and verification of constancy of performance (AVCP) system applied, with reference to its legal base

In accordance with EAD No. 150009-01-0301, the applicable European legal act is: 97/555/EC¹, amended by the Commission Decision 2010/683/EU².

The system to be applied is: 1+

5 Technical details necessary for the implementation of the AVCP system, as provided for in the applicable EAD

Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited with Deutsches Institut für Bautechnik.

The following technical specifications are referenced in this document:

EN 197-1:2011 Cement – Part 1: Composition, specifications and conformity criteria for common cements

Issued in Berlin on 17 July 2026 by Deutsches Institut für Bautechnik

Petra Schröder
Head of Section

beglaubigt:
Wagner

¹ Official Journal of the European Communities L 229/9 of 20 August 1997

² Official Journal of the European Communities L 293 of 11 November 2010

Testing of Sulfate Resistance of Blast-furnace cement CEM III/A – Flat prism method S_{FPM}

The testing procedure was done according to EAD 150009-01-0301, Annex A.

Table 1: Expansion of length of mortar flat prisms

	Expansion of the length [mm/m] after				
	14 days	28 days	56 days	90 days	180 days
CEM III/A 52,5 N-SR "Rotterdam" – storage at 20 °C					
Na ₂ SO ₄ -solution	0,11	0,11	0,18	0,20	0,33
Ca(OH) ₂ -solution	0,06	0,06	0,06	0,06	0,12
ΔL	0,05	0,05	0,12	0,14	0,21
CEM III/A 52,5 N-SR "Rotterdam" – storage at 5 °C					
Na ₂ SO ₄ -solution	0,05	0,08	0,12	0,10	-
Ca(OH) ₂ -solution	-0,01	-0,02	-0,03	-0,12	-
ΔL	0,06	0,10	0,15	0,22	-
CEM III/B 42,5 N-LH/SR – storage at 20 °C					
Na ₂ SO ₄ -solution	0,12	0,14	0,18	0,23	0,27
Ca(OH) ₂ -solution	0,07	0,08	0,08	0,12	0,11
ΔL	0,05	0,06	0,10	0,11	0,16
CEM III/B 42,5 N-LH/SR – storage at 5 °C					
Na ₂ SO ₄ -solution	0,00	0,00	0,02	0,13	-
Ca(OH) ₂ -solution	-0,04	-0,04	-0,04	0,05	-
ΔL	0,04	0,04	0,06	0,08	-
CEM I 42,5 R-SR3 – storage at 20 °C					
Na ₂ SO ₄ -solution	0,15	0,18	0,26	0,46	0,90
Ca(OH) ₂ -solution	0,09	0,09	0,12	0,11	0,09
ΔL	0,06	0,09	0,14	0,35	0,81
CEM I 42,5 R-SR3 – storage at 5 °C					
Na ₂ SO ₄ -solution	-0,09	0,02	0,06	0,36	-
Ca(OH) ₂ -solution	-0,13	-0,11	-0,06	-0,02	-
ΔL	0,04	0,09	0,12	0,38	-

Blast furnace cement CEM III/A 52,5 N-SR "Rotterdam"

Results of the assessment "sulfate resistance (flat prism method) – S_{FPM} "
Expansion of the length

Annex A1

Testing of Sulfate Resistance of Blast-furnace cement CEM III/A – Flat prism method S_{FPM}

The testing procedure was done according to EAD 150009-01-0301, Annex A.

Table 2: Dynamic modulus of elasticity of mortar flat prisms

	Dynamic modulus of elasticity in kN/mm ² after					
	0 days	14 days	28 days	56 days	90 days	180 days
CEM III/A 52,5 N-SR "Rotterdam" – storage at 20 °C						
Ca(OH) ₂ -solution	31,1	34,2	35,7	37,4	38,3	39,5
Na ₂ SO ₄ -solution	31,7	36,5	38,0	37,5	35,6	34,2
CEM III/A 52,5 N-SR "Rotterdam" – storage at 5 °C						
Ca(OH) ₂ -solution	32,1	32,9	34,0	35,1	36,2	-
Na ₂ SO ₄ -solution	31,7	34,2	36,1	36,1	35,7	-
CEM III/B 42,5 N-LH/SR – storage at 20 °C						
Ca(OH) ₂ -solution	28,6	30,9	32,6	34,8	36,5	38,1
Na ₂ SO ₄ -solution	28,5	33,1	33,5	34,8	35,0	32,8
CEM III/B 42,5 N-LH/SR – storage at 5 °C						
Ca(OH) ₂ -solution	29,0	29,7	30,0	30,7	31,6	-
Na ₂ SO ₄ -solution	28,5	30,89	31,6	32,6	32,6	-
CEM I 42,5 R-SR3 – storage at 20 °C						
Ca(OH) ₂ -solution	35,8	36,4	36,9	37,9	38,6	38,9
Na ₂ SO ₄ -solution	35,3	37,4	38,3	39,1	39,6	39,9
CEM I 42,5 R-SR3 – storage at 5 °C						
Ca(OH) ₂ -solution	35,3	36,2	36,4	36,9	37,5	-
Na ₂ SO ₄ -solution	36,2	37,8	38,3	38,7	38,6	-

Blast furnace cement CEM III/A 52,5 N-SR "Rotterdam"

Results of the assessment "sulfate resistance (flat prism method) – S_{FPM} "
Dynamic modulus of elasticity

Annex A2

Testing of Sulfate Resistance of Blast-furnace cement CEM III/A – Flat prism method S_{FPM}

The testing procedure was done according to EAD 150009-01-0301, Annex A.

Table 3: Mass of mortar flat prisms

	Mass in g after					
	0 days	14 days	28 days	56 days	90 days	180 days
CEM III/A 52,5 N-SR "Rotterdam" – storage at 20 °C						
Ca(OH) ₂ -solution	146,0	146,3	146,5	146,7	146,8	147,1
Na ₂ SO ₄ -solution	146,5	146,4	146,5	147,3	148,0	149,1
CEM III/A 52,5 N-SR "Rotterdam" – storage at 5 °C						
Ca(OH) ₂ -solution	147,9	148,4	149,2	149,0	149,0	-
Na ₂ SO ₄ -solution	147,4	147,6	147,9	148,3	149,0	-
CEM III/B 42,5 N-LH/SR – storage at 20 °C						
Ca(OH) ₂ -solution	144,9	145,4	145,4	145,6	145,8	146,0
Na ₂ SO ₄ -solution	145,00	145,5	145,8	145,8	146,3	147,3
CEM III/B 42,5 N-LH/SR – storage at 5 °C						
Ca(OH) ₂ -solution	145,8	146,3	146,3	146,9	146,4	-
Na ₂ SO ₄ -solution	146,0	146,4	146,4	146,5	146,7	-
CEM I 42,5 R-SR3 – storage at 5 °C						
Ca(OH) ₂ -solution	147,7	148,2	148,3	148,6	148,7	148,6
Na ₂ SO ₄ -solution	147,1	147,4	147,7	147,9	148,5	149,0
CEM I 42,5 R-SR3 – storage at 5 °C						
Ca(OH) ₂ -solution	147,6	148,2	148,3	148,6	149,1	-
Na ₂ SO ₄ -solution	146,8	147,5	147,5	147,8	148,0	-

Blast furnace cement CEM III/A 52,5 N-SR "Rotterdam"

Results of the assessment "sulfate resistance (flat prism method) – S_{FPM} "
Mass of the mortar flat prisms

Annex A3

Testing of Sulfate Resistance of Blast-furnace cement CEM III/A – Flat prism method S_{FPM}

The testing procedure was done according to EAD 150009-01-0301, Annex A.
After a testing period of 180 days the specimens show no expansion damages, cracks or flaking based on formation of ettringite or thaumasite, see figures A1 to A4.

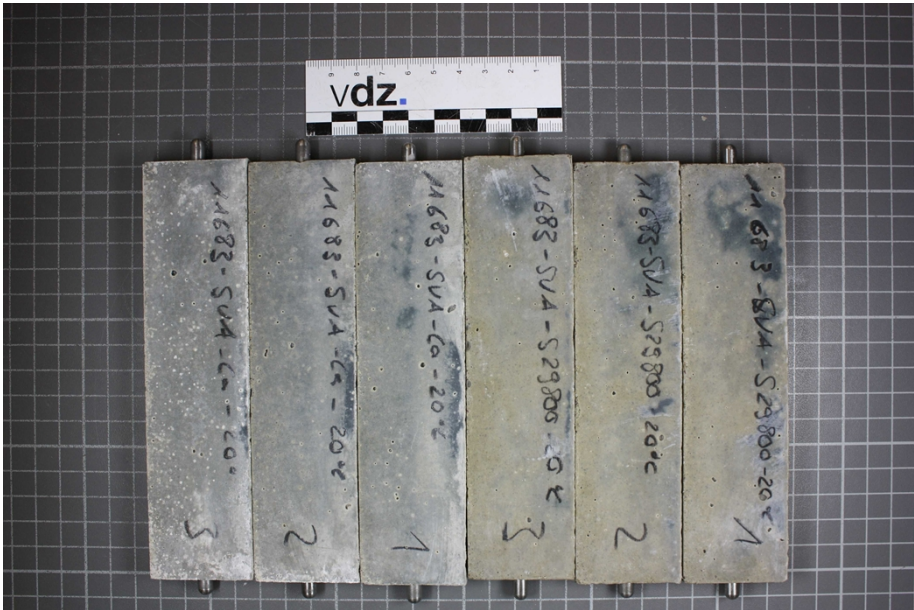


Figure A1: Specimens with CEM III/A 52,5 N-SR "Rotterdam" after 180 days;
Storage: 20 °C in $\text{Ca}(\text{OH})_2$ -solution (3 left-hand side specimens) and in Na_2SO_4 -solution (3 right-hand side specimens)



Figure A2: Specimens with CEM III/A 52,5 N-SR "Rotterdam" after 180 days;
Storage: 5 °C in $\text{Ca}(\text{OH})_2$ -solution (3 left-hand side specimens) and in Na_2SO_4 -solution (3 right-hand side specimens)

Blast furnace cement CEM III/A 52,5 N-SR "Rotterdam"	Annex A4 Page 1 of 2
Results of the assessment "sulfate resistance (flat prism method) – S_{FPM} " Visual examination of the flat prisms with blast furnace cement CEM III/A 52,5 N-SR "Rotterdam"	



Figure A3: Specimens with CEM III/B 42,5 N-LH/SR after 180 days;
Storage: in Na₂SO₄-solution at 5 °C (3 left-hand side specimens) and at 20 °C (3 right-hand side specimens)



Figure A4: Specimens with CEM I 42,5 R-SR3 after 180 days;
Storage: in Na₂SO₄-solution at 5 °C (3 left-hand side specimens) and at 20 °C (3 right-hand side specimens)

Blast furnace cement CEM III/A 52,5 N-SR "Rotterdam"

Results of the assessment "sulfate resistance (flat prism method) – S_{FPM}"
Visual examination of the flat prisms with CEM III/B 42,5 N-LH/SR and with
CEM I 42,5 -SR3

Annex A4
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