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for construction products



European Technical Assessment

ETA-17/0826
of 21 July 2026

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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/LA "Duisburg"
/ CEM III/A 52,5 N-SR/LA "Erwitte"

Product family
to which the construction product belongs

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

Manufacturer

Spenner GmbH & Co. KG
Bahnhofstraße 20
59597 Erwitte
DEUTSCHLAND

Manufacturing plant

Spenner GmbH & Co. KG
Werk Duisburg
Am Röhrenwerk 52
47259 Duisburg
DEUTSCHLAND
Spenner GmbH & Co. KG
Werk Erwitte
Bahnhofstraße 20
59597 Erwitte
DEUTSCHLAND

This European Technical Assessment
contains

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

This European Technical Assessment is
issued in accordance with Article 95(4) of
Regulation (EU) 2024/3110, on the basis of

EAD 150009-01-0301

This version replaces

ETA-17/0826 issued on 22 November 2017

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Specific Part

1 Technical description of the product

The blast furnace cement CEM III/A 52,5 N-SR/LA "Duisburg" / CEM III/A 52,5 N-SR/LA "Erwitte" 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/LA "Duisburg" / CEM III/A 52,5 N-SR/LA "Erwitte" has a high resistance against sulfate attack on concrete (SR) and a low effective alkali content (LA).

The assessment for the verification of the essential characteristic "sulfate resistance" (SR) and "low effective alkali content" (LA) was done on a blast furnace cement CEM III/A with a blast furnace slag¹ content of 45 % by mass and a specific surface area (Blaine) of the cement¹ of 5200 cm²/kg (C1) respectively 5300 cm²/kg (C2). The blast furnace slag has a glass content of at least 90 % and a (CaO + MgO)/SiO₂-ratio of at least 1,2.

The low effective alkali content (LA) can be verified by the Na₂O-equivalent (Na₂Oeq) and the blast furnace slag content of the blast furnace cement CEM III/A:

- Blast furnace slag content between 45 to 49 % by mass and Na₂Oeq ≤ 0,95 % by mass or
- Blast furnace slag content of ≥ 50 % by mass and Na₂Oeq ≤ 1,10 % by mass

The blast furnace cement CEM III/A 52,5 N-SR/LA "Duisburg" / CEM III/A 52,5 N-SR/LA "Erwitte" is manufactured from a pre-cement², a by-pass dust up to 0,5 % by mass and a blast furnace slag¹ under addition of gypsum or anhydrite or any mixture of them to control setting by separately grinding of the raw materials and subsequent mixing with a specific surface area (Blaine) of at least 5300 cm²/kg with following cement composition:

Portland cement clinker:	35 to 55 % by mass
Blast furnace slag ¹ :	45 to 65 % by mass

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/LA "Duisburg" / CEM III/A 52,5 N-SR/LA "Erwitte" is intended to be used for preparation of concrete, mortar, grouts and other mixes for construction and for the manufacturing of construction products.

In particular, the blast furnace cement CEM III/A 52,5 N-SR/LA "Duisburg" / CEM III/A 52,5 N-SR/LA "Erwitte" is characterized by an evidently high resistance against sulfate attack on concrete.

The blast furnace cement CEM III/A 52,5 N-SR/LA "Duisburg" / CEM III/A 52,5 N-SR/LA "Erwitte" can be used to avoid a damaging alkali-silica reaction in concrete.

The verification and assessment methods on which the European Technical Assessment is based lead to the assumption of a working life of concrete incorporating the blast furnace cement CEM III/A 52,5 N-SR/LA "Duisburg" / CEM III/A 52,5 N-SR/LA "Erwitte" 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.

¹ The assessment was done on two blast furnace cement CEM III/A 52,5 N-SR/LA (CEM III/A 52,5 N (C1) and CEM III/A 52,5 N (C2)). The blast furnace cement C1 was manufactured with blast furnace slag 1 (S1) and blast furnace cement C2 with blast furnace slag 2 (S2). Both test cements met the requirements and showed a high resistance against sulfate attack. Therefore, it is possible to manufacture the blast furnace cement CEM III/A 52,5 N-SR/LA "Duisburg" / CEM III/A 52,5 N-SR/LA "Erwitte" with a mixed blast furnace slag composition of blast furnace slags (S1) and (S2).

² The pre-cement is a Portland cement CEM I 52,5 R that does not contain any minor additional constituents.

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 area of the cement (Blaine)	$\rho_{C1} \geq 5200 \text{ cm}^2/\text{kg}$ $\rho_{C2} \geq 5300 \text{ cm}^2/\text{kg}$
Early (compressive) strength (2 days)	$R_{c,2d} \geq 20,0 \text{ N/mm}^2$
Standard (compressive) strength (28 days)	$R_{c,28d} \geq 52,5 \text{ N/mm}^2$
Initial setting time	C1: IST = 190 min C2: IST = 180 min
Soundness	C1: S = 0 mm C2: S = 1 mm
Loss on ignition	C1: LOI = 0,59 % by mass C2: LOI = 0,46 % by mass
Insoluble residue	C1: IR = 0,12 % by mass C2: IR = 0,28 % by mass
Sulfate content (as SO ₃)	C1: SO ₃ = 3,51 % by mass C2: SO ₃ = 3,34 % by mass
Chloride content	C1: Cl = 0,03 % by mass C2: Cl = 0,05 % by mass
Sulfate resistance (SR)	see Annex A (A1 to A4)
Alkali content (as Na ₂ O _{eq}) (LA)	C1: Na ₂ O _{eq} = 0,64 % by mass C2: Na ₂ O _{eq} = 0,55 % by mass
Heat of hydration (LH)	No performance assessed.
S1: Blast furnace slag 1 S2: Blast furnace slag 2	C1: Blast furnace cement with blast furnace slag S1 C2: Blast furnace cement with blast furnace slag S2

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/EC³, amended by the Commission Decision 2010/683/EU⁴.

The system to be applied is: 1+

³ Official Journal of the European Communities L 229/9 of 20 August 1997

⁴ Official Journal of the European Communities L 293 of 11 November 2010

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.
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Issued in Berlin on 21 July 2026 by Deutsches Institut für Bautechnik

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Head of Section

beglaubigt:
Wagner

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 – Blast furnace cement 1 (C1) with blast furnace slag 1 (S1)

	Expansion of length [mm/m] after				
	14 days	28 days	56 days	90 days	180 days
CEM III/A 52,5 N-SR/LA (C1 with blast furnace slag 1 (S1)) – storage at 20 °C					
Na ₂ SO ₄ solution	0,07	0,16	0,23	0,29	0,55
Ca(OH) ₂ solution	0,01	0,03	0,05	0,06	0,12
ΔL	0,06	0,13	0,18	0,23	0,43
CEM III/A 52,5 N-SR/LA (C1 with blast furnace slag 1 (S1)) – storage at 5 °C					
Na ₂ SO ₄ solution	-0,07	-0,08	0,08	0,31	-
Ca(OH) ₂ solution	-0,16	-0,19	-0,04	-0,05	-
ΔL	0,09	0,11	0,12	0,36	-
CEM III/B 42,5 N-LH/SR – storage at 20 °C					
Na ₂ SO ₄ solution	0,08	0,15	0,17	0,23	0,26
Ca(OH) ₂ solution	0,07	0,05	0,10	0,16	0,11
ΔL	0,01	0,10	0,07	0,07	0,15
CEM III/B 42,5 N-LH/SR – storage at 5 °C					
Na ₂ SO ₄ solution	0,00	0,08	0,09	0,24	-
Ca(OH) ₂ solution	-0,11	-0,04	-0,04	0,05	-
ΔL	0,11	0,12	0,13	0,19	-
CEM I 42,5 R-SR3 – storage at 20 °C					
Na ₂ SO ₄ solution	0,14	0,17	0,26	0,38	0,65
Ca(OH) ₂ solution	0,09	0,09	0,12	0,16	0,09
ΔL	0,05	0,08	0,14	0,22	0,56
CEM I 42,5 R-SR3 – storage at 5 °C					
Na ₂ SO ₄ solution	-0,09	0,02	0,08	0,43	-
Ca(OH) ₂ solution	-0,13	-0,11	-0,06	-0,02	-
ΔL	0,04	0,13	0,14	0,45	-

Blast furnace cement CEM III/A 52,5 N-SR/LA "Duisburg" / CEM III/A 52,5 N-SR/LA "Erwitte"

Results of the assessment "sulfate resistance (Flat prism method) – S_{FPM} "
Expansion of length – Blast furnace cement 1 (C1) with blast furnace slag 1 (S1)

Annex A1
Page 1 of 2

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: Expansion of length of mortar flat prisms – Blast furnace cement 2 (C2) with blast furnace slag 2 (S2)

	Expansion of length [mm/m] after				
	14 days	28 days	56 days	90 days	180 days
CEM III/A 52,5 N-SR/LA (C2 with blast furnace slag 2 (S2)) – storage at 20 °C					
Na ₂ SO ₄ solution	0,06	0,13	0,12	0,24	0,31
Ca(OH) ₂ solution	0,03	0,10	0,00	0,07	0,01
ΔL	0,03	0,03	0,12	0,17	0,30
CEM III/A 52,5 N-SR/LA (C2 with blast furnace slag 2 (S2)) – storage at 5 °C					
Na ₂ SO ₄ solution	-0,10	-0,04	0,16	0,40	-
Ca(OH) ₂ solution	-0,13	-0,14	-0,15	-0,09	-
ΔL	0,03	0,10	0,31	0,49	-
CEM III/B 42,5 N-LH/SR – storage at 20 °C					
Na ₂ SO ₄ solution	0,02	0,10	0,05	0,13	0,14
Ca(OH) ₂ solution	0,01	0,08	0,03	0,08	0,04
ΔL	0,01	0,02	0,02	0,05	0,10
CEM III/B 42,5 N-LH/SR – storage at 5 °C					
Na ₂ SO ₄ solution	-0,13	-0,11	-0,11	-0,11	-
Ca(OH) ₂ solution	-0,13	-0,12	-0,16	-0,16	-
ΔL	0,00	0,01	0,05	0,05	-
CEM I 42,5 R-SR3 – storage at 20 °C					
Na ₂ SO ₄ solution	0,06	0,14	0,20	0,42	0,93
Ca(OH) ₂ solution	0,02	0,02	-0,03	0,09	-0,09
ΔL	0,04	0,12	0,23	0,33	1,02
CEM I 42,5 R-SR3 – storage at 5 °C					
Na ₂ SO ₄ solution	-0,04	-0,05	-0,01	0,10	-
Ca(OH) ₂ solution	-0,07	-0,12	-0,11	-0,06	-
ΔL	0,03	0,07	0,10	0,16	-

Blast furnace cement CEM III/A 52,5 N-SR/LA "Duisburg" / CEM III/A 52,5 N-SR/LA "Erwitte"

Results of the assessment "sulfate resistance (Flat prism method) – S_{FPM} "
Expansion of length – Blast furnace cement 2 (C2) with blast furnace slag 2 (S2)

Annex A1
Page 2 of 2

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: Dynamic modulus of elasticity of mortar flat prisms - Blast furnace cement 1 (C1) with blast furnace slag 1 (S1)

	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/LA (C1 with blast furnace slag 1 (S1)) – storage at 20 °C						
Ca(OH) ₂ solution	28,5	30,8	33,3	35,0	36,3	38,4
Na ₂ SO ₄ solution	29,4	34,4	35,9	36,2	36,7	37,2
CEM III/A 52,5 N-SR/LA (C1 with blast furnace slag 1 (S1)) – storage at 5 °C						
Ca(OH) ₂ solution	29,3	30,3	30,9	31,6	32,4	-
Na ₂ SO ₄ solution	29,5	33,3	34,8	35,1	34,7	-
CEM III/B 42,5 N-LH/SR – storage at 20 °C						
Ca(OH) ₂ solution	28,7	30,9	32,8	34,8	36,5	38,1
Na ₂ SO ₄ solution	28,5	30,9	31,6	32,6	32,6	32,1
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	30,9	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	38,2	39,1	39,6	39,8
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/LA "Duisburg" / CEM III/A 52,5 N-SR/LA "Erwitte"

Results of the assessment "sulfate resistance (Flat prism method) – S_{FPM} "
Dynamic modulus of elasticity - Blast furnace cement 1 (C1) with blast furnace slag 1 (S1)

Annex A2
Page 1 of 2

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 4: Dynamic modulus of elasticity of mortar flat prisms - Blast furnace cement 2 (C2) with blast furnace slag 2 (S2)

	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/LA (C2 with blast furnace slag 2 (S2)) – storage at 20 °C						
Ca(OH) ₂ solution	30,5	32,7	34,9	37,5	39,6	41,0
Na ₂ SO ₄ solution	31,1	37,1	38,2	38,5	37,7	37,6
CEM III/A 52,5 N-SR/LA (C2 with blast furnace slag 2 (S2)) – storage at 5 °C						
Ca(OH) ₂ solution	29,4	30,6	31,0	32,0	32,7	-
Na ₂ SO ₄ solution	29,1	33,0	34,1	34,7	33,8	-
CEM III/B 42,5 N-LH/SR – storage at 20 °C						
Ca(OH) ₂ solution	33,7	36,6	37,8	40,0	39,3	39,9
Na ₂ SO ₄ solution	33,7	37,3	37,6	37,0	35,7	35,3
CEM III/B 42,5 N-LH/SR – storage at 5 °C						
Ca(OH) ₂ solution	33,0	33,8	34,1	34,6	35,3	-
Na ₂ SO ₄ solution	33,0	34,3	35,1	35,4	35,2	-
CEM I 42,5 R-SR3 – storage at 20 °C						
Ca(OH) ₂ solution	36,7	37,7	38,0	38,2	38,6	37,8
Na ₂ SO ₄ solution	36,3	38,3	38,7	39,2	40,2	40,6
CEM I 42,5 R-SR3 – storage at 5 °C						
Ca(OH) ₂ solution	37,0	37,2	37,9	37,2	37,2	-
Na ₂ SO ₄ solution	36,5	37,7	37,8	38,0	38,3	-

Blast furnace cement CEM III/A 52,5 N-SR/LA "Duisburg" / CEM III/A 52,5 N-SR/LA "Erwitte"

Results of the assessment "sulfate resistance (Flat prism method) – S_{FPM} "
Dynamic modulus of elasticity - Blast furnace cement 2 (C2) with blast furnace slag 2 (S2)

Annex A2
Page 2 of 2

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 5: Mass of mortar flat prisms - Blast furnace cement 1 (C1) with blast furnace slag 1 (S1)

	Mass in g after					
	0 days	14 days	28 days	56 days	90 days	180 days
CEM III/A 52,5 N-SR/LA (C1 with blast furnace slag 1 (S1)) – storage at 20 °C						
Ca(OH) ₂ solution	144,0	114,4	145,0	145,3	144,8	145,2
Na ₂ SO ₄ solution	144,3	144,6	145,0	145,4	145,5	146,8
CEM III/A 52,5 N-SR/LA (C1 with blast furnace slag 1 (S1)) – storage at 5 °C						
Ca(OH) ₂ solution	146,1	146,6	146,8	146,6	146,8	-
Na ₂ SO ₄ solution	145,9	146,3	146,5	146,6	147,0	-
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	145,0	145,4	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/LA "Duisburg" / CEM III/A 52,5 N-SR/LA "Erwitte"

Results of the assessment "sulfate resistance (Flat prism method) – S_{FPM} "
Mass of the mortar flat prisms – Blast furnace cement 1 (C1) with blast furnace slag 1 (S1)

Annex A3
Page 1 of 2

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 6: Mass of mortar flat prisms - Blast furnace cement 2 (C2) with blast furnace slag 2 (S2)

	Mass in g after					
	0 days	14 days	28 days	56 days	90 days	180 days
CEM III/A 52,5 N-SR/LA (C2 with blast furnace slag 2 (S2)) – storage at 20 °C						
Ca(OH) ₂ solution	174,1	147,3	147,5	147,6	147,6	148,0
Na ₂ SO ₄ solution	147,4	147,8	148,2	149,1	149,7	150,6
CEM III/A 52,5 N-SR/LA (C2 with blast furnace slag 2 (S2)) – storage at 5 °C						
Ca(OH) ₂ solution	143,9	144,2	144,5	144,8	144,8	-
Na ₂ SO ₄ solution	143,4	143,8	144,0	144,5	145,1	-
CEM III/B 42,5 N-LH/SR – storage at 20 °C						
Ca(OH) ₂ solution	147,7	147,5	147,4	147,4	147,6	147,8
Na ₂ SO ₄ solution	147,8	147,6	147,7	147,8	148,5	149,1
CEM III/B 42,5 N-LH/SR – storage at 5 °C						
Ca(OH) ₂ solution	145,5	145,4	145,4	145,5	145,4	-
Na ₂ SO ₄ solution	144,9	145,1	145,1	145,3	145,3	-
CEM I 42,5 R-SR3 – storage at 5 °C						
Ca(OH) ₂ solution	147,5	147,6	147,5	147,7	147,7	147,6
Na ₂ SO ₄ solution	147,2	147,2	147,2	147,5	147,7	148,2
CEM I 42,5 R-SR3 – storage at 5 °C						
Ca(OH) ₂ solution	146,4	146,4	146,7	146,9	147,5	-
Na ₂ SO ₄ solution	147,0	146,9	147,1	147,5	148,1	-

Blast furnace cement CEM III/A 52,5 N-SR/LA "Duisburg" / CEM III/A 52,5 N-SR/LA "Erwitte"

Results of the assessment "sulfate resistance (Flat prism method) – S_{FPM} "
Mass of the mortar flat prisms – Blast furnace cement 2 (C2) with blast furnace slag 2 (S2)

Annex A3
Page 2 of 2

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 damage, cracks or flaking based on the formation of thaumasite or ettringite, see figures 1 to 8.



Figure 1: Specimens with CEM III/A 52,5 N-SR/LA (C1 with blast furnace slag 1 (S1)) after 180 days; storage: 20 °C in Na_2SO_4 solution



Figure 2: Specimens with CEM III/A 52,5 N-SR/LA (C1 with blast furnace slag 1 (S1)) after 180 days; storage: 5 °C in Na_2SO_4 solution

Blast furnace cement CEM III/A 52,5 N-SR/LA "Duisburg" / CEM III/A 52,5 N-SR/LA "Erwitte"	Annex A4 Page 1 of 4
Results of the assessment "sulfate resistance (flat prism method) – S_{FPM} " Visual examination of the flat prisms – Blast furnace cement 1 (C1) with blast furnace slag 1 (S1)	



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

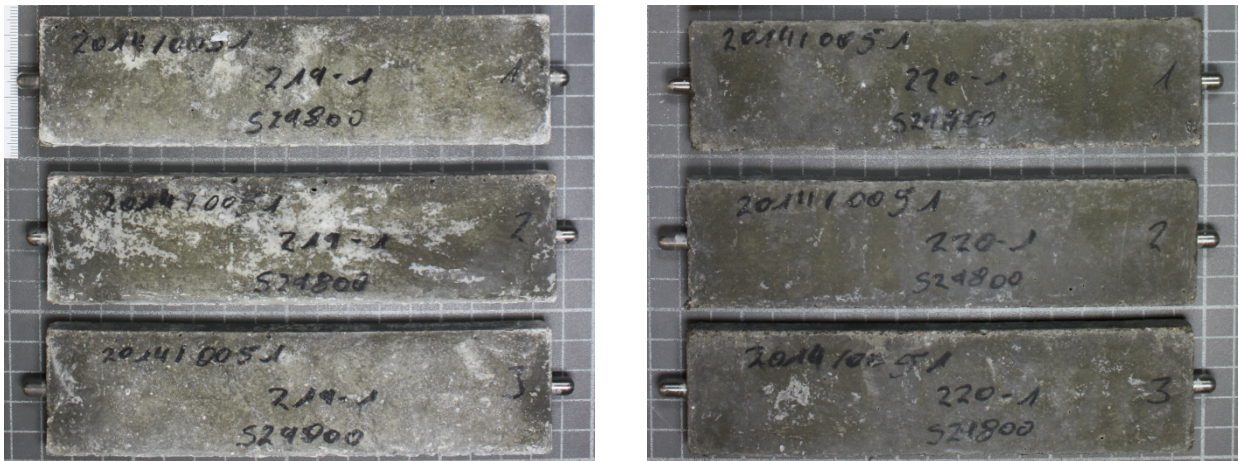


Figure 4: Specimens with CEM I 42,5 R-SR3 after 180 days;
storage: in Na₂SO₄ solution at 20 °C (on the left) and at 5 °C (on the right)

Blast furnace cement CEM III/A 52,5 N-SR/LA "Duisburg" / CEM III/A 52,5 N-SR/LA "Erwitte"	Annex A4 Page 2 of 4
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 R-SR3	



Figure 5: Specimens with CEM III/A 52,5 N-SR/LA (C2 with blast furnace slag 2 (S2)) after 180 days; storage: 20 °C in Na₂SO₄ solution



Figure 6: Specimens with CEM III/A 52,5 N-SR/LA (C2 with blast furnace slag 2 (S2)) after 180 days; storage: 5 °C in Na₂SO₄ solution

Blast furnace cement CEM III/A 52,5 N-SR/LA "Duisburg" / CEM III/A 52,5 N-SR/LA "Erwitte"	Annex A4 Page 3 of 4
Results of the assessment "sulfate resistance (flat prism method) – S _{FPM} " Visual examination of the flat prisms – Blast furnace cement 2 (C2) with blast furnace slag 2 (S2)	



Figure 7: Specimens with CEM III/B 42,5 N-LH/SR after 180 days;
storage: in Na₂SO₄ solution at 20 °C (on the left) and at 5 °C (on the right)



Figure 8: Specimens with CEM I 42,5 R-SR3 after 180 days;
storage: in Na₂SO₄ solution at 20 °C (on the left) and at 5 °C (on the right)

Blast furnace cement CEM III/A 52,5 N-SR/LA "Duisburg" / CEM III/A 52,5 N-SR/LA "Erwitte"	Annex A4 Page 4 of 4
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 R-SR3	