



European Technical Approval ETA-10/0325

English translation prepared by DIBt - Original version in German language

Handelsbezeichnung
Trade name

"COLORaktiv 2000 (SR)"

Zulassungsinhaber
Holder of approval

REMEI Blomberg GmbH & Co. KG
Industriestraße 19
32825 Blomberg
DEUTSCHLAND

Zulassungsgegenstand
und Verwendungszweck
*Generic type and use
of construction product*

Betonzusatzmittel als Sedimentationsreduzierer
Sedimentation reducing concrete admixture

Geltungsdauer:
Validity: vom
from
bis
to

1 June 2013
1 June 2018

Herstellwerk
Manufacturing plant

REMEI Blomberg GmbH & Co. KG
Industriestraße 19
32825 Blomberg
DEUTSCHLAND

Diese Zulassung umfasst
This Approval contains

8 Seiten
8 pages

Diese Zulassung ersetzt
This Approval replaces

ETA-10/0325 mit Geltungsdauer vom 08.10.2010 bis 08.10.2015
ETA-10/0325 with validity from 08.10.2010 to 08.10.2015

I LEGAL BASES AND GENERAL CONDITIONS

- 1 This European technical approval is issued by Deutsches Institut für Bautechnik in accordance with:
 - Council Directive 89/106/EEC of 21 December 1988 on the approximation of laws, regulations and administrative provisions of Member States relating to construction products¹, modified by Council Directive 93/68/EEC² and Regulation (EC) N° 1882/2003 of the European Parliament and of the Council³;
 - *Gesetz über das In-Verkehr-Bringen von und den freien Warenverkehr mit Bauprodukten zur Umsetzung der Richtlinie 89/106/EWG des Rates vom 21. Dezember 1988 zur Angleichung der Rechts- und Verwaltungsvorschriften der Mitgliedstaaten über Bauprodukte und anderer Rechtsakte der Europäischen Gemeinschaften (Bauproduktengesetz - BauPG) vom 28. April 1998⁴, as amended by Article 2 of the law of 8 November 2011⁵;*
 - Common Procedural Rules for Requesting, Preparing and the Granting of European technical approvals set out in the Annex to Commission Decision 94/23/EC⁶.
- 2 Deutsches Institut für Bautechnik is authorized to check whether the provisions of this European technical approval are met. Checking may take place in the manufacturing plant. Nevertheless, the responsibility for the conformity of the products to the European technical approval and for their fitness for the intended use remains with the holder of the European technical approval.
- 3 This European technical approval is not to be transferred to manufacturers or agents of manufacturers other than those indicated on page 1, or manufacturing plants other than those indicated on page 1 of this European technical approval.
- 4 This European technical approval may be withdrawn by Deutsches Institut für Bautechnik, in particular pursuant to information by the Commission according to Article 5(1) of Council Directive 89/106/EEC.
- 5 Reproduction of this European technical approval including transmission by electronic means shall be in full. However, partial reproduction can be made with the written consent of Deutsches Institut für Bautechnik. In this case partial reproduction has to be designated as such. Texts and drawings of advertising brochures shall not contradict or misuse the European technical approval.
- 6 The European technical approval is issued by the approval body in its official language. This version corresponds fully to the version circulated within EOTA. Translations into other languages have to be designated as such.

¹ Official Journal of the European Communities L 40, 11 February 1989, p. 12
² Official Journal of the European Communities L 220, 30 August 1993, p. 1
³ Official Journal of the European Union L 284, 31 October 2003, p. 25
⁴ *Bundesgesetzblatt Teil I 1998*, p. 812
⁵ *Bundesgesetzblatt Teil I 2011*, p. 2178
⁶ Official Journal of the European Communities L 17, 20 January 1994, p. 34

II SPECIFIC CONDITIONS OF THE EUROPEAN TECHNICAL APPROVAL

1 Definition of the product and intended use

1.1 Definition of the construction product

The sedimentation reducing concrete admixture "COLORaktiv 2000 (SR)" is a homogeneous chemical admixture for concrete. Unlike water retaining admixtures according to EN 934-2⁷, which reduce the loss of water by a reduction of bleeding, the sedimentation reducing concrete admixture "COLORaktiv 2000 (SR)" reduces the sedimentation of components in fresh concrete.

1.2 Intended use

The product is an admixture for plain, reinforced and prestressed concrete which is used in site mixed, ready mixed and precast concrete.

The provisions made in this European technical approval are based on an assumed working life of concrete incorporating the sedimentation reducing concrete admixture "COLORaktiv 2000 (SR)" for the intended use of 50 years, provided that the conditions laid down in sections 4.2 and 5 for packaging, transport, storage and application are met. 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.

2 Characteristics of product and methods of verification

2.1 Homogeneity

The homogeneity shall be determined visually⁸. The sedimentation reducing concrete admixture "COLORaktiv 2000 (SR)" shall be homogeneous when used. Segregation shall not exceed the limit stated by the manufacturer.

2.2 Colour

The colour shall be determined visually. The sedimentation reducing concrete admixture "COLORaktiv 2000 (SR)" shall be uniform and similar to the description declared by the manufacturer.

2.3 Effective component

The effective component shall be determined by infrared spectra in accordance with EN 480-6⁹. The infrared spectrum of the sedimentation reducing concrete admixture "COLORaktiv 2000 (SR)" shall show no significant change with respect to the effective component when compared to the reference spectrum provided by the manufacturer.

⁷ EN 934-2 Admixtures for concrete, mortar and grout - Part 2: Concrete admixtures - Definitions, requirements, conformity, marking and labelling

⁸ A sample shall be put in a 1-litre-glas-cylinder and covered for three months. The segregation of the admixture is observed daily during the first 5 days, twice a week during the next 3 weeks, and once a week during the rest of the time (dust-like sedimentation at the bottom of the cylinder may be disregarded).

⁹ EN 480-6 Admixtures for concrete, mortar and grout - Test methods - Part 6: Infrared analysis

2.4 Absolute density

The absolute density shall be determined in accordance with ISO 758¹⁰. The absolute density of the sedimentation reducing concrete admixture "COLORaktiv 2000 (SR)" shall comply with the requirement $1,04 \pm 0,02 \text{ kg/dm}^3$.

2.5 Conventional dry material content

The conventional dry material content shall be determined in accordance with EN 480-8¹¹. The conventional dry material content of the sedimentation reducing concrete admixture "COLORaktiv 2000 (SR)" shall comply with the requirement $13,5 \leq X \leq 16,5$, where X is the test result in % by mass.

2.6 pH value

The pH value shall be determined in accordance with ISO 4316¹². The pH value of the sedimentation reducing concrete admixture "COLORaktiv 2000 (SR)" shall lie in between the manufacturer's stated range of 10,5 to 11,5.

2.7 Total chlorine

The total chlorine content shall be determined in accordance with EN ISO 1158¹³. The total chlorine content of the sedimentation reducing concrete admixture "COLORaktiv 2000 (SR)" shall not be greater than 0,10 % by mass¹⁴.

2.8 Water soluble chloride

The water soluble chloride content shall be determined in accordance with EN 480-10¹⁵. The water soluble chloride content of the sedimentation reducing concrete admixture "COLORaktiv 2000 (SR)" shall not be greater than 0,10 % by mass.

2.9 Alkali content (Na₂O equivalent)

No performance determined.

2.10 Corrosion behaviour

The sedimentation reducing concrete admixture "COLORaktiv 2000 (SR)" contains only substances on the approved list A.1 according to EN 934-1¹⁶, Annex A.

2.11 Silicon dioxide (SiO₂) content

The sedimentation reducing concrete admixture "COLORaktiv 2000 (SR)" shall contain no silicon dioxide.

10	ISO 758:1976	Liquid chemical products for industrial use; Determination of density at 20 degrees C
11	EN 480-8	Admixtures for concrete, mortar and grout - Test methods - Part 8: Determination of the conventional dry material content
12	ISO 4316	Surface active agents; Determination of pH of aqueous solutions; Potentiometric method
13	EN ISO 1158	Plastics - Vinyl chloride homopolymers and copolymers - Determination of chlorine content (ISO 1158:1998)
14		If there is no significant difference between the total chlorine and the water soluble chloride content, only the water soluble chloride content should be determined in subsequent tests.
15	EN 480-10	Admixtures for concrete, mortar and grout - Test methods - Part 10: Determination of water soluble chloride content
16	EN 934-1	Admixtures for concrete, mortar and grout - Part 1: Common requirements

2.12 Setting time

The initial and final setting time with and without sedimentation reducing concrete admixture shall be determined in accordance with EN 480-2¹⁷. For at least 4 of the 5 cements the initial setting time of the sedimentation reducing concrete admixture "COLORaktiv 2000 (SR)" shall be at least 60 min, the final setting time shall not be greater than 16 h.

2.13 Air content in fresh concrete

No performance determined.

2.14 Compressive strength

No performance determined.

2.15 Sedimentation of cement paste

The sedimentation shall be determined¹⁸. The sedimentation of the test mixes shall be considerably less than the sedimentation of the control mixes.

3 Evaluation and attestation of conformity and CE marking

3.1 System of attestation of conformity

According to the communication of the European Commission¹⁹ system 2+ of the attestation of conformity applies.

This system of attestation of conformity is defined as follows:

System 2+: Declaration of conformity of the product by the manufacturer on the basis of:

(a) Tasks for the manufacturer:

- (1) initial type-testing of the product;
- (2) factory production control;
- (3) testing of samples taken at the factory in accordance with a prescribed test plan.

(b) Tasks for the approved body:

- (4) certification of factory production control on the basis of:
 - initial inspection of factory and of factory production control;
 - continuous surveillance, assessment and approval of factory production control.

Note: Approved bodies are also referred to as "notified bodies".

¹⁷ EN 480-2 Admixtures for concrete, mortar and grout - Test methods - Part 2: Determination of setting time

Five cements of different origin shall be used (CEM I 32,5 R, CEM I 42,5 R with $C_3A \leq 3,0\%$ and $Al_2O_3 \leq 5,0\%$, CEM I 52,5 R, CEM II/A-LL 32,5 R, CEM III/A 42,5 N). The initial and final setting time with and without concrete admixture shall be determined for each cement in accordance with EN 480-2 and with the recommended maximum dosage. The amount of mixing water is decreased by the water content of the admixture. If the initial setting time less than 60 min, the cement mortars with concrete admixture are tested again with the water demand of the relating cement mortar without concrete admixture.

¹⁸ A Portland cement CEM I 32,5 R in accordance with EN 197-1 and with a fineness of $< 3000 \text{ cm}^2/\text{g}$ according to EN 196-6 shall be used for testing. Two cement paste mixtures are prepared: a reference control mix without admixture, and a test mix which contains the admixture with the recommended maximum dosage. Each of these mixtures is prepared with a water/cement ratio of 0,50 and 0,60. The amount of mixing water is decreased by the water content of the admixture. Approximately 0,9 l cement paste is filled in a 1-litre-cylinder and segregation of water is observed. The segregation is recorded 0,5 h, 2 h and 5 h after filling.

¹⁹ Letter of the European Commission of 15/12/2008 to EOTA.

3.2 Responsibilities

3.2.1 Tasks for the manufacturer

3.2.1.1 Factory production control

The manufacturer shall exercise permanent internal control of production. All the elements, requirements and provisions adopted by the manufacturer shall be documented in a systematic manner in the form of written policies and procedures, including records of results performed. This production control system shall insure that the product is in conformity with this European technical approval.

The manufacturer may only use initial materials stated in the technical documentation of this European technical approval.

The factory production control shall be in accordance with the "control plan of 30 September 2010 relating to the European technical approval ETA-10/0325 issued on 8 October 2010" which is part of the technical documentation of this European technical approval. The control plan is laid down in the context of the factory production control system operated by the manufacturer and deposited with Deutsches Institut für Bautechnik²⁰.

The results of factory production control shall be recorded and evaluated in accordance with the provisions of the control plan.

3.2.1.2 Other tasks for the manufacturer

The manufacturer shall, on the basis of a contract, involve a body which is approved for the tasks referred to in section 3.1 in the field of sedimentation reducing concrete admixture in order to undertake the actions laid down in section 3.2.2. For this purpose, the control plan referred to in sections 3.2.1.1 and 3.2.2 shall be handed over by the manufacturer to the approved body involved.

The manufacturer shall make a declaration of conformity, stating that the construction product is in conformity with the provisions of this European technical approval.

3.2.2 Tasks for the approved bodies

The approved body shall perform the

- initial inspection of factory and of factory production control,
- continuous surveillance, assessment and approval of factory production control

in accordance with the provisions laid down in the control plan.

The approved body shall retain the essential points of its actions referred to above and state the results obtained and conclusions drawn in a written report.

The approved certification body involved by the manufacturer shall issue an EC certificate of conformity of the factory production control stating the conformity with the provisions of this European technical approval.

In cases where the provisions of the European technical approval and its control plan are no longer fulfilled the certification body shall withdraw the certificate of conformity and inform Deutsches Institut für Bautechnik without delay.

²⁰ The "control plan" is a confidential part of the European technical approval and only handed over to the approved body involved in the procedure of attestation of conformity. See section 3.2.2.

3.3 CE marking

The CE marking shall be affixed on the packaging and the accompanying commercial documents respectively. The letters "CE" shall be followed by the identification number of the approved certification body, where relevant, and be accompanied by the following additional information:

- the name and address of the producer (legal entity responsible for the manufacture),
- the last two digits of the year in which the CE marking was affixed,
- the number of the EC certificate for the factory production control,
- the number of the European technical approval,
- Recommended maximum dosage: 4 ml/kg cement,
- Maximum chloride ion content: 0,10 % by mass,
- Maximum alkali content: NPD,
- Increase of air content in fresh concrete: NPD,
- Compressive strength: NPD,
- Corrosion behaviour: Contains only substances from EN 934-1 Annex A.1.

4 Assumptions under which the fitness of the product for the intended use was favourably assessed

4.1 Manufacturing

The sedimentation reducing concrete admixture "COLORaktiv 2000 (SR)" is manufactured from specified constituents in the production plant in Blomberg.

The European technical approval is issued for the product on the basis of agreed data/information, deposited with Deutsches Institut für Bautechnik, which identifies the product that has been assessed and judged. Changes to the product or production process, which could result in this deposited data/information being incorrect, should be notified to Deutsches Institut für Bautechnik before the changes are introduced. Deutsches Institut für Bautechnik will decide whether or not such changes affect the approval and consequently the validity of the CE marking on the basis of the approval and if so whether further assessment or alterations to the approval shall be necessary.

4.2 Installation

The product is an admixture for plain, reinforced and prestressed concrete which is used in site mixed, ready mixed concrete and precast concrete.

The recommended maximum dosage of the product is 4 ml/kg cement.

The use of concrete admixtures may cause adverse effects on the properties of concrete, which may be determined. Furthermore the air content of concrete may be increased significantly by the concrete admixtures.

For each case of application initial tests shall be carried out with the intended concrete composition and the intended addition of the admixture to demonstrate that the concrete can be processed reliably with the intended consistency provided under the conditions of the site and that the required properties are achieved.

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5 Indications to the manufacturer for packaging, transport and storage

Materials shall be handled and stored with care according to EN 934-6²¹.

It is the responsibility of the manufacturer of the product to ensure that the information on these provisions is given to those who are concerned.

In the production plant the admixture shall be stored in silos or containers.

The admixture may be delivered in suitable transport containers, which shall be clean and free of other materials. During transportation the admixture shall be prevented from pollution.

Uwe Bender
Head of Department

beglaubigt:
Gözcü

²¹ EN 934-6

Admixtures for concrete, mortar and grout - Part 6: Sampling, conformity control and evaluation of conformity