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## European Technical Assessment

**ETA-20/0370**  
of 16.06.2020

**Technical Assessment Body issuing the European Technical Assessment:**

CPC Belgelendirme Muayene ve Deney Hizmetleri Ltd. Şti.

**Trade name of the construction product**

Cement with Coal Bottom Ash – (CEM II B-M(V-LL) 42,5N)

**Product family to which the construction product belongs**

Cement

**Manufacturer**

Limak Çimento San. ve Tic. A.Ş.

**Manufacturing plant(s)**

Dümbüllü Köyü Limak Sokak No: 1/21 Polateli/KİLİS

**This European Technical Assessment contains**

3 pages including 2 Annexes which form an integral part of this assessment

Annexes contain confidential information and are not included in the European Technical Assessment when that assessment is publicly disseminated

**This European Technical Assessment is issued in accordance with Regulation (EU) No 305/2011, on the basis of**

EAD 150043-00-0301 "Cement With Coal Bottom Ash"

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## 1. Technical description of the product

The construction product is a hydraulic binder which, when mixed with water, forms a paste which sets and hardens by means of hydration reactions and processes and which, after hardening, retains its strength. The product is a mixture of Coal Bottom Ash and Portland cement.

Coal Bottom Ash (CBA, gravel-like glassy substances in various dimensions, derived from burning of pulverised coal for electricity production –same process with fly as defined on hEN 450-1- , which has pozzolanic properties and consists of mainly  $\text{SiO}_2$   $\text{Al}_2\text{O}_3$  and  $\text{Fe}_2\text{O}_3$ . CBA obtained from bottom of boiler.

**Table 1. Cement with Coal Bottom Ash types and its compositions**

Main types	Composition (by mass %)				Minor constituents	
	Main constituents					
	Clinker (K)	Pozzolana (P;Q)	Coal Bottom Ash (CBA)	Limestone (L;LL)		
CCBA 42,5 N	88	-	6	6	-	

## 2. Specification of the intended use(s) in accordance with the applicable European Assessment Document (hereinafter EAD)

The cement with coal bottom ash is a cement for production of concrete, mortar, grouts and other mixes including in particular cast-in-situ and prefabricated structural concrete conforming to EN 206.

The assessment methods included or referred to in this ETA have been written based on the manufacturer's request to take into account a working life of the Cement with Coal Bottom Ash for the intended use of 50 years when installed in the works. These provisions are based upon the current state of the art and the available knowledge and experience.

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

**Table 2. Essential characteristics of the product and methods and criteria for assessing the performance of the product in relation to those essential characteristics**

No	Essential characteristic	Assessment method (EAD 150043-00-03.01)	Type of expression of product performance (level, class, description)	
			CCBA 42,5N	
Basic Works Requirement 1: Mechanical resistance and stability of product				
1	Standard strength (28 days)	Clause 2.2.1.1		52,4 MPa
2	Early strength	Clause 2.2.1.2		26,7 MPa
3	Initial setting time	Clause 2.2.1.3		200 min
4	Soundness	Clause 2.2.1.4		1 mm
5	Sulphate content	Clause 2.2.1.5		2,665 %
6	Chloride content	Clause 2.2.1.6		0,009 %
7	Cement composition	Clause 2.2.1.7	Clinker K	% 88
			Coal bottom ash CBA	
			Limestone L and/or LL	% 12
			Minor constituents	-
8	Pozzolanic activity	Clause 2.2.1.8		-
9	Density	Clause 2.2.1.9		3,00 g/cm <sup>3</sup>
10	Fineness (Blaine)	Clause 2.2.1.10		4500 cm <sup>2</sup> /g
11	Determination of carbonation resistance of concrete	Clause 2.2.1.11		NPA
12	Resistance to Chloride penetration	Clause 2.2.1.12		NPA
13	Freeze-thaw resistance without de-icing agent	Clause 2.2.1.13		NPA
Basic Works Requirement 3: Hygiene, Health & Environment				
14	Content and/or release of dangerous substances	Clause 2.2.1.14		NPA

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

For the products covered by this EAD the applicable European legal act is: Decision 97/555/EC amended by EC Decision 2010/683/EU.

The system is: 1+

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

Product(s)	Intended use(s)	Level(s) or class(es)	System(s)
Portland cement	Preparation of concrete, mortar, grout and other mixes for construction and for the manufacture of construction products	-	1 +

The factory production control shall be performed in accordance with the provisions of clauses 3.2 and 3.3 of EAD 150043-00-0301.

Issued in Ankara on 16.06.2020

By  
Uğur GEDİK

**Annexes**

- 1) S-Lab Report C2003201
- 2) Manufacturers Technical Document