Product Data Sheet

PDS-SECAR® 70-EN

2018-07

SECAR® 70

1 Description

SECAR® 70 is a hydraulic binder with an alumina content of approximately 70% and is designed to withstand temperatures in excess of 1,400ºC. SECAR® 70 contains calcium aluminate mineralogy that provides all refractory properties required for this range of cement.

When mixed with natural refractory aggregates, SECAR® 70 demonstrates superior performance of placing under vibration, controlled setting time and strength development. Its refractoriness and behaviour at high temperature make it reliable cement for all kinds of castables and fire industries.

SECAR® 70 is particularly well adapted for conventional castables for which it gives regular flow decay over time, high green strength as well as high fired properties.

SECAR® 70 will display flexibility in reformulation and demonstrates its efficiency when replacing other cement on a 1 for 1 basis.

2 Specification

SECAR® 70 is produced and controlled within a quality management system that is certified according to ISO 9001.

The specification limits are determined with an Acceptable Quality Level (AQL) of 2.5% as defined in the sampling standard ISO 3951.

The specification limits define the absolute limits of product conformity applicable for individual values.

The usual range represents typical values of production. This information is given for guidance only.

Chemical composition

Main constituents (%)

	Usual range	Specification limit
Al_2O_3	67.5 - 70.5	> 67
CaO	28.5 - 31.5	< 32
SiO_2	0.2 - 0.7	< 0.9
Fe_2O_3	0.1 - 0.4	< 0.5
TiO_2	< 0.4	
MgO	< 0.5	
$Na_2O + K_2O$	< 0.5	

Other constituents, (%)

	Usual range
SO_3	< 0.3

The chemical characteristics of SECAR® 70 have been determined according to EN 196-2: Method of testing cement – Part 2: Chemical analysis of cement

Workability

The workability of SECAR® 70 is determined by measuring the flow properties using the ASTM C230 flow table. The test is carried out using a standard siliceous sand mortar.

	Usual range	Specification limit
Flow after 30 min, %		> 50

Preparation of the sand mortar according to the standard EN 196-1 except: 1350g standard sand, 450g cement, 225g water, (W/C = 0,5). Tested at 20°C by 25 shocks in an ASTM cone mould, d1 (diameter of base) = 100 mm. % of flow = d2 (mm) - d1 (mm).

Mortar setting time

	Usual range	Specification limit
Initial set (min)	170 - 240	> 150
Final set (min)	190 - 260	< 300

Composition and preparation of the sand mortar according to the standard EN 196 -1 except, 1350g standard sand, 450g cement, 225g water. (W/C = 0,5).

Setting time measurements according to EN 196-3: Vicat apparatus but using a 1000 g test weight ; Temperature 20°C ; > 50% relative humidity.

SECAR® 70

Mechanical strength

Compressive strength (MPa)		
Age	Usual range	Specification limit
6 h	12 - 35	> 10
24 h	35 - 60	> 30

Composition and preparation of the sand mortar according to EN 196-1 except: 1350g standard sand, 450g cement, 225g water, (W/C = 0,5)
Test conditions according to EN 196-1 :
Test prisms 40 x 40 x 160 mm ; temperature 20°C ; prisms cured at > 90% relative humidity.

3 Storage and shelf life

For optimal performance, SECAR® 70 should be stored in its original packaging, in dry conditions and not in direct contact with the ground. When stored in these conditions, performance is guaranteed for a minimum of 6 months, while experience shows that properties can be maintained for more than one year.