

## LUMNITE® SG

### General information

LUMNITE SG is an engineered normal setting and rapid hardening Calcium Aluminate Cement (CAC) with high early strength and high final strength. LUMNITE SG has a brown-anthracitic color and is composed of calcium aluminates. Its optimized particle size distribution makes it most suitable for following building product applications:

- Flooring products
- Tile products
- Technical mortars

LUMNITE SG is tested according EN 14647 and has a shelf-life of approx. six (6) months when stored under dry conditions.

### Production

LUMNITE SG is produced by melting selected raw materials (bauxite and limestone) in special kilns. After cooling, the clinker is ground using ball mills.

### Technical data

The following information represents typical values for the quality control carried out in our plant.

#### Chemical composition (%)

SiO <sub>2</sub>	≤ 6
Al <sub>2</sub> O <sub>3</sub>	38–42
Fe <sub>2</sub> O <sub>3</sub>	13–17
CaO	36–40
MgO	< 1,5
SO <sub>3</sub>	< 0,4

#### Mineralogical composition

LUMNITE SG contains mainly monocalcium aluminate (CA). This mineral phase is responsible for the high early strength. When mixed with water LUMNITE SG forms calcium aluminate hydrates as its hydration products.

#### Mineral phases of LUMNITE SG

main mineral phase:	CA > 50%
minor mineral phases:	C <sub>4</sub> AF, C <sub>2</sub> AS, C <sub>12</sub> A <sub>7</sub>

#### Cement technical properties

residue on sieve at:	90 μm < 3%
fineness (Blaine) approx.:	3700–4300 cm <sup>2</sup> /g
bulk density approx.:	1.15 g/cm <sup>3</sup>
specific gravity:	3.2–3.3 g/cm <sup>3</sup>
refractoriness in cement approx.:	1270 °C

#### Setting time and water demand

The testing of the setting time is performed using the mortar in order to describe the behavior of the LUMNITE SG in mixtures with a workable consistency. A mixture containing CEN-standard sand and using a water/cement ratio of 0,4.

	Mortar
Initial set	1–4 h
Final set	maximum 120 min after initial set
Water demand	28 ± 2%

#### Development of strength

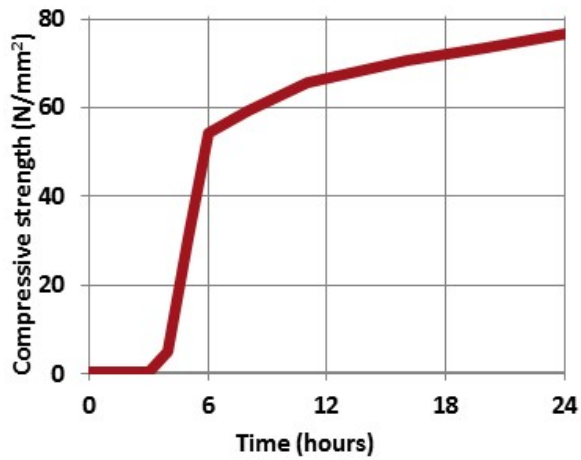
After setting, strength develops very rapidly. LUMNITE SG is a cement with very high early strength and high compressive strength. After one (1) day, the compressive strength is higher than that of high grade Portland cements CEM I 52.5 R after 28 days.

#### Development of strength (N/mm<sup>2</sup>)

Time	6 h	1 d
Compressive strength	>30	>60



The tests are conducted with mortar prisms 4 cm x 4 cm x 16 cm produced containing CEN-standard sand and using a water/cement ratio of 0,4.



### ► **Quality**

Like all other Calucec products, the production of LUMNITE SG is subject to stringent quality control. Constant monitoring of all components ensure a consistent quality. The production plant is certified according to EN ISO 9001 – certificate number CH08/1542 and the Environmental Management System EN ISO 14001 – certificate number CH08/1543.

### ► **Safety instructions**

The normal safety measures for cement must be followed. You will find further information in our safety data sheet.

As of: 07/2016

All previous technical data sheets are no longer valid.