

# REFRO40

## TECHNICAL DATA SHEET

### 1 GENERAL INFORMATION

**Refro40** is a calcium aluminate cement product which is specifically designed for refractory producers by Çimsa Research and Application Center.

Refro40 offers various advantages to refractory applications such as;

- Thermal resistance up to 1250 °C,
- High abrasion resistance,
- Resistance to acid and alkaline,
- High early and final strength,
- Easy application in winter conditions even under the freezing point (up to -5°C).

### 2 APPLICATION AREAS

**Refro40's** some application areas are;

- Iron and steel industry products,
- Glass industry products,
- Ceramic industry products,
- Petrochemical industry products,
- Aluminum industry products.

### 3 PRODUCTION

Çimsa Aluminates products are produced in L-shaped kilns by fused method with the special cooling system. After cooling, clinker is ground in ball mills and packaging is done.

### 4 PHASE COMPOSITION

**Major Mineral Phase** : CA

**Auxiliary Mineral Phases** : C<sub>12</sub>A<sub>7</sub>, C<sub>4</sub>AF

### 5 CHEMICAL COMPOSITION

Al <sub>2</sub> O <sub>3</sub> (%)	CaO (%)	SiO <sub>2</sub> (%)	Fe <sub>2</sub> O <sub>3</sub> (%)
≥ 38	≤ 38.0	≤ 5.0	≤ 19.0

TiO <sub>2</sub> (%)	MgO (%)	SO <sub>3</sub> (%)	Na <sub>2</sub> E <sub>q</sub> Alkali (%)
≤ 3.0	≤ 1.0	≤ 0.2	≤ 0.3

### 6 PHYSICAL AND MECHANICAL PROPERTIES

Initial Set (min)	≥ 170	EN 196-3
Final Set (min)	≤ 350	EN 196-3
Specific Gravity (g/cm <sup>3</sup> )	≤ 3.3	EN 196-6
Compressive Strength (MPa)	6 hr ≥ 30 24 hr ≥ 65	EN 196-1
Residue at 45 microns (%)	≤ 20.0	EN 196-6
Residue at 90 microns (%)	≤ 4.0	EN 196-6
Blaine (cm <sup>2</sup> /g)	≥ 2.600	EN 196-6

### 7 QUALITY CONTROL

Çimsa Aluminates products are produced according to TS EN 14647 standard. Production processes are certified according to EN ISO 9001, EN ISO 45001 and EN ISO 14001.

### 8 SAFETY INSTRUCTIONS

Standard safety requirements for regular cements have to be followed. For further information, please refer to the Safety Data Sheet of **Refro40**.

### 9 STORAGE CONDITIONS AND SHELF LIFE

**Refro40** must be stored in dry and sheltered conditions. In this case, it will retain its properties for a minimum of 6 months. Based on previous studies, its properties for more than one year observed to be preserved for a long time. No more than 10 bags or 2 pallets should be stacked on top of each other. The product must be stored in its original package. When it is not in use, the mouth of the package must be tightly closed.