

### 1 GENERAL INFORMATION

**Resisto40** is a calcium aluminate cement product which is specifically designed by Çimsa Research and Application Center for fulfilling the durability and time dependent needs of the producers.

Resisto40 offers various advantages to mortar and concrete applications such as;

- High early strength in repair concrete and mortars,
- Adjustable setting time,
- High abrasion resistance,
- Acid resistance up to pH 3,
- Durability against biological corrosion,
- Sulfate resistance,
- Thermal resistance up to 1250 °C.

### 2 APPLICATION AREAS

Application areas of **Resisto40**:

- Concrete road repair,
- Pipe coating,
- Field concrete applications,
- Geothermal applications,
- Special applications resistant to chemical abrasion,
- Mining applications.

### 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 Phases :** CA

**Minor Mineral Phases :** C<sub>12</sub>A<sub>7</sub>, C<sub>2</sub>S, C<sub>2</sub>AS, 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> (%) |
|------------------------------------|---------|----------------------|------------------------------------|
| ≥ 38.0                             | ≤ 40.0  | ≤ 5.0                | ≤ 17.5                             |

| TiO <sub>2</sub> (%) | MgO (%) | SO <sub>3</sub> (%) | Na <sub>2</sub> Eq Alkali (%) |
|----------------------|---------|---------------------|-------------------------------|
| ≤ 3.0                | ≤ 1.0   | ≤ 0.2               | ≤ 0.3                         |

### 6 PHYSICAL AND MECHANICAL PROPERTIES

|                                       |                         |          |
|---------------------------------------|-------------------------|----------|
| Initial Set (min)                     | ≥ 180                   | 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<br>24 hr ≥ 60 | 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)           | ≥ 2.800                 | 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 **Resisto40**.

### 9 STORAGE CONDITIONS AND SHELF LIFE

**Resisto40** 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.