Fraguamax

Description:

FRAGUAMAX is a hydraulic cement that develops high strength within the first hours.

Its chemical composition is quite different from that of Portland cement. This gives it special properties in setting times, durability, mechanical strength and resistance to sulfate attack.

It is considered a sulfate-resistant cement (to a greater degree than Type II and Type V Portland cements), owing to its zero tricalcium aluminate (C_3A) content (ASTM C-150).

It is a calcium sulfoaluminate (CSA, $C_4A_3\hat{S}$) cement, which significantly improves the properties of the concrete.

Physical properties:

Physical properties	Fraguamax
Specific gravity	3.1
Minimum fineness (cm²/g)	5800
Maximum loss on ignition (%)	1
Initial setting time (min)	>20
Final setting time (min)	<60
Compressive strength at 6 h (MPa)	>35
Compressive strength at 24 h (MPa)	>45
Flexural strength at 6 h (MPa)	>4
Flexural strength at 24 h (MPa)	>5

Use and Recommendations:

FRAGUAMAX can be used in any area where concrete and mortar with Portland cement are used, but it offers greater advantage when used to repair or rehabilitate highways, bridges, runways, aprons and taxiways at airports, industrial floors, structures in general and other projects where time is of the essence.

Because initial setting occurs at 15 minutes, the applicator must sample, place and finish the concrete without delay. The working time can be extended with retarding and water-reducing admixtures, the same ones used for Portland cement.

Lower temperatures lengthen the time available for placing and higher temperatures shorten it.

Concrete mix proportions using **FRAGUAMAX** are similar to those for Portland cement: it can be substituted kilogram for kilogram. The techniques for material selection, mix design, mixing and placing are similar.

Curing:

The curing process of concrete made with **FRAGUAMAX** Cement is very important to ensure proper hydration of the cement, which is why water curing is required. It is recommended to spray the surface with water for 1 or 2 hours after finishing, keeping the surface sufficiently moist to maintain its sheen.

If water curing is impractical, a chemical curing compound may be used, but only after an initial period of moist curing.

Advantages:

Concrete shrinkage is almost entirely eliminated, even when placed under extreme conditions with a high slump.

Another excellent characteristic is the reduced porosity of the concrete, which in turn improves its impermeability.

The C_3A content of **FRAGUAMAX** is 0%, which makes it a cement with greater resistance to sulfate attack than Type II and Type V Portland cements (ASTM C-5).

ASTM: American Society for Testing and Materials

Transport recommendations:

- Avoid platforms that could tear the cement bags.
- Use straps or bands to secure the bags; if ropes are used, protect the surfaces of the stack.
- If a forklift is used, take care not to damage the cement bags.
- To lift a bag, support it from underneath with both hands, to protect it along its length.

Storage recommendations:

- Store the bags in a dry, covered place.
- Preferably place the bags on flat surfaces, free of protrusions.
- Use the bags that have been stored the longest first.
- Form orderly rows, leaving a minimum space of 5 cm between each row.

Precautions:

FRAGUAMAX contains cementitious materials which, when mixed, may cause skin irritation.

Mix **FRAGUAMAX** in a ventilated area, without breathing the dust.

Avoid direct contact; it is recommended to wear goggles, gloves and an appropriate mask when handling it.

Wash exposed areas of skin with plenty of water.

If any material gets into the eyes, remove the safety goggles and rinse thoroughly with water for 10 minutes, then seek medical attention.

PPR LATINA

GCC
Grupo Cementos de Chihuahua

Reference translation of the Portuguese technical data sheet (file dated January 13, 2020). In case of discrepancy, the Portuguese version prevails. Translation by Maxim, October 2026.