PRODUCT DATA SHEET

KARASTA

GENERAL PURPOSE CEMENT

Karasta

CEM II/A-L 42.5 R

Karasta is a general purpose cement, one of the products of the family of common cements, according the European Standard EN 197-1:2011. It complies with Iraqi industrial license No: 3868 and is manufactured from natural products and using sustainable cement technology.

Applications

Karasta can be used in the following applications:

- Ready mix concrete.
- High strength concrete.
- Precast, Pre-stressed concrete.
- High performance concrete.
- Bridges, high rise buildings, dams.
- Concrete Block, light precast, concrete pipes.

Standard

Portland Limestone Cement: CEM II/A-L 42.5 R.

- According to Iraqis license No 3868 from ICOSQC.
- According to EN 197-1:2011.

Properties

The properties of fresh concrete made with Karasta compared with concrete made with Ordinary Portland Cement (CEM I) are better in terms of:

- Higher mortar workability.
- Higher plastering speed rate and easier spread of the mortar on the wall surface.
- Smoother finishing (improved surface quality).

The properties of cured concrete made with Karasta compared with concrete made with Ordinary Portland Cement (CEM I) are better in terms of:

- Less water bleeding.
- Less permeability.
- Less concrete cracks.

Applications				
Foundation-Columns-Slabs	1	3 5	2.5	1
Mason works and tiling	1		3.5	1
Plastering and rendering	1		3	1
Block	1	5	5	0.5

The above guidance is only in the case where the mix design is not specified by the project consultant.
Defined water quantities may change according to ambient temperature and humidity, aggregates absorption and clay content.

Usage & General Recommendations

All concrete ingredients (cement, aggregates, mixing water & admixtures) should comply with the relevant standards. Local (or international) concrete codes should be referred to, and appropriate design parameters (eg. cement type, minimum cement content, maximum W/C ratio and concrete strength class) must be selected depending on the requirements of the application, and according to international standards. Avoid casting concrete in temperatures less than 5 ºC and above 35 ºC.

Advantages:

- Higher durability of concrete structure due to less permeability.
- Better workability.
- Low heat of hydration.
- Less cracks.
- High rate of early strength development.
- More resistance towards leakages.
- Due to more fineness, Karasta has better cohesion with aggregates and makes a more dense concrete. The comparatively lower water-cement ratio provides an added advantage for further increasing the compressive strength of the concrete.
- Karasta has a lower specific gravity and therefore, on an equal weight-for-weight basis, produces a higher yield of concrete.
- Improves the productivity for block makers with limited storage space, more blocks per bag, and reduced de-moulding time.

Water:

In general, the more water is used for a given quantity of cement, the more porous and thus the weaker the concrete will be. It is therefore important to use the minimum amount of water required to make the mix workable, in order to obtain a strong and durable hardened concrete.
Make sure to use clean water for mixing, watering and spraying.

Mixing:

It is recommended to mix the constituents in a fully automated batching plant.
For non-automated concrete production (hand mixing or mixing by portable mixers), accurate measurement of all ingredients with a suitable container (wheelbarrow or bucket) is essential. Materials should be mixed until a uniform color is obtained. Adding too much water should be avoided.

Curing:

Concrete or plaster should be watered for a period no less than 3 days to prevent cracking and to ensure proper strength development. In hot weather, concrete or plaster should be watered for 7 days. Following the placement, horizontal concrete surfaces should be sprayed gently with water, be cured by pulverized agents or protected with plastic (or wet hessian) sheets, in order to prevent drying shrinkage and water evaporation.

Availability

Available in bulk, 50kg bags or 1.5 ton jumbo bags throughout Iraq.

Storage

- Bagged cement should be stored on raised platform and be protected from adverse atmospheric conditions.
- 50 kg bags should not be stored in more than ten vertical rows.
- Bulk cement should be stored in damp-proof silos.

Health and Safety

Cement and concrete in general, may cause skin irritation. During any application, wearing gloves and eye glasses is highly recommended. In case cement touches the eyes or bare skin, the area should be thoroughly rinsed with free flowing water and medical assistance be provided when necessary.

Technical Support

Further information, advice on this product and the full range of Lafarge cement products can be obtained through the contacts listed below:

Call Center: 07713454545
E-mail: 4545@lafarge.com

Typical Properties-Karasta CEM II/A-L 42.5 R		
Parameters		Range
Lime Saturation Coefficient		0.96 - 1.04
Magnesium Oxide (MgO) %		1.5 - 2.5
SO_3 Content %		2.2 - 2.6
Chloride Content %		0.01 - 0.03
Fineness (m^2/kg)		360 - 380
Initial Setting Time (min)		125 - 180
Final Setting Time (Hr)		3 - 3.7
Soundness Letchatelier (mm)		0 -2
Specific Gravity (kg/Litter)		3.05 - 3.15
Bulk Density (kg/m^3)		1.369 ± 0.1
Compressive Strength as per EN 197-1 (Mpa)	2d	22 - 27
	7d	37 - 42
	28d	46 - 52

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