

## GRADA ADD LIQUID C

### Concentradet Liquid Crystallized Waterproofing Additive

Technical Product Document

Date of Preparation : 15.04.2017

Revised :

#### PRODUCT DEFINITION

GRADA ADD LIQUID C is a water impermeability liquid concrete admixture which makes concrete permanently waterproof and creates a crystalline effect. The chemicals it contains react with moisture and free lime inside the concrete and it is effective all around the concrete. It forms crystals that do not dissolve in capillary voids and pores.

#### USAGE AREAS

- In all concrete applications in which crystallized capillary water impermeability is required
- Foundations, reinforced concrete walls
- Bored pile foundations
- Elevator pits
- Tunnels, dams
- Precast concrete elements
- Drinking water and waste water tanks
- Water treatment facilities
- Swimming pools

#### ADVANTAGES

- It is constantly active during the curing period and in every contact with water. It provides permanent sealing by filling the capillary gaps in the concrete with insoluble nano-sized crystals.
- Concrete insulated with ADD LIQUID C is resistant to water pressure from both positive and negative directions.
- It is not toxic. It is safe using concrete insulated with ADD LIQUID C in water tanks.
- It is water vapor permeable and allows concrete to transfer vapor.
- ADD LIQUID C protects the reinforcement iron inside the concrete against corrosion and increases the compressive and freeze-thaw resistance of the concrete.
- As it is added to the concrete mixture as a liquid, it is easily mixed without the risk of clumping unlike the powder products.
- It reduces the time cost and labor cost as well.
- It is the most appropriate solution for the bored pile raft insulation.
- Due to that it is in liquid form, it does not clump during mixing process.
- If ADD LIQUID C is used, there is no need for another waterproofing application.
- It is environmentally friendly.

#### PRODUCT DETAILS

Appearance	: Light brown liquid
Liquid Density	: 1.10 g/cm <sup>3</sup>
Application Temperature	: between +5°C and +30°C
Mixture Working Time	: 50 minutes
Ph	: 11.5

#### APPLICATION

- Before the application, shake the ADD LIQUID C in its container. The water / cement ratio should not be more than 0.55.
- ADD LIQUID C is added to the concrete with the amount of 1 – 1,5 % of the cement weight in the concrete.
- If the mixture will be prepared on the construction site, it should be added into the ready to pour concrete in the concrete mixer and it should be mixed for about 5 minutes, immediately. If it will be prepared in a batching plant, the product should be added into the concrete mixture water and this mixture should be added to the concrete as the last component.
- The working time of the product is approximately 50 minutes after it is added to the mixture.

#### CONSUMPTION

If Water/Cement ratio is smaller than 0.45, the amount should be 1% of the cement weight in the concrete mixture. If Water/Cement ratio is 0.50, the amount should be 1.25% of the cement weight in the concrete mixture. If Water/Cement ratio is 0.55, the amount should be 1,5% of the cement weight in the concrete mixture.

#### TRANSFER and STORAGE

The product should be stored between +5 °C and +35 °C. It should not be exposed to direct sunlight. Opened product should be stored in its own packaging by closing its lid well.

#### PACKAGING

In 30 kg plastic drums and 200 kg barrels

#### STORAGE CONDITIONS AND DURATION

It can be stored for 12 months with its unopened package above the temperature of +10 °C. Protect against freezing.

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### SAFETY PRECAUTIONS

During the application, work clothes, protective gloves, goggles and masks should be used in accordance with Occupational Safety and Health Standards. Due to the irritating effects of cementitious materials, it shouldn't contact with skin and eyes during storage and application. In case of contact, it should be washed immediately with plenty of water and soap. If swallowed, consult a doctor immediately. Food and beverage should be prohibited in the application areas.

It should be kept in places out of reach of children. For detailed information, see the Material Safety Data Sheet. **RESPONSIBILITY:** The details in this technical document are based on our scientific and practical knowledge. GRADA Yapı Kimyasalları A. S. is only responsible for the quality of the product. GRADA Yapı Kimyasalları A.S. can not be held responsible for incorrect use and for the cases where the product is not used in accordance with the written recommendations.

	
GRADA YAPI KİMYASALLARI VE İNŞ. MALZ. PAZ. VE ÜRT. SAN. TİC. A.Ş. Çınardere Mah. Akan Sok. No:13/3 Kat:2 Pendik / İstanbul	
<b>TÜRKİYE</b> <b>19</b>	
1020 – CPR – 040 060275 DOP NO: 0002 EN 934-2: 2009+A1:2012 GRADA ADD LIQUID Harç ve Sıvalarda Kullanılan Polimer Esaslı Katkı Su Geçirimsizlik Katkıları , Çizelge 9	
Kılcal Su Emme	7 günlük kürden sonra , 7 günlük deney için; deneme betonu , şahit betonun en çok % 50'si; 90 günlük kürden sonra, 28 günlük deney için; deneme betonu , şahit betonun en çok %60'ı
Basınç Dayanımı	28 günde, deneme betonu Şahit betonun en az % 85'i
Taze Betondaki Hava miktarı	Üretici tarafından aksi belirtilmedikçe, deneme betonu, şahit betonun hacimce en çok % 2 üzerinde
En Yüksek Klor Muhtevası Kütlece:	%0,03
En Yüksek Alkali Muhtevası Kütlece:	%0,1
Tehlikeli Maddeler	Herhangi Bir Tehlikeli Madde İçermez



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