# Univer - TARD 1000

## Cement hydration control agent for shotcrete and concrete

#### Description

Univer – TARD 1000 is set retarder for concrete and cement mortar. Univer – TARD 1000 facilitates stabilization of concrete mixs for long periods. Without negatively strength of long age strength.

### Use

- · For wet type shotcrete.
- · For lower heat producing concrete
- · For super high strength concrete
- For long-distance delivery
- For high quality concrete such as atomic power plant, highway, express railroad, subway, bridge, harbor and airport.

### Features

- · Excellent retarded setting time characteristics.
- · Some slump increases.
- Does not contain chloride

### Technical data

Physical Properties of Univer - TARD 1000				
Appearance	Yellowish liquid			
Specific Gravity (20 °C)	1.1±0.11g/mℓ			
pH value	3±1			
Thermal stability	0°C to 50°C			
Dosage Cx0.1-3.0%				

### Application

- $\cdot$  Univer TARD 1000 is possible to use 0.1 3.0% of cement weight however it is able to adjust using amount through trial test .
- Univer TARD 1000 add to the concrete mixer together with the mixing water.

#### Test result

	Unit Weight(kg/m3)				Deterder	
	W	С	S	G	AD	Relaiuei
Plain	180	310	765	975	Cx0.5%	
With retarder	180	310	765	975	Cx0.5%	Cx1.4%

Slump (cm)	Air (%)	Time of setti	ng (hr:min)	Compressive Strength (Mpa)		
			Initial	Final	7days	28days
Plain	8	2.4	5:30	7:35	18.0	28.9
With retarder	9	2.8	40:18	43:25	20.1	29.4

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#### Caution

 $\cdot$  Store in warm place preventing from freezing. Contents should not be exposed for a long time.

• In case of contact with skin and eyes ,flush immediately with plenty of water and seek medical advice.

 $\cdot$  For further information, see the Material Safety Data Sheet

#### Packing

· Univer TARD 1000 is available in 210kg PE drum and 1000kg IBC tanks.



(Shotcrete)

(Long distance delivery)

The information given in this bulletin is to the best of our knowledge accurate. It is intended to be helpful but no warranty is expressed or implied regarding the accuracy of such data. This is a chemical product developed and produced for industrial use. It is strictly requested not to use this product(s) to the application to be taken into human body.

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## Univer - TARD 1000 Test result

## Mixed design

W/C (%)	S/A(%)	Unit Weight(kg/m3)					
		W	С	S	G	PC	TARD 1000
46.0	65.0	222	480	1161	626	3.36	( C x % )

- Remark: PC (20% solid content)

## **Test result**

	Dosage (Cx%)	Initial setting time (hr:min)	Final setting time (hr:min)
Without	0	06:20	09:10
	<sub>2.4</sub> (Cx0.5%)	23:10	26:00
TARD 1000	4.8 (Cx1.0%)	49:50	52:40
	<sub>9.6</sub> (Cx2.0%)	129.00	132:00

## **Compressive strength (Mpa)**

	0%	0.5%	1.0%	2.0%
28days	45.3	46.2	46.7	47.5

## Slump loss



When you test of slump loss, You must use Ransome type concrete mixer. Ransome mixer give function that similar to remicon truck

	initial	30min	60min	120min
Without Ransome mixer	20.0	14.0	12.0	12.0
With Ransome mixer	20.0	20.5	19.5	19.0