

# UNIVER ES-A45

## High performance new generation superplasticizer

Univer ES-45A is an advanced polycarboxylate based superplasticizer for high early strength concrete.

Univer ES-45A is an early strength polycarboxylate polymer which performs outstanding high early compressive strength.

It is designed for the need to improve early compressive strength.

### Physical Properties

Physical Properties of UNIVER ES-A45	
Appearance	Light yellow liquid
Odour	Slight
Total Solid Contents, %	45%(w/w), approx
pH(undiluted)	3
Specific Gravity	1.088 (25°C)
Viscosity, Brookfield Viscometer, cps	600 (25°C)

### Applications

The excellent dispersing effect and is able to maintain the workability of the concrete for longer without causing retardation. Using UNIVER ES-A45 is the best choice for

- High-performance concrete
- High-strength concrete
- Pre-cast plants
- Self-compacting concrete

### Advantages

- Concrete production at lower temperatures.
- Reduction of setting time and shows early strength on concrete
- Less vibration required
- Higher durability from improved strength

### Typical dosage

The recommended dosage range of UNIVER ES-A45 is 0.2~1.0 liters/100 kg of binders.

But the optimum dosage of UNIVER ES-A45 may depend on specific requirements of concrete properties and materials. The optimum dosage of UNIVER ES-A45 should be determined by trials using the materials and conditions.

### Storage and Handling

UNIVER ES-A45 should be stored between 0°C to 40°C. If stored in original unopened containers it will have a shelf life of 12 months. If ES-A45 become frozen, the properties of ES-A45 can be homogenized by thorough agitation of the completely thawed product.

### Packaging

UNIVER ES-A45 is available in bulk supply, 1000Kg/IBC or 200kg/drum

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