



# **BUILDING CHEMICALS** **SPECIALISTS**

## **UNIPLAST AE121**

### **Air Entraining Concrete Admixture**

#### **FRINICS CHEMICALS LTD**

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#### **USES**

- To produce **air entrained concrete** for increased durability and resistance to damage by frost and de-icing salts. Typical applications include concrete roads and bridge decks, airport runways and taxiways and other extensive areas of concrete exposed to potential frost damage.
- To improve cohesion and workability of concrete mixes where poorly graded aggregates must be used and bleeding, segregation or sand runs occur.
- To reduce permeability of lean concrete mixes.
- To improve stability and cohesion in extruded concrete.

#### **ADVANTAGES**

- Chloride free, safe to be used in reinforced and prestressed concrete.
- Entrained air bubbles assist in the formation of a stable cohesive mix, reducing segregation and bleeding.
- Air entrainment increases the resistance of concrete to attack by frost and de-icing salts, reducing problems of surface scaling and concrete failure.
- Air entrainment improves workability and helps produce a dense, uniform, close textured surface free from gravel nests and sand runs, further enhancing durability.
- Water reduction allows concrete to be produced with reduced permeability and increased strength compared to that obtained with air entrainment alone.

#### **STANDARD COMPLIANCE**

UNIPLAST AE121 complies with **CYS EN934-2:2009 +A1:2012 Table 5 - Specific requirements for air entraining admixtures (at equal consistence)**.

UNIPLAST AE121 is certified by CERTIF (Certification Organization) with the Certificate of the **Factory Production Control** with Certificate Number **1328 - CPR - 0063** and bears **CE marking**.

#### **PROPERTIES**

Appearance: **Liquid**  
 Colour: **Brown**  
 Specific Gravity: **1,17± 0,01** at 20°C  
 pH: **6,75 ± 1,0**  
 Chloride Content: **Chloride Free**

#### **PRODUCT DESCRIPTION**

UNIPLAST AE121 is a chloride free air-entraining admixture based on selected sugar reduced lignosulphonates and surface-active agents which is easily dispersed in water.

UNIPLAST AE121 entrains **4%-6%** by volume.

UNIPLAST AE121 acts at the interface between the mixing water and cement/aggregate particles to produce microscopic air bubbles, which are evenly distributed throughout the concrete. The entrained air enhances durability by providing protection against the rapid temperature changes found in freezing and thawing conditions and with the use of de-icing salts.

#### **DOSAGE**

Trials should be carried out with the proposed concrete mix in order to determine the optimum dosage of **UNIPLAST AE121**. Higher dosages may be used under adequate supervision.

UNIPLAST AE121 is compatible with all types of cement which are produced in Cyprus. It can also be combined with all other Concrete Admixtures manufactured by our company. Suggested starting point dosages are **0.13 to 0.30 litres / 50 kg of cement**.

### **DISPENSING**

UNIPLAST AE121 is measured using a suitable dispenser. To obtain the best results it should always be added to the concrete mix dissolved in the water.

An overdose of double the intended amount of UNIPLAST AE121 will result in a significant increase in the level of air entrainment obtained, which will tend to reduce strength. This will increase the workability and reduce strength. The degree of this effect will depend on the particular mix design and overdose level.

An increased politicizing effect will also be obtained, together with an increase in setting time.

### **CURING**

Good curing will always lead to low permeability concrete and good curing practice should be always maintained especially at high temperatures and when increased dosages of UNIPLAST AE121 are used. Curing membrane, water spray or wet hessian should always be used.

## **COMPARATIVE RESULTS between control (only water) & Test with UNIPLAST AE121 at equal consistence**

	Dosage AE121 (Litres)	Cement Content (Kg/m <sup>3</sup> )	W/C ratio	Reduce Water %	Air Content (%)	Slump (mm)	Compress. Strength in 28 days (N/mm <sup>2</sup> )
Control (only water)	-	350	0,62	-	1,9	120	30,0
Test (with AE121)	1,25	350	0,59	5%	5,1	120	29,0

### **PACKAGING - STORAGE**

UNIPLAST AE121 is delivered in **210** Litres metal drums and **1000** Litres plastic containers. UNIPLAST AE121 has a minimum shelf life of 12 months provided is stored between **2° C** and **40° C**. The material freezes at **-4° C**. It is necessary to protect material from direct sunlight and frost.

### **PRECAUTIONS**

UNIPLAST AE121 is water based and is non-flammable.

UNIPLAST AE121 should not be swallowed. Contact with skin and eyes should be avoided. In the event that it comes in contact with the skin rinse thoroughly with plenty of water. In case of contact with eyes rinse immediately with water and seek medical attention immediately.

For more information on secure management and storage please request the **SAFETY DATA SHEET**.



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