

### Armix AE

(Formerly known as MYK REMI-AIR AE)

Air entraining admixture



## TECHNICAL DATA SHEET

### Product Description

Armix AE is a chloride free air entraining admixture. It is supplied as a translucent water white coloured solution which instantly disperses in water.

Armix AE 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 frost, freeze-thaw cycles and de-icing salt.

### 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.
- As part of a combined admixture system for the production of ready mixed retarded mortar.

### Features and Benefits

- Air entrainment increases the resistance of concrete to attack by frost and de-icing salts, reducing problems of surface scaling and concrete failure.
- Entrained air bubbles assist in the formation of a stable cohesive mix, reducing segregation and bleeding.
- Air entrainment improves workability and helps produce a dense, uniform, close textured surface free from gravel nests and sand runs, so further enhancing durability.
- Excellent air bubble stability allows use with a wide range of aggregate qualities and mix conditions.

### Application Methodology

#### Typical Dosage

The optimum dosage of Armix AE to meet specific requirements must always be determined by trials using the materials and conditions that will be experienced in use. This allows the optimisation of admixture dosage and mix design and provides a complete assessment of the concrete mix.

As a starting point for trials a dosage of 0.08 litres/100kg of cement will typically give an air content of 5% + 1.5% in a medium workability concrete of 300 - 350 kg/m<sup>3</sup> cementitious content. Where cement replacement

If cementitious materials are used they should be considered, for purposes of calculating admixture dosage. The presence of PFA or microsilica may increase the dosage required to obtain particular air content.

#### Use at Other Dosages

Dosages outside the typical ranges suggested on this sheet may be used if necessary and suitable to meet particular mix requirements, provided that adequate supervision is available. Compliance with requirements must be accessed through trial mixes. Contact MYKA for advice in these cases.

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### Compatibility:

Armix AE compatible with other MYKA admixtures used in the same concrete mix. All admixtures should be added to the concrete separately and must not be mixed together prior to addition. The resultant properties of concrete containing more than one admixture should be assessed by the trial mix.

Armix AE suitable for use with all types of ordinary port land cement. Contact MYKA for use with special cements and blends containing cement replacement materials.

### Dispensing:

The correct quantity of Armix AE should measure by means of a recommended dispenser. The admixture should then be added to the concrete with the mixing water to obtain the best results. Contact MYKA for advice regarding suitable equipment and its installation.

### Curing:

As with all structural concrete, good curing practice should be maintained. Water spray or wet hessian applied curing membranes should be used.

### Cleaning:

Spillages of Armix AE can be removed with water.

**Overdosing :** An overdose of double the recommended measure of Armix AE will increase workability and air content can result in slight set retardation of the concrete. The ultimate strength of the concrete should not be impaired if advantage is taken of the water reduction and the concrete is adequately cured.

## Technical Data

Appearance	Translucent liquid
Chloride content (BS 5075)	Nil
Specific gravity	Approx 1.01 at 27°C
pH	Min 6.0

Armix AE complies with BS 5075 Part 2, BS 4887 P-I ASTM C260 and with the Department of Transport Specdation for Highway Works.

## Factors affecting air entrainment

**Sand content:** The quantity of air entrained will increase with increasing sand content - typically an increase in sand content from 35 to 45% will raise the air content from 4.5 to 6.0%.

### Cement Fineness And Content:

The amount of air entrained reduces with an increase in cement fineness or content.

**Aggregate quality:** Silt content variations can adversely affect the degree of air entrainment. This is particularly relevant to the use of crushed aggregate during inclement weather. Excessive silt content may render Armix AE ineffective.

**Organic impurities:** Carbon can reduce the effectiveness of Armix AE. This does not normally create a problem, but caution should be exercised when using PFA or some pigments. Where this type of material is to be a used alternative admixture are available.

**Concrete temperature:** A temperature increase will reduce air content. In practice, daily fluctuations are much smaller and do not cause significant variation.

**Mixing and pumping:** Air content will increase with increased time of mixing up to about two minutes in stationary mixers and about 15 minutes in transit mixers. Thereafter, the air content generally remains constant for a considerable period. Small losses of air may occur during pumping. With long pipelines, air content in excess of 5% may seriously reduce the efficiency of the pump.

**Compaction of concrete:** Prolonged vibration should be avoided. For specific technical assistance and advice on any of the above aspects, please contact MYKA.

**Setting time:** Negligible effect at normal dosage rate.

**Compatibility :** Armix AE can be used with all types of Portland cements and is generally compatible with all admixtures. It is recommended that all admixtures be added to concrete separately.

**Reduced permeability:** The microscopic air bubbles introduced by use of Armix AE break up the capillary structure within concrete and hence reduce water permeability.

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**Durability:** Reducing the water permeability of concrete offers increased resistance to weather exposure and attack in aggressive environments.

**Frost Resistance:** Addition of Armix AE produces controlled air space.

**Compressive strength:** A 15% free water reduction is often possible with Armix AE. This resultant increased compressive strength normally offsets the anticipated strength loss associated with air entrainment, thus producing air entrained concrete with no increase in cement content.

**Resistance to Salts:** Air entrainment increases the resistance of concrete to surface scaling, which is an adverse effect associated with repeated exposure to marine salts or application of de-icing salts to the concrete surface.

### Packaging

Armix AE is supplied in 5, 20 and 210Kg drums.

### Storage and Shelf Life

Armix AE has minimum shelf life of 12 months in unopened containers under normal warehouse conditions.

### Health & Safety

Armix AE is non-toxic. Any splashes should be rinsed thoroughly with water. Splashes to the eyes should be washed immediately with water and medical advice should be sought.

#### Fire:

Armix AE is non-flammable.

### Product Categories Available



### Legal Note

The information, and, in particular, the recommendations relating to the application and end-use of MYK Arment products, are given in good faith based on MYK Arment current knowledge and experience of the products when properly stored, handled and applied under normal conditions in accordance with MYK Arment's recommendations. In practice, the difference in materials, substrates and actual site conditions are such that no warranty in respect of merchant ability or of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any written recommendations, or from any other advice offered. The user of the product must test the product's suitability for the intended application & purpose. MYK Arment reserves the right to change the properties of its products. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users must always refer to the most recent issue of the local product data sheet for the product concerned, copies of which will be supplied on request.