CHEMFIT AIRMIX AE100

Air Entraining Admixture – For Roads, Dams & Mass Concrete

PRODUCT DESCRIPTION

ChemFit AirMix AE100 is a high-performance air entraining admixture specifically formulated to introduce a controlled and stable system of microscopic air bubbles into concrete. These air bubbles improve concrete's resistance to freeze-thaw cycles, deicing salt scaling, and sulfate attack while enhancing workability and reducing bleeding. This admixture is essential for concrete exposed to freezing and thawing conditions, particularly in roads, bridges, dams, and other mass concrete structures.

PRIMARY APPICATIONS

ChemFit AirMix AE100 is recommended for use in conditions such as:

- Roadways, highways, and pavements exposed to freeze-thaw cycles
- Bridge decks and overpasses requiring deicing salt resistance
- Dams, spillways, and hydraulic structures
- Mass concrete foundations in cold climates
- Parking structures exposed to winter conditions
- Airport runways and taxiways
- Tunnels and underground structures
- Precast concrete elements for exterior use
- Concrete pipes and drainage structures
- Any concrete exposed to freezing and thawing or deicing chemicals

KEY FEATURES AND BENEFITS

- **Freeze-thaw protection** – Enhances durability in cold climates through stable air void system
- **Improved workability** – Increases concrete plasticity and reduces bleeding
- **Deicing salt resistance** – Protects against surface scaling from winter road salts
- **Reduced bleeding and segregation** – Creates more homogeneous concrete
- **Improved sulfate resistance** – Enhances durability in aggressive soil conditions
- **Stable air system** – Produces consistent, well-distributed microscopic air bubbles
- **Reduced water demand** – Improves cohesion without increasing water content
- **ASTM C260 compliant** – Meets international standards for air entraining admixtures
- **Liquid form** – Easy to dispense and batch accurately
- **Compatible with all cements** – Works with OPC, PPC, PSC, and blended cements

PHYSICAL AND CHEMICAL PROPERTIES

Property	Specification
Appearance	Clear to slightly hazy liquid
Color	Light amber to brown
Specific Gravity	1.00 – 1.05 at 25°C
pH Value	7.0 – 9.0
Chloride Content	Nil (≤ 0.1%) – Non-corrosive to rebar
Air Content Range	4 – 8% (depending on dosage and mix design)
Bubble Size	Microscopic (50 – 200 microns)
Freezing Point	0°C

PACKAGING AND STORAGE

Packaging:

- 200 L drums
- 1000 L IBCs (Intermediate Bulk Containers)

Storage:

- Store in original sealed containers at +5°C to +35°C
- Protect from direct sunlight, frost, and extreme heat
- Keep container tightly closed when not in use
- Do not allow to freeze

Shelf life:

- 12 months from date of manufacture

DOSAGE AND COVERAGE RATES

The recommended dosage of **ChemFit AirMix AE100** is **0.03% to 0.15% by weight of cementitious material**.

- **Low dosage (0.03% – 0.06%):** Produces 4 – 5% air content for mild freeze-thaw exposure and improved workability
- **Medium dosage (0.06% – 0.10%):** Delivers 5 – 7% air content for standard freeze-thaw protection in roads and bridges
- **High dosage (0.10% – 0.15%):** Produces 7 – 8% air content for severe freeze-thaw exposure and maximum deicing salt resistance
- **Per 50 kg cement bag:** Dosage ranges from 0.015 to 0.075 kg (approximately 15 to 75 ml) per bag
- **Yield per 200 L drum:** Approximately 1,330 to 6,660 bags of cement (66 to 333 tons of cement), based on 0.06% dosage
- **Yield per 1000 L IBC:** Approximately 6,660 to 33,300 bags of cement (333 to 1,665 tons of cement), based on 0.06% dosage

NOTE: Concrete trial mixes shall be carried out to confirm optimal dosage for specific project requirements. Air content is influenced by mixing time, temperature, cement type, and other admixtures. Higher dosages may be required for lightweight aggregates or rounded aggregates. Excessive air content (above 8%) may reduce concrete strength.

APPLICATION GUIDLINES

ChemFit AirMix AE100 should be added directly to the mixing water during batching. For best results, add the admixture to the mixing water before combining with cement and aggregates to ensure uniform distribution of air bubbles. The concrete should be mixed for a minimum of 2 to 3 minutes to achieve stable air entrainment; extended mixing (up to 5 minutes) may increase air content. Over-mixing can reduce air content; under-mixing will result in uneven air distribution. This product is compatible with all standard Portland cements, blended cements, and most supplementary cementitious materials such as slag, fly ash, and silica fume. **ChemFit AirMix AE100** is compatible with most concrete admixtures including water reducers, superplasticizers, retarders, and accelerators; however, trial mixes are recommended to confirm compatibility as some admixtures may affect air content. Do not premix with other admixtures in concentrated form. If overdosed, excessive air content (above 8-10%) may occur, leading to reduced strength; reduce dosage in subsequent batches. For best results, test air content at the point of placement using ASTM C231 (pressure method) or ASTM C173 (volumetric method). Adjust dosage as needed based on site conditions and concrete temperature.

HEALTH AND SAFETY

ChemFit AirMix AE100 may cause mild eye and skin irritation. If eye contact occurs, rinse thoroughly with water for 15 minutes. For skin contact, wash with soap and water. If swallowed, do not induce vomiting; instead rinse the mouth and drink water, then seek medical advice. Use nitrile gloves and goggles during handling. Avoid prolonged or repeated skin contact. Refer to the Safety Data Sheet for detailed information.

CLEAING OF TOOLS

Clean all batching equipment, measuring containers, and spillages with water immediately after use. Dried or cured material may require mechanical removal.

APPROVALS AND STANDARDS

ChemFit AirMix AE100 conforms to the following standards:

- **ASTM C260** – Air Entraining Admixtures for Concrete
- **AASHTO M154** – Standard Specification for Air-Entraining Admixtures for Concrete

LEGAL NOTES

All technical data provided in this Product Data Sheet is based on laboratory testing under controlled conditions. Actual field performance may vary due to differences in substrates, application methods, site conditions, and environmental factors. ChemFit makes no warranty of merchantability or fitness for a particular purpose. Users shall conduct their own trials to validate product suitability for the intended application. ChemFit reserves the right to modify product specifications without prior notice. For the most current documentation, request the latest Product Data Sheet and Safety Data Sheet from ChemFit.

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