

**CX AIR ENTRAINING****Air entraining admixture for concrete****Description:**

- **CX AIR ENTRAINING** is an air-entraining admixture which gives concrete extra protection by creating ultra-stable air bubbles that are strong, small and closely spaced - a characteristic especially useful in the types of concrete known for their difficulty to entrain and maintain the air content desired.

Uses:

- Concrete exposed to freeze/thaw attack.
- To reduce bleeding due to poor aggregate grading.

Advantages:

- Increased resistance to damage from freeze/thaw cycles and to scaling from de-icing salts.
- Reduced permeability - increased water-tightness.
- Reduced segregation and bleeding.
- Improved plasticity and workability.
- Greatly improved stability of air entrainment.
- Improved air-void system in hardened concrete.
- Improved ability to entrain and retain air in low-slump concrete; concrete containing high-carbon content fly ash; concrete containing large amounts of fine materials; concrete using high-alkali cements; high-temperature concrete; and concrete with extended mixing times.

Dosage :

- **CX AIR ENTRAINING** is designed to be incorporated in concrete targeted to achieve air contents in the range 3 - 8%. It is compatible with all EN 197 cements but the dosage may vary.
- The amount of **CX AIR ENTRAINING** admixture used will depend upon the amount of entrained air required under actual job conditions. In a trial mix, use 600 ml 100kg of cement and adjust in the light of results obtained.
- In mixes containing water-reducing, set-controlling admixtures, the amount of **CX AIR ENTRAINING** may be considerably less than the amount required in plain concrete.
- There is no standard dosage rate for **CX AIR ENTRAINING** admixture. The exact quantity of air-entraining admixture needed for a given air content of concrete is not predictable because of differences in constituent materials.
- Typical factors which might influence the amount of air entrained are: water content, temperature, cement, sand grading, sand aggregate ratio, slump, means of conveying and placement, use of extra fine materials such as fly ash, etc.

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- The amount of **CX AIR ENTRAINING** used will depend upon the amount of entrained air required under actual job conditions.
- For optimum, consistent performance, the air-entraining admixture should be dispensed on damp, normal, or lightweight fine aggregate. If this is not possible, plant trials should be performed to identify the optimum dispensing method.
- When using lightweight fine aggregate, field evaluations should be conducted to determine the best location to dispense the air-entraining admixture - on the damp fine aggregate or with the initial batch water.

APPLICATION PROCEDURE :

- Concrete durability research has established that the best protection for concrete from the adverse effects of freeze/thaw cycles and de-icing salts results from: proper air content in the hardened concrete; a suitable air-void system in terms of bubble size and spacing; and adequate concrete strength; assuming the use of sound aggregates and proper mixing, placing, handling and curing techniques.
- Control of air content should be based upon determinations made on concrete at the time of placement, following adjustment of the batch to proper consistency (slump). The rate of use of an air-entraining admixture depends on the air content to be obtained along with many other factors.
- The amount normally required is reduced by the introduction of water-reducing, set-controlling admixture.
- When unusually low amounts of an air-entraining admixture are sufficient to achieve normal ranges of air content or if the required amount of air-entraining admixture necessary to achieve required levels of air content is observed to decrease significantly under given conditions, the reason for this change should be investigated.
- In such cases, it is especially important to determine: (a) that a proper amount of air is contained in the fresh concrete at the point of placement, and (b) that a suitable air-void system (spacing factor) is being obtained in the hardened concrete.

MIXING :

- Add **CX AIR ENTRAINING** to the concrete mix using a dispenser designed for air-entraining admixtures; or add manually using a suitable measuring device that ensures accuracy within plus or minus 3% of the required amount.
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- In mixes containing water-reducing, set-controlling admixtures, the amount of **CX AIR ENTRAINING** needed is somewhat less than the amount required in plain concrete.
- In mixes requiring a significantly higher or lower dosage to obtain the desired air content, consult your CHEMAX Construction Chemicals, representative or Technical Services Department.
- Measure the air content of the trial mix and either increase or decrease the quantity of **CX AIR ENTRAINING** admixture to obtain the desired air content in the production mix. Check the air content of the first batch and make further adjustments if needed.
- Frequent checks during the course of the work should be made since factors mentioned in paragraph 3 above may require adjustments in the **CX AIR ENTRAINING** -dosage rate.
- Adjustments to the dosage should be based on the amount of entrained air in the mix at the point of placement.

COMPATIBILITY :

- **CX AIR ENTRAINING** can be used with all types of EN 197 Cements. For use with other special cements, contact our Technical Services Department. **CX AIR ENTRAINING** should not be pre-mixed with other admixtures. If other admixtures are to be used in concrete containing **CX AIR ENTRAINING** they must be dispensed separately.
- **CX AIR ENTRAINING** admixture is compatible with concrete containing other admixtures or admixture systems - water-reducers, high-range water- reducers, accelerators, retarders, densifiers and water repellents.
- It also increases the entrained air content of concrete made with air-entraining Portland cement. When such complimentary admixtures are required it is important that laboratory trials are performed, prior to any supply, to determine the respective dosages of any complimentary admixture, and the suitability, in the fresh and hardened state, of the resultant concrete.
- In these circumstances we recommend that you consult our Technical Services Department for further advice.

PACKAGING :

- **CX AIR ENTRAINING** is supplied in 200litre drums and 25-litre containers.

**CX AIR ENTRAINING****Air entraining admixture for concrete****Product data :**

Appearance:	Light brown liquid
Specific gravity @ 20°C:	1.00 ± 0.02 g/cm ³
pH-value:	10.5 ± 1
Alkali content (%):	≤ 0.50 by mass
Chloride content (%):	≤ 0.10 by mass
Compressive strength – 28 day	≥ 75% of Reference mix
Air content in fresh concrete	≥ 2.5% by volume of Reference mix & total air content between 4% & 6%
Dangerous substances	No Performance Determined
Durability	No Performance Determined

Shelf life:

- 12 months if stored according to manufacturer's instructions in unopened container. n unopened container.

Storage conditions:

- Store in original sealed containers and at temperatures between 5°C and 30°C. Store under cover, out of direct sunlight and protect from extremes of temperature.
- Failure to comply with the recommended storage conditions may result in premature deterioration of the product or packaging.