

Cemairin

Air entraining admixture for concrete



Description

Cemairin is an air entraining admixture for concrete, formulated from selected polymers specially designed to create microscopic air bubbles that are uniformly distributed in the concrete mix. This effect can be used to improve concrete cohesion and resistance to freeze thaw cycles.

Applications

- ▲ In concrete mixes for roadways, airport runways and other concrete exposed to potential frost damage.
- ▲ To increase the durability of concrete and its resistance to damage by frost and de-icing salts.
- ▲ To increase cohesion of concrete mixes to overcome bleed, segregation and sand runs where poorly graded aggregate with high fine content needs to be used.

Advantages

- ▲ Greatly improves cohesion, reduces segregation and bleeding.
- ▲ Increased freeze/thaw cycle resistance.
- ▲ Improves workability and plasticity.
- ▲ Exceptionally effective with aggregate with high fine content.
- ▲ Suitable for mixes containing PFA, GGBFS and microsilica.
- ▲ Chloride free.

Compatibility

Cemairin can be used with all types of Portland cement and cement replacement materials. Cemairin is compatible with other DCP admixtures used in the same concrete mix.

If more than one type of admixture is to be used in concrete mix, they must be dispensed to the concrete separately.

Standards

Cemairin complies with ASTM C260, BS 5075, Part 2, EN 934, Part 2 and IS9103.

Technical Properties:

Colour:	Brown liquid
Specific gravity:	1.03 ± 0.01
Chloride content: EN 934, Part 2	Nil

Method of Use

Cemairin should be added to the concrete with the mixing water to achieve optimum performance. An automatic dispenser should be used to dispense the correct quantity of Cemairin to the concrete mix.

Dosage

The guidance dosage of Cemairin to achieve air content of $4.5 \pm 1.5\%$ in the concrete mix is 0.10 - 0.30 litre per 100 kg of cementitious material in the mix, including GGBFS, PFA or microsilica. We can go below or above the mentioned dose based on site concrete trials.

Representative trials should be conducted to determine the optimum dosage of Cemairin to meet the performance requirements by using the materials and conditions in actual use

Points to be considered that affecting air entrainment

Any variation in the following factors will cause change in the air content:

- Cement fineness.
- Concrete temperature.
- Sand grading.
- Mixture types.
- Compaction method.
- Carbon or organic impurities

Effects of Over Dosage

Over dosage of Cemairin will cause the following:

- Significant increase in air content which may cause slight reduction in the compressive strength.
- Slight increase in setting time.

Cemairin

Cleaning

Cemairin can be washed with fresh cold water.

Packaging

Cemairin is available in 25 litre pails and 200 litre bulks supply.

Storage

Cemairin has a shelf life of 12 months from date of manufacture if stored at temperatures between 2°C and 50°C.

Typical Test Results:

A control mix and test mix were produced using the following BS 5075, Part 2:1982 mix

Component	Content (kg/m ³)
OPC:	300
20 mm aggregate:	862
10 mm aggregate:	383
Grit sand:	670

Both mixes were produced to a target compaction factor of 0.90. The test mix contained Cemairin at 0.25% by weight of cement to obtain a degree of air entrainment to the DTP specification for road and bridge works of $4.5 \pm 1.5\%$

Mix	Doage Cemairin	Total water/cement Ratio	CF	Air Content (%)	Plastic Density (kg/m ³)	Average Compressive Strength (MPa)	
						7 days	28 days
Control:	0	0.59	0.90	1.0	2403	39.1	50.4
Test:	750 ml	0.54	0.90	5.1	2335	36.3	46.8

If these conditions are exceeded, DCP Technical Department should be contacted for advice.

Cautions

Health and Safety

Cemairin is not classified as hazardous material. Cemairin should not come into contact with skin and eyes. In case of contact with eyes wash immediately with plenty of water and seek medical advice promptly.

For further information refer to the Material Safety Data Sheet.

Fire

Cemairin is nonflammable.

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- ▲ Concrete admixtures.
- ▲ Surface treatments
- ▲ Grouts and anchors.
- ▲ Concrete repair.
- ▲ Flooring systems.
- ▲ Protective coatings.
- ▲ Sealants.
- ▲ Waterproofing.
- ▲ Adhesives.
- ▲ Tile adhesives and grouts.
- ▲ Building products.
- ▲ Structural strengthening.

Note:

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