



Expanplast* AEA

Air entraining agent

Uses

To produce air entrained concrete for increased durability, resistant to damage by frost and de-icing salts, and to improve the cohesion and workability of concrete mixes where poorly graded aggregates must be used, and in any situation where bleeding, segregation or sand runs occur. Typical applications include:

- Concrete roadways
- Bridge decks
- Airport runways and taxiways
- Other extensive areas of concrete exposed to potential frost damage

Advantages

- Provides concrete with resistance to freezing and thawing.
- Improves cohesion, reduces segregation and bleeding.
- Gives dense, uniform, close textured surface to concrete.
- Excellent air bubble stability.
- Consistent performance, even with changes in aggregate quality and ambient temperature.
- Effective in low workability concrete.
- Suitable for use in Middle East conditions.

Standards compliance

Expanplast* AEA complies with BS 5075:Part 2 and with ASTM C260 as an air entraining agent.

Description

Expanplast* AEA is a chloride-free admixture based on neutralised vinsol resin and is supplied as a dark brown solution. Expanplast* AEA acts on the interface of the cement/aggregate particles and mixing water to produce microscopic air bubbles evenly distributed throughout the concrete.

Properties

Appearance	:	Brown liquid
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Specific gravity	:	1.02 at 20°C
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The degree of air entrainment will be affected by a number of factors:

Sand content: The quantity of air entrained will increase with increasing sand content - typically from 4.5 to 6.0% for a sand content increase from 35% to 45%.

Cement fineness and content: The amount of air entrained reduces with an increase in cement fineness. Air content decreases with increasing cement content. A 1% air loss may be typical for a cement content increase of 90 kg/m³.

Organic impurities: Carbon can reduce the effectiveness of Expanplast* AEA. This does not normally create a problem, but care may have to be taken when using PFA, certain pigments or lignite bearing sands.

Concrete temperature: A temperature increase will reduce air content, e.g. a rise from 10°C to 32°C may halve the amount of air entrained. In practice, daily fluctuations are much smaller and do not cause significant variations.

Mixing and pumping: Variations of mixer type and transit time will change the level of air entrainment. 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: Entrained air will not be lost by normal vibration, though prolonged vibration is best avoided.

Low workability concrete: i.e. slumps of less than 25 mm or compacting factors between 0.80 to 0.85 may require an increased dosage of Expanplast* AEA in order to achieve the normal required air content.

Setting time: Negligible effect at normal dosage rates.

Compatibility: Expanplast* AEA is compatible with other Epanchem Fospak Expanplast* admixtures, but it is recommended that all admixtures be added to concrete separately.

Expanplast* AEA can be used with all types of Portland cements.

For advice on special cements, consult the technical department.



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Instructions for use

Dosage

The optimum dosage must be determined by site trials with the particular concrete mix. As a guide, a dosage of 0.40 litres/100 kg cement will generally give an air content $4\frac{1}{2}\% \pm 1\frac{1}{2}\%$ with cement contents of 300-350 kg/m³, normal dosage 0.20 - 0.80 liters/100 kg cement.

Overdosing

An overdose of double the recommended amount of Expanplast* AEA can result in slight increase in settling time and a reduction in compressive strength.

Dispensing

The correct quantity of Expanplast* AEA should be measured by means of a recommended dispenser. The company's technical department should be consulted regarding suitable equipment and its installation.

Expanplast* AEA should be added directly to the mixer and best results are obtained if added at the same time as the mixing water.

Curing

A Expancure* curing membrane should be used, or alternative curing methods such as polythene, water spray or wet hessian.

Cleaning

Spillages of Expanplast* AEA can be removed with water.

Technical support

Expanchem Fospak offers a comprehensive technical support service to specifiers, end users and contractors. It is also able to offer on-site technical assistance, an AutoCAD facility and dedicated specification assistance in locations all over the world.

Estimating - packaging

Expanplast* AEA is supplied in 25, 210 litre drums and bulk supply.

For larger users, storage tanks can be supplied.

Storage

Expanplast* AEA has a minimum shelf life of 12 months provided the temperature is kept within the range of 2°C to 50°C.

Precautions

Health and Safety

Expanplast* AEA is slightly toxic and must not be ingested. It is mildly alkaline and prolonged contact with the skin must be avoided. Splashes to the skin should be washed with water.

Any splashes to eyes should immediately be flushed with clean water and medical advice should be sought.

Fire

Expanplast* AEA is non-flammable.

Additional Information

Technical data and guidance can be provided on a wide range of admixtures and concreting aids including accelerators, retarders, waterproofers, mould release agents, surface retarders, workability aids and materials.



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* Denotes the trademark registered.

REGIONAL SALES OFFICES IN PAKISTAN:

Fospak (Pvt) Ltd.

Head Office

702, Business Avenue,
Block-6, PECHS., Shakra-e-Faisal,
Karachi, Pakistan.

Tel # +92-21-34528477, 34529859

Fax # +92-21-34522436

Email : info.khi@fospak.com.pk

Lahore Sales Office

2nd Floor Sarwar Shaheed Plaza,
Cavalry Ground,
Main Boulevard, Lahore Cantt,
Lahore, Pakistan.

Tel # +92-42-36675773

Fax # +92-42-36675838

Email : info.lhr@fospak.com.pk

Rawalpindi Sales Office

1st Floor,
Al-Harmin Plaza,
Main Murree Road,
Rawalpindi, Pakistan.

Tel # +92-51-39290592

Fax # +92-51-39290590

Email : info.isb@fospak.com.pk

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