EUNICEM SP1

Concrete and cement based grout plasticizer

Product Description

EUNICEM SP1 is a liquid superplasticizer or high range water reducing agent for concrete and cement based grouts. It is particularly useful for imparting extreme workability to concrete mixtures so that large or difficult pours can be made with little or no vibration. Alternatively, it can be utilized to effect large water reductions in concrete of normal workability to achieve higher early and subsequent strengths. Low shrinkage grouts can be obtained also by effecting water reductions without decreasing flow characteristics. EUNICEM SP1 is an extremely powerful deflocculating agent and operates by dispersing cement into its primary particles which dramatically increases the flow characteristics of the cement paste. EUNICEM SP1 is formulated from carefully selected raw materials and is manufactured under controlled conditions to give a consistent product. It is based on the soluble salt of a polymeric naphthalene sulphonate and conforms to Type A, D and F materials of ASTM designation C 494 and complies with BS 5075: Part 1 and BS 5075: Part 3.

Advantages

• Substantial increases in workability can be obtained by a direct addition of EUNICEM SP1 to a mixture having a slump in the range 50 - 100 mm. The magnitude of this increase is often such that the concrete becomes self-consolidating and little to no vibration is required to achieve a dense and void-free concrete.
• High strength mixtures can be produced at normal work abilities and cement contents, but at reduced water/cement ratios. The resultant concrete is of a dense and impermeable nature.
• At the recommended dosage, the effect on setting time is slight and will not normally affect Stripping times of formwork.
• Concretes containing EUNICEM SP1 have been extensively evaluated and have shown no disadvantage in terms of durability or mechanical performance.
• EUNICEM SP1 is particularly valuable in cement based grouts where a reduction in the water/cement ratio in the region of 20 - 25% can be obtained, resulting in higher strengths and reduced bleeding.

Typical Properties

• Appearance: Brown liquid
• Alkali Content: 0.5% as Na2O
• Specific Gravity: 1.18 ± 0 .02 at 20°C
• Air Entrainment: Nil
• Chloride Content: Nil, per BS 5075: Part 1: 1982
• Freezing Point: -5°C

Compatibility

With cements: EUNICEM SP1 can be used with all types of Ordinary Portland Cement. For use with other cements we recommend that you consult our technical department.
With other admixtures: EUNICEM SP1 should not be premixed with other admixtures. The performance of the material may be affected by the presence of other chemicals and we recommend that you consult our technical department in such circumstances.

Addition Rates Range

500 - 2500 ml per 100 kg cement. The performance of EUNICEM SP1 is best assessed after preliminary tests on site using the actual concrete under consideration to determine the optimum dosage and effect on properties such as ultimate compressive strength and early strength gain. As a guide to these trials, we recommend the above addition rates as a starting point.
EUNICEM SP1 is supplied ready for use.

It should be added to concrete mixtures either during the mixing process at the same time as the water or the aggregates or alternatively it should be added in its supplied form to a normal concrete mixture a few minutes before the pour is made. In the latter case extending the mixing for at least 2 minutes is recommended. When using flowing concrete, temporary increases in formwork pressure will occur and this should be taken into account at the design stage. Serious overdosing of EUNICEM SP1 will generally produce a concrete mixture of even greater workability and set retardation, but no increase in air entrainment. In cold weather, this retardation will be further increased. If intentional or accidental increases above the recommended addition rate are employed, care must be taken to allow for the effect on the stripping time of formwork. In such cases, however, provided the concrete is properly cured, the ultimate strength will generally be higher than normal concrete.

Dispensing
It is preferable that liquid admixtures for concrete be introduced into the mixer by means of automatic dispensing equipment. As with most concrete admixtures, EUNICEM SP1 must not be allowed to come in contact with other admixtures prior to being mixed into the concrete.

Health and Safety
For further information see the EUNICEM SP1 Material Safety Data Sheet, or consult European Concrete Additives.

Packaging
EUNICEMSP1 is supplied in 1000 liter returnable containers. Alternatively, bulk deliveries can be arranged.

Storage
EUNICEM SP1 should be stored above 0°C and protected from frost. If the product does freeze, it should be carefully thawed before mixing.
Storage Life in Manufacturer's Drums: 12 months from date of manufacture.
Storage Life bulk Storage: 12 months from date of delivery.

Technical Service
The Technical Department is available to assist you in the correct use of our products and its resources are at your disposal entirely without obligation.

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