ADVA® Flow 445

High Range Water Reducer / Superplasticiser

Product Description

ADVA® Flow 445 is a high performance liquid superplasticiser designed for the production of readymixed concrete.

Intended for use in a wide range of concrete applications and has been specially adapted for muse in mix designs containing manufactured sands or low quality aggregates. ADVA® Flow 445 reduces the stiffening effect often associated with such materials, resulting in improved slump and slump-flow retention.

ADVA® Flow 445 conforms to EN 934-2 and is manufactured under controlled conditions to give a consistent product.

Advantages

- ADVA® Flow 445 is especially suitable for producing high consistence concrete, with excellent rheology and consistence retention properties.
- Using suitable mix designs ADVA® Flow 445 can be used to achieve extended consistence life over normal superplasticisers, even with difficult cements.
- Minimal impact on setting time.
- Suitable for use in mix designs containing fly ash, ggbs or silica fume.
- ADVA® Flow 445 can be used to achieve high range water reduction, leading to considerable increases in compressive strength; impermeability and durability are correspondingly improved.
- Dose efficient.

Typical Properties

ADVA® Flow 445	
Appearance	Amber liquid
Specific Gravity (20 °C)	1.050
Alkali Content (eq.Na_2O)	< 0.7%
Chloride Content	Nil
Air Entrainment	1.0 %
Freezing Point	0 °C

Method Of Use

ADVA® Flow 445 is supplied ready for use.

When producing high consistence concrete or concrete of low w/c ratio it is recommended that ADVA® Flow 445 be added in its supplied form with part of the batching water, after the addition of the cement. After the addition of admixture, a further mixing cycle of at least two minutes is suggested to enable ADVA® Flow 445 to efficiently disperse the mix components.

Addition Rates

Range	200 ml -2500 ml per 100 kg cement
	0.20% -2.50% (v/w) by wt. of cement
As a guide to trials an addition rate of 0.50 - 1.00% volume by weight of cement is suggested.	
For advice and assistance with trials we recommend that you consult GCP Applied Technologies.	

As with most products of this type, the magnitude of the effect obtained with ADVA®Flow 445 is governed by the quantity of product used, w/c ratio, and specific nature of the concrete and constituent materials. It is necessary therefore to assess performance under site conditions using actual materials to determine optimum dosage and effect on plastic/ hardened concrete properties, such as cohesiveness, consistence retention, set characteristics, early rate of strength gain, ultimate compressive strength and shrinkage when these are of consequence.

Effects of Overdosing

The effect of overdosing ADVA®Flow 445 is a function of the degree of overdose.

When producing high consistence concrete, overdosing will increase the level of consistence and may induce the onset of segregation. Depending on the extent of the overdose, an increase in setting time may also occur, especially in low ambient temperatures and/or when employing Sulfate-resisting Portland cements or cement replacement materials.

Any situation where an overdose is suspected, careful inspection of the concrete in its plastic state should be conducted. Particular attention to consistency and cohesiveness prior to a decision on the suitability of the concrete for the particular application in question.

Dispensing

It is preferable that ADVA®Flow 445 should be introduced into the mixer by means of automatic dispensing equipment. Advice on dispensing can be obtained from GCP Applied Technologies.

Health and Safety

For further information on Health and Safety matters regarding this product we recommend that you consult the relevant Safety Data Sheet from GCP Applied Technologies. In line with general chemical handling precautions avoid contact with skin or eyes and protective gloves/goggles should be worn.

Storage and Packaging

ADVA®Flow 445 is supplied in both 15 or 205 non returnable drums and 1,000 litre totes. Alternatively, bulk deliveries can be arranged. ADVA®Flow 445 should be stored away from extremes of temperature and then protected from frost. If the product does become frozen, it should be carefully mixed after thawing out to restore it to its normal state. The product should be kept out of direct sunlight in shaded storage at all times.

Storage Life in Manufacturer 's Drums :
12 months from date of manufacture.

Storage Life in Bulk Storage:
12 months from date of delivery.

ADVA®Flow 445 is supplied in non-returnable drums or totes. Bulk deliveries can also be arranged upon request.

Technical Service

Our Technical Service department of GCP Applied Technologies is available to assist you in the correct use of our performance chemicals.

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gcpat.uk/solutions/products/adva-flow-445