

Sikament®-NN

High range water-reducing concrete admixture

Construction

Product Description

Sikament®-NN is a highly effective dual action liquid superplasticiser for the production of free flowing concrete or as a substantial water-reducing agent for promoting high early and ultimate strengths.

Sikament®-NN is chloride free according to BS 5075 and is compatible with all types of Portland Cement including Sulphate Resistant Cement (SRC).

Uses

Sikament®-NN is used as a superplasticiser in the production of free flowing concrete for:

- Slabs and foundations
- Walls, columns and piers
- Slender components with densely packed reinforcements
- Textured surface finishes

Sikament®-NN is also used as a water-reducing agent leading to high early and ultimate strength concrete for:

- Precast concrete elements
 - Prestressed concrete
 - Bridges and cantilever structures
 - Areas of concrete where formwork must be removed quickly or early loading applied
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Characteristics / Advantages

As a superplasticiser:

- Workability is greatly improved
- Increased placeability in slender components with packed reinforcements
- Decreases the amount of vibration
- Normal set without retardation
- Significantly reduces the risk of segregation

As a water-reducer:

- Water reduction up to 30% depending on dosage*
- 16 hour compressive strengths increased by up to 100%*
- 28 days strengths improved by up to 40%*

**(this will depend on dosage and mix design)*

Tests

Approvals / Standards

Sikament®-NN conforms to the requirements of ASTM C494-86 Types A & F and BS 5075: Part 3:1983.



Product Data

Form

Appearance / Colour Dark brown liquid

Packaging 208 litre drums and 1000 litre tanks

Storage

Storage Conditions / Shelf life 24 months from the date of production if stored in undamaged and unopened, original sealed containers, protected from direct sunlight and frost, at temperatures between +5°C and +30°C.

Technical Data

Chemical Base Naphthalene Formaldehyde Sulphonate

System Information

Application Details

Dosage Sikament[®]-NN can be used at the rate of 600 – 2,000 ml per 100 kg of cement depending on requirements concerning workability and strength. It is recommended that trial mixes be conducted to determine the exact dosage rate required.

Note:

For more specific requirements, advice is available from our Technical Service Department to determine the usage rate for optimum results.

Application Instructions

Dispensing Sikament-NN shall be dispensed neat into the premixed concrete after all the other concrete components, including total water, have been discharged into the pan-mixer or truck mixer.

Do not dilute Sikament[®]-NN.

Typical Performance

Variation in dispensing method of Sikament[®]-NN and effect on slump properties.

Mix	Dosage and when added	Slump (mm)
1	Without Sikament [®] -NN	50
2	1% Sikament [®] -NN with gauging water	120
3	1% Sikament [®] -NN (neat without gauging water) added immediately after making original concrete and further mixing for 1 minute	150
4	1% Sikament [®] -NN (neat without gauging water) added ½ hour after making up concrete and further mixing for 1 minute	160

■ Concrete consistency

- Measured in terms of slump to BS 1881: Part 102
- With Sikament[®]-NN added at different times

■ Cement OPC (Type 1)

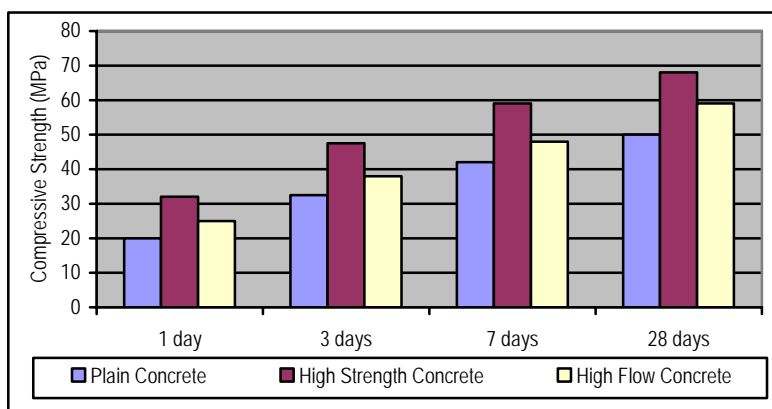
■ Granulometry 0 – 32 mm approximately to curve B of SIA Standard 162

■ W/C 0.54 for all mixes

Comparative strength of plain concrete against Sikament[®]-NN high strength concrete

and Sikament[®]-NN flowing concrete with constant cement content.

Mix Design		Plain Concrete	Sikament [®] -NN High Strength Concrete	Sikament [®] -NN High Flow Concrete
Cement, Type 1	<i>kg</i>	450	450	450
W / C Ratio		0.45	0.36	0.45
Sikament [®] -NN	<i>litres</i>	-	4.5	4.5
Slump	<i>mm</i>	80	100	240
Temperature	<i>°C</i>	31	31	31
Compressive Strength	<i>MPa</i>			
- 1 day		20.0	32.0	25.0
- 3 days		32.5	47.5	38.0
- 7 days		42.0	59.0	48.0
- 28 days		50.0	68.0	59.0



Value Base

All technical data stated in this Product Data Sheet are based on laboratory tests. Actual measured data may vary due to circumstances beyond our control

Health and Safety Information

For information and advice on the safe handling, storage and disposal of chemical products, users should refer to the most recent Material Safety Data Sheet (available on request) containing physical, ecological, toxicological and other safety-related data.

Legal Notes

The information, and, in particular, the recommendations relating to the application and end-use of Sika products, are given in good faith based on Sika's current knowledge and experience of the products when properly stored, handled and applied under normal conditions in accordance with Sika's recommendations. In practice, the differences in materials, substrates and actual site conditions are such that no warranty in respect of merchantability or of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any written recommendations, or from any other advice offered. The user of the product must test the product's suitability for the intended application and purpose. Sika reserves the right to change the properties of its products. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users must always refer to the most recent issue of the local Product Data Sheet for the product concerned, copies of which will be supplied on request.



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