

## Technical Datasheet

# X-Mix SPN

## High range water reducing/superplasticizing admixtures.

### Product Description

X-MIX SPN is a high effective dual liquid superplasticizer for producing free flowing concrete, manufactured from blend of high grade sulphonate naphthalene, a substantial water reducing agent for promoting early and ultimate strengths.

X-MIX SPN is suitable for use with all types of ordinary Portland cements, sulfate resisting Portland cement and pozzolanic materials such as PFA and Microsilica. This product is suitable for tropical and hot climatic conditions.

### Advantages

- Improved workability without increased water content.
- Higher ultimate strengths.
- No adverse shrinkage effect.
- Enhances durability.
- Reduced permeability.
- Minimizes bleeding and segregation.
- Non-toxic.
- Chloride free.

### Uses

X-Mix SPN is suitable for use as a super plasticizer in the production of free flowing concrete such as slabs, foundations, walls, columns and piers.

X-Mix SPN is suitable for use as a water-reducing agent for producing early strength concrete.

The product improves the effectiveness of the water content of a concrete mix by reducing surface tension. It is particularly suitable for pre-stressed concrete that require early strength and where very low permeability is required therefore greatly improving the durability. It is also used to produce flowing, easy to compact concrete.

### Specification Compliance

- EN 934-2 T 3.1 / 3.2.
- ASTM C 494: Type A & F.
- EN 480-10.
- EN 480-12.
- ASTM D 2111.

### Packaging

20 liter jenkins, 210 liter drums, 1000 liters Bulk Tanks.

### Product Properties

<b>Consistency</b>	Liquid
<b>Color</b>	Dark brown
<b>Specific Gravity according to ASTM D 2111 (g/cm<sup>3</sup>) @25° C</b>	1.120±0.01
<b>p<sup>H</sup></b>	>6
<b>Main action</b>	Water reduction/ improved workability.
<b>Collateral action</b>	Retarding of hydration when used in high dosages.(G Type)
<b>Classification according to EN 934-2</b>	High range water reducing/ super plasticizing admixtures, T 3.1 / 3.2
<b>Classification according to ASTM C494</b>	Type A & F
<b>Classification according to ASTM C1017</b>	Type I
<b>Water reduction</b>	≥12 % according to EN 934-2 to almost 15%
<b>Chlorides soluble in water according to EN 480-10 (%)</b>	≤ 0.1 (absent according to EN 934-1)
<b>Alkali content (Na<sub>2</sub>O equivalent) according to EN 480-12 (%)</b>	< 55 g
<b>Nitrate content</b>	Nil

### Shelf Life

X-Mix SPN has a minimum shelf life of 12 months under shaded area. Must be protected from direct sunlight and frost.

### Dosage

Dosage is 0.2 – 4 liter/100kg of cement @ 25° C, including any pozzolanic materials and cement replacements.

The actual dosage rates and water reduction rate are dependent on the :

- 1- Cement rate in mix design.
- 2- Quality of cement & aggregates.
- 3- Water/Cement-ratio.
- 4- Ambient temperature (Weather).

Therefore, it is advisable to carry out trial mixes.

**Dosages outside this range can be used to produce particular mix requirements, provided that extensive trial mixes and laboratory have been conducted.**

### Dispensing

X-Mix SPN should be added to the concrete while being mixed using a suitable dispenser. Add to the concrete with the mixing water to obtain best results.

## Overdosing

When accidental overdosing occurs, the ultimate strength of the concrete will usually be increased. During this period the concrete must be kept moist in order to prevent premature drying out.

## workability

workability loss is dependent on temperature, the type of cement, the nature of aggregates, the method of transport and initial workability, it is strongly recommended that concrete should be properly cured, particularly in hot and dry climates

## APPLICATION PROCEDURE

add X-Mix SPN into the mixer after the other ingredients (water, cement, aggregates). X-Mix SPN is most effective if added when cement and aggregate granules are already wet, and least effective when the admixture is mixed with dry solids which partially absorb it (especially if porous). It is advisable to begin adding the admixture with an automatic dispenser after adding at least, half of the batching water required.

## Compatibility

X-Mix SPN is compatible with a wide range of admixtures used in the same concrete mix. All admixtures should be added to the concrete separately and must not be mixed together prior to addition. The resultant properties of concrete containing more than one admixture should be assessed by trial mixes.

## Clean Up

Clean up spillages of by absorbing onto sand and transferring to suitable containers. Any residue should be washed down with large quantities of water. The disposal of excess or waste material should be carried out in accordance with local regulations.

## Health and Safety

**This product is for industrial use only by trained operatives. It is potentially hazardous if not used correctly. Please refer to the Material Safety Data Sheet (MSDS) prior to the purchase and use of this product. The MSDS can be obtained via our website [www.ncc.com.eg](http://www.ncc.com.eg).**

## Authorized Technical Specialist

Please note that only NCC X-Calibur Authorized Technical Specialists (ATSO) are permitted to change any of the information in this data sheet or to provide written recommendations concerning the use of this product. Visit [www.ncc.com.eg](http://www.ncc.com.eg) for a full list of NCC X-Calibur ATSOs.

## Datasheet Validity

NCC X-Calibur makes modifications to its product datasheets on a continuous basis. Please check the datasheet update section on [www.ncc.com.eg](http://www.ncc.com.eg) to ensure you have the latest version.

## Warranties

NCC X-Calibur supplies products that comply with the properties shown on the current datasheets. In the unlikely event that products supplied are proved not to comply with these properties, then we will replace the non-compliant product or refund the purchase price.

NCC X-Calibur does not warrant or guarantee the installation of the products as it does not have control over the installation or end use of the products. Any suspected defects must be reported to X-Calibur in writing within five working days of being detected. NCC X-Calibur Construction Chemistry Inc. **makes no warranty as to merchantability or fitness for a particular purpose and this warranty is in lieu of all other warranties express or implied.** NCC X-Calibur Construction Chemistry Inc. shall not be liable for damages of any sort including remote or consequential damages, down time, or delay.

**NCC**

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### Quality Statement

All Products manufactured by NCC X-CALIBUR or imported from X-CALIBUR companies world-wide are manufactured to procedures certified to conform the quality, environment, systems described in the ISO 14001:2004. ISO 9001:2000.



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