

Nanoment® HP 1045 W

High-Range Water Reducing / Superplasticizing Chemical Admixture for Concrete

Product Definition

Nanoment HP 1045 W is a polycarboxylate based, high-range water reducer / superplasticizer type of chemical admixture for concrete. Nanoment HP 1045 W permits a high reduction in water content of a given concrete compared to a reference concrete mixture without chemical admixture. Nanoment HP 1045 W increases slump/flow of the mixture having the same amount of mixing water with the reference non-plasticized concrete.

Use

Nanoment HP 1045 W is recommended for use in the applications below.

- Heavily reinforced concrete structural sections requiring concrete mixtures with high workability and consistency classes.
- Ready-Mixed concrete production requiring high plasticity and less workability loss.
- In applications requiring broad-range concrete design for strength enhancement, improved workability and minimizing cement content.

Advantages and Properties

- Nanoment HP 1045 W provides more homogeneous distribution of cement particles mainly due to the steric effects of its side chains.
- Reduces the agglomeration of cement particles and improves the flowability.
- Provides significant increase in workability without increasing the quantity of mixing water and hence procures considerable convenience in mixing, transporting, placing and compaction of fresh concrete.
- Improves the strength and durability by ensuring that the specified target consistency is achieved with lower water to binder ratios.
- Provides high workability even in low water to binder ratios.
- Nanoment HP 1045 W is an appropriate type of admixture for concrete design aiming at reducing cement content to the allowed limits. High level of plasticizing capacity of Nanoment HP 1045 W enables more economical concrete design with less cement content. Concretes designed in this way may be beneficial with their lower shrinkage and heat of hydration characteristics.
- Enhances early strength as compared to a reference mixture having the same level of consistency without chemical admixture.
- It is non-chloride admixture and does not contain any compounds that may cause corrosion of reinforcing steel.

Application Details, Suggestions and Warnings

- Nanoment HP 1045 W should be added to the mixing water. As an alternative way, it can be added to the fresh mixture together with the 2/3 of mixing water after obtaining the fresh mixture with the 1/3 of the mixing water. In case of the direct addition to the fresh mixture, additional mixing should be applied. Nanoment HP 1045 W should not be added to the dry mixture.
- As the dosage of the chemical admixtures is greatly influenced from cement type, properties of the concrete ingredients and mix design, it is recommended that the optimum dosage of admixture should be determined on trial batches.
- Nanoment HP 1045 W is generally compatible with the Portland cement types described in TS EN 197-1. In addition, it can be used in concrete mixes containing mineral admixtures such as silica fume, fly ash and ground granulated blast furnace slag. However, the presence of mineral admixtures in the mixture is greatly influence the required dosage of the admixture for a specified target. The optimum dosage of Nanoment HP 1045 W should be determined on trial batches.

! Nanoment HP 1045 W is not compatible with sulfonated naphthalene and sulfonated melamine based chemical admixtures. There is no known incompatibility with the other type of chemical admixtures and can be used with the others in the same mixture. In case of the combined usage, the different types of chemical admixtures should not be mixed together and be used separately. Please contact R&D department of Lyksor for further information.

Recommended Dosage

The recommended dosage rate of Nanoment HP 1045 W for general concreting operations is between 0.8 % - 1,5 % of the weight of binding material (cement + mineral admixture). The maximum water reduction property increases as the dosage increases. However, it should be considered that the required dosage varies with the type and amount of cement and mineral admixtures, water to binder ratio, properties of the other ingredients and the ambient temperature. Exceeding the recommended or determined dosage may cause significant segregation and setting time increase. In addition, the required dosage of Nanoment HP 1045 W to achieve a target performance will be different for each concrete mixture. The appropriate dosage should be determined on trial batches as it will not cause any segregation and/or undesirable side effects. It is known that there is a significant effect of C₃A and SO₃ content and fineness of cement on the appropriate dosage of Nanoment HP 1045 W

Technical Properties

Colour and form	Brown – Liquid
Chemical base	Polycarboxylate
Density (kg/lt)	1.06 – 1.10 (at +20 °C)
Chloride ion content	Max 0.1% - Chloride free acc. to EN 934-2
Alkali content	Max. 5%
pH	3-7
Conformity	TS EN 934-2 Table 11.1 – 11.2

Cleaning of Tools

Concreting tools contact with Nanoment HP 1045 W can be easily cleaned with water.

Packaging

25 kg drum

1000 kg IBC

Bulk delivery

Storage and Shelf Life

Shelf life of Nanoment HP 1045 W is 12 months when stored in its original package and recommended storage conditions. Nanoment HP 1045 W should be stored in dry conditions between +5 °C and +35 °C. It should be protected from direct sunlight and frost

Security and Health

In case of contact with skin, wash with clean water. In case of contact with eye, wash with clean water. Eye contact should be medical consulted immediately. For further information please see Material Safety Data Sheet (MSDS).

Legal Liability

The technical recommendations in this product data sheet are based on the results obtained from experimental studies carried out in the R&D laboratories of LYKSOR and may not be applicable to different concrete mixtures. All customers and users are required to determine the appropriate LYKSOR products for their intended use and to test the suitability of LYKSOR product for their application. Contact LYKSOR for the appropriate product selection and usage details. LYKSOR is not responsible for the improper usage of the products.