

# SUPERFLUID 21MS EKO

*Superplasticizer for concrete, based on polycarboxylates  
In compliance with: EN 934-2 T11.1&T11.2*

## FIELD OF APPLICATION

Superplasticizer used for production of economical concrete with high performances;  
Superfluid 21MS EKO enables high water reduction, as well as production of concrete with high consistency class;  
Superfluid 21MS EKO is used for production of concrete applied with pump, concreting of densely reinforced sections, concrete with high early and final strength characteristics;  
With the proper use of Superfluid 21MC EKO, concrete mixes can be designed with an optimum ratio between price and performance.

## PROPERTIES

- Water reduction above 18%
- High early and final strength characteristics;
- Increased the compactness and water-tightness of concrete;
- Improves the physical and mechanical properties of the concrete;
- Increased resistance to ice and salt;
- Increased durability of concrete;
- Increased resistance to carbonation;
- Increased resistance atmospheric influences;
- Easy concrete application;

## TECHNICAL FEATURES

PROPERTY	METHOD	DECLARED VALUE
Appearance	Visual	light yellow liquid
Density (at 20°C)	ISO 758	(1.06±0.02) g/cm <sup>3</sup>
pH-value (at 20°C):	ISO 4316	4-6
Chlorides content:	EN 480-10	≤0.1%
Alkali content:	EN 480-12	≤2.0%

## DOSAGE AND PERFORMANCE:

Optimal dosage of Superfluid 21MS EKO is 0,6% to 1,5% from cement quantity in concrete mixture. These dosages allow water reduction from 10% to 18%.The optimum dosage of SUPERFLUID 21MC EKO is best determined by conducting laboratory or industrial testing.

In cases when concrete is applied at high ambient temperatures or prolonged transportation of concrete is required, fresh concrete should be prepared with a higher class of consistency - S4 or S5.

At normal temperatures (up to 25°C), concrete produced with Superfluid 21MS EKO, can be transported and applied with pump in period up to 90 minutes.

At increased ambient temperatures, or in cases when production, transport and casting of concrete last longer than 90 minutes, in addition to Superfluid 21MS EKO, it is recommended to use set-retarding admixture USPORUVAC D2, with dosage that depends on the site conditions.

Dosing of admixtures is performed manually or automatically during the concrete production. Best effect is achieved in cases when Superfluid 21MS EKO is applied with 20% to 30% from required water quantity at previously prepared mixture of aggregate, cement and 70% to 80% from required water quantity; Duration of mixing of concrete when Superfluid 21MS EKO is used should not to be shorter than 90 seconds.  
**Effect from overdosing:** Overdosing of Superfluid 21MS EKO can cause segregation of fresh concrete.

## COMPATIBILITY

Superfluid 21MC EKO is compatible with number of additives from ADING production program, such as set accelerators, set-retarders, admixtures for winter concreting, waterproofing admixtures, air-entraining admixtures. If two or more admixtures are used in the concrete mixture, it is necessary to make preliminary tests. Various additives are dosed separately i.e. they are not to be inter-mixed prior to application in the concrete mixture. Superfluid 21MS EKO is compatible with all types of Portland cement, including sulphate-resistant cements. Superfluid 21MS EKO is not compatible and should not be used in combination with the admixtures that contains poly-naphthalene sulphonate, such as: Fluiding, Superfluid, Superfluid-M1, Superfluid-M1M, Superfluid-T, Hidrofob Fluid and Hidrofob-T.


## PACKAGING

Plastic cans: 5 and 20 kg  
Plastic barrels: 200 kg  
Containers: 1000 kg

## STORAGE

In the original packaging at temperature between 5°C and 35°C. Shelf life: 12 months.

## CE MARKING

 2032	
ADING AD Skopje, Novoselski pat (ul 1409) br.11 1060 Skopje, North Macedonia 17 GABF002/4 EN 934-2:2009+A1:2012 <b>SUPERFLUID 21MS EKO</b> Set retarding/high range water reducing/superplasticizing admixture for concrete EN 934-2:T11.1&T11.2	
Chloride ion content	≤ 0,1% by mass
Alkali content	≤ 2,0% by mass
Corrosion behaviour	Contains components only from EN 934-1:2008, Annex A.1

**Health hazard:** Superfluid 21MC EKO does not contain toxic substances, however attention must be paid to avoid contact with the skin, eyes or not to be swallowed. In case of contact to skin or to eyes, rinsing is required with clean running water. If swallowed, medical assistance must be immediately requested. Additional formations are provided in Material Safety Data Sheet for the material.

**Fire:** Superfluid 21MS EKO is a non-flammable liquid. Additional formations are provided in Material Safety Data Sheet for the material.

**Cleaning and deposit:** Superfluid 21MC EKO is cleaned with water. Old and used packaging must be disposed according to local regulations for that type of waste. Additional formations are provided in Material Safety Data Sheet for the material.