

# SUPERFLUID 21F

*Admixture for concrete, Superplasticizer - accelerator hardening*

*In compliance with: EN 934-2: T7*

## FIELD OF APPLICATION

Preparation of concrete with extremely high initial and final strength characteristics;  
Production of prefabricated concrete elements;  
Fast release of formwork;  
Superfluid 21F enables high water reduction, as well as production of concrete with high consistency class;  
Superfluid 21F is used for production of concrete for concreting of densely reinforced sections;  
Preparation of concrete with high degree of waterproofing and resistance to atmospheric influences of aggressions;  
Preparation of concrete intended for concreting under water;

## PROPERTIES

- Water reduction above 25%;
- It accelerates the process of hydration of the cement and development of high early (8 to 12 hours) and final strengths;
- Increased the compactness and water-tightness of concrete;
- Improves the physical and mechanical properties of the concrete;
- Increased resistance to ice and salt debris
- Increased durability of concrete;
- Increased resistance to carbonation;
- Increased resistance atmospheric influences;
- Easy concrete application;

## TECHNICAL FEATURES

PROPERTY	METHOD	DECLARED VALUE
Density (at 20°C)	ISO 758	(1.03±0.02) g/cm <sup>3</sup>
pH-value (at 20°C):	ISO 4316	6±1
Chlorides content:	EN 480-10	≤0.1%
Alkali content:	EN 480-12	≤2.0%

## DOSAGE AND PERFORMANCE:

Optimal dosage of Superfluid 21F is 0,2% to 1,5% from cement quantity in concrete mixture. These dosages allow water reduction from 5% to above 20%.

The optimum dosage of Superfluid 21F is best determined by conducting laboratory or industrial testing.

At normal temperatures (up to 25°C), concrete produced with Superfluid 21 EKO, can be transported and applied with pump in period up to 60 minutes.

At extremely high ambient temperatures, or in cases when production, transport and casting of concrete last longer than 120 minutes, in addition to Superfluid 21F, it is recommended to use set-retarding admixture USPORUVAC-D2, with dosage which depends in the specific conditions. Alternatively, in these conditions it is recommended to use superplasticizers with consistency retention effect, such as Superfluid 21M EKO or Superfluid 21M1M EKO.

Dosing of admixtures is performed manually or automatically during the concrete production. Best effect is achieved in cases when Superfluid 21F is applied with 20% to 30% from required water quantity at previously prepared mixture of aggregate, cement and 80% from required water quantity. Duration of mixing of concrete when Superfluid 21F is used should not to be shorter than 90 seconds.

**Effects of overdose:** Overdosing of Superfluid 21F can cause segregation of fresh concrete.

## COMPATIBILITY

Superfluid 21F is compatible with number of admixtures 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 admixtures are dosed separately i.e. they are not to be inter-mixed prior to application in the concrete mixture. Superfluid 21F is compatible with all types of Portland cement, including sulphate-resistant cements. Superfluid 21F 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 and Hidrofob-T.

## PACKAGING

Plastic cans: 5 and 24 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	
<b>ADING AD SKOPJE</b> Novoselski pat (street 1409) No.11, 1060 Skopje, Macedonia 08 2032-CPR-08.40B	
<b>EN 934-2:2009+A1:2012</b>  <b>SUPERFLUID 21F</b> Admixture for concrete, set retarder  <b>EN 934-2: T3.1 &amp;3.2</b>	
<b>Maximum chloride ion content:</b>	<b>0.1%</b>
<b>Maximum alkali content:</b>	<b>2.0%</b>
<b>Corrosion behavior:</b>	<b>Contains components only only from EN 934-1:2008, Annex A.1</b>

**Health hazard:** Superfluid-F 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-21F is a non-flammable liquid. Additional formations are provided in Material Safety Data Sheet for the material.

**Cleaning and deposit:** Superfluid-21F 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.