

# INGUNIT TS EKO

*Alkali free accelerator of setting for concrete and mortar  
In compliance with: EN 934-5, T2*

## FIELD OF APPLICATION

Preparation of Sprayed concrete - *Shotcrete* for construction of primary lining in tunneling (wet shotcrete treatment), stabilization of slopes, mining etc;

Preparation of Sprayed mortar used for reparation of concrete elements with curved and irregular forms, such as domes, etc.

With carefully dosing it can also be used as admixture for controlled acceleration of setting in classical concretes, usually for production of prefabricated concrete elements;

## PROPERTIES

- Intensive acceleration of setting concretes and mortars;
- Getting high early strength characteristics;
- Minimal loss of the final strength characteristics;
- Improves thixotropy and adhesion of concrete and mortar mixtures;
- Enables application of sprayed concrete on vertical, inclined and ceiling surfaces;
- Reduces the rebound material during spraying;
- Doesn't cause underground pollution due to alkali leaks;

## TECHNICAL FEATURES

Appearance	Visual	white suspension
Density (at 20°C)	ISO 758	(1.39±1.45) g/cm <sup>3</sup>
pH-value (at 20°C):	ISO 4316	3±1
Chlorides content:	EN 480-10	≤0.1%
Alkali content:	EN 480-12	≤1.0%
Dynamic viscosity	/	<400 cP

## DOSAGE AND PERFORMANCE:

For production of Shotcrete, Ingunit TS EKO's recommended dosage is 3 to 9%, in relation to cement mass. Dosing percentage depends on the acceleration time which needs to be achieved, consistency of concrete, type and quantity of cement, temperature conditions, rock category, inclination etc. For construction of primary tunnel lining, dosage for sprayed concrete used for concreting the calotte section of the tunnel is usually 6-7%, while for the tunnel bottom part dosing is lower than 4%. Ingunit TS EKO is added automatically, with admixture pump, at the exit part of the hose which is used for spraying. The metal parts of the pump must be corrosion resistant. The temperature of fresh sprayed concrete should be higher than +12°C. At lower temperatures it is necessary to increase the dosage of the admixture to achieve the same binding of concrete.

Prior to its application, it is necessary to perform preliminary test in order to define dosage in correlation with time of setting, in real temperature conditions. The information submitted in this Technical Data Sheet are based on laboratory tests and may vary depending on the application conditions. When using fresh cement, better results are achieved in terms of setting time and the development of early strength characteristics.

When used as accelerator for classical concretes, recommended dosage is 1-2%, and Ingunit TS EKO is added immediately prior to concrete casting directly into the ready-mixed concrete, mixing and placement are fast, since there is a risk of quick setting. In this case, concrete pump should not be used.

**Effects of overdose:** Overdosing Ingunit TS EKO can cause fast setting of concrete, and decrease of final strength characteristics. For production of classical concrete, overdosing Ingunit TS EKO can cause setting of concrete in the mixer or during pumping, which can cause damage to the equipment.

## COMPATIBILITY

Ingunit TS EKO is compatible with a number of admixtures of ADING production program. If in the concrete mixture two or more admixtures are used, it is necessary to perform preliminary tests. Different admixtures are batched separately, and they are not intermixed with each other prior to insertion into the concrete mixture. Ingunit TS EKO is compatible with all types of Portland cements and sulfate resistant cements. It is recommended that Ingunit TS EKO should be used in a combination with a superplasticizer from the group Superfluid-21 EKO.

## PACKAGING

Containers:1400 kg

## STORAGE

In the original packaging, at temperature between 5°C and 35°C. Shelf life: 6 months.

Before use it is necessary to stir with compressed air until homogenization (sedimentation is possible which can't always be detected visually). During prolonged storage, it is advisable to keep the containers closed in order to avoid water loss and the appearance of a "film" on the surface of the liquid. In the event of segregation (separation) of the admixture, the suspension must be homogenized before use.

At temperatures below 10°C there is a sharp increase in the viscosity of the material due to which the storage tanks need to be equipped with heating equipment.

## CE MARKING

<b>CE</b> 2032	
ADING AD Skopje, Novoselski pat (ul 1409) br.11 1060 Skopje, North Macedonia 14 GAGD001/1 EN 934-5:2007 <b>INGUNIT TS EKO</b> Non-alkaline set accelerating admixture for sprayed concrete EN 934-5:T2	
Chloride ion content	<b>≤ 0,1% by mass</b>
Alkali content	<b>≤ 1,0% by mass</b>
Corrosion behaviour	<b>Contains components only from EN 934-1:2008, Annex A.1</b>

**Health hazard:** Ingunit TS EKO does not contain toxic substances, contact with the skin and eyes should be avoided, and material should not 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:** Ingunit-TS EKO is a non-flammable liquid. Additional formations are provided in Material Safety Data Sheet for the material.

**Cleaning and deposit:** Ingunit TS 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.