



Sigunit® P1AF Shotcrete Admixture

Description	Sigunit® P1AF is a water-soluble, alkali free and high-performance shotcrete accelerator in powder form. When dissolved in water it produces an alkali free set accelerator for wet sprayed shotcrete.
Where to Use	Sigunit® P1AF is suitable for wet-process shotcreting. The principle applications for Sigunit®- P1AF are: <ul style="list-style-type: none">■ Support at the face whilst advancing tunnels and mines.■ Rock- and slope stabilisation.■ High quality lining shotcrete.
Advantages	The most outstanding advantages of Sigunit®-P1AF shotcrete accelerator are: <ul style="list-style-type: none">■ Alkali-free, avoiding additional leaching of alkalis and pollution of ground and surface water.■ When correctly used, marginal reduction of shotcrete strength.■ Reduction of rebound.■ Easier overhead spraying by improved bond of shotcrete to rock and concrete.■ Reduction of dust formation.■ Chloride-free, suitable for steel reinforced shotcrete and substrates.■ Easy to dissolve on site in time for shotcreting.■ Converting powder to liquid on site, the temperature will rise to approx. 40°C (104°F); the warm solution will increase the accelerator effect considerably.■ Lower cost of logistics
Technical Data	
Packaging	25 kg (55 lb) bags and 1000 kg (2,200 lb) tote bags
Colour / Form	White / Powder
Storage	Dry, between 5° - 30°C (41° - 86°F)
Shelf Life	In original and unopened, packaging at least 2 years.
Properties at 23°C (73°F) and 50 % R.H.	
Dry matter content in solution	45%
Density (of solution)	1.45kg/L
pH	~ 3.0
Alkali content (Eqv. Na₂O), weight - %	< 0.80
Water soluble chloride (Cl), weight - %	< 0.15
Dosage - % by weight of cement	2-8 (when in 45% solution)
How to Use	
Dosage	The exact dosage must be determined by preliminary testing. For shotcrete layers up to 15 cm (6 in.) thickness in one pass, the dosage of Sigunit®-P1AF liquid, should be between 3 to 6% by weight of the cement content. Sigunit®-P1AF is dosed by means of a peristaltic pump, such as Aliva AL-403 or similar. Optimal atomisation of Sigunit®-P1AF liquid and its mixing with the shotcrete mix must be ensured.
Powder to Liquid Conversion	Powder to water ratio is 1 kg Sigunit-P1AF powder to 1.23 ltr. water Add the predetermined mix water to a mixing vessel. The water temperature must be at least 15°C (59°F). Start the mixer and add slowly the Sigunit®-P1AF until dissolved. Mix for another 60 min. Note: The temperature of the liquid will rise to approx. 40°C (104°F) during mixing.



Construction

Application	<p>The concrete mix to be sprayed is usually prepared with the following:</p> <ul style="list-style-type: none">■ 8-16 mm aggregates■ Sikatard® 930 set control admixture■ Viscocrete® 2100 Superplasticizer admixture■ Sikacrete® 950 DP Silica Fume <p>Concrete temperatures should not be lower than 15°C (59°F) (especially in cases of thick shotcrete layers). Lower temperatures will require higher dosages.</p>
Clean up	<p>Rebound and other shotcrete waste accelerated with Sigunit®-P1AF can be disposed of in the same way as non-accelerated shotcrete waste. Neat accelerator must be disposed of as special waste according to local regulations.</p>
Limitation	<ul style="list-style-type: none">■ When using sulphate-resistant types of cement, strength development may be slower.■ Sigunit®- P1AF is not compatible with other Sigunit® accelerators■ The conveyance hose for the accelerator must be thoroughly cleaned before using Sigunit®-P1AF.■ Metal parts of the dosage equipment and/or pump coming into direct contact with Sigunit®-P1AF must be of stainless steel.■ The use of Sigunit®-P1AF requires skilled and technically correct installation of dosing and conveying equipment. Please consult our Concrete Unit for further information. <p>NOTE: The set-accelerating effect depends on cement content, cement age, cement type, temperature of shotcrete and substrate as well as on layer thickness and shotcreting method.</p>
Caution	<p>Avoid contact with skin and eyes. Wear appropriate protective gloves and eye protection (goggles / face shield). In case of contact with skin or eyes, thoroughly rinse with plenty of water.</p>

For more information, consult Sika Material Safety Data Sheet.

**KEEP OUT OF REACH OF CHILDREN
FOR INDUSTRIAL USE ONLY**

The information, and in particular, the recommendations relating to the application and end-use of Sika products, are given in good faith based on Sika's current knowledge and experience of the products when properly stored, handled and applied under normal conditions, within their shelf life. In practice, the differences in materials, substrates and actual site conditions are such that no warranty in respect of merchantability or of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any recommendations, or from any other advice offered. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users should always refer to the most recent issue of the Technical Data Sheet for the product concerned, copies of which will be supplied on request or can be accessed in the Internet under www.sika.ca.

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Sigunit® P1AF
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