



# PENTARAPID CR 1001

## Setting accelerator for Portland cement and its mixtures

Technical Data Sheet September 2015

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### DESCRIPTION

**Pentarapid CR 1001** is an accelerating agent in powder form, composed of a mixture of organic and inorganic salts. The product allows managing setting and hardening times of all the mixtures containing Portland cement and/or aluminous cement. Its accelerating effect depends on the employed dosage.

### FEATURES

**Pentarapid CR 1001** works on setting and hardening times, fastening the formation of aluminate and of tricalcium silicate.

Depending on its dosage and of the composition of the mixture, it is possible to have setting times ranging from few to 45 minutes, with a very fast development of compression strengths (2 - 3 N/mm<sup>2</sup> after 20 minutes from the mixing).

Contrary to what happens with such strong accelerators, **Pentarapid CR 1001** does not penalise final resistances. On the contrary, it enhances them, allowing reducing thicknesses, especially in consolidation and gunite mixtures.

Because of this, the dosage of **Pentarapid CR 1001** must be calculated every time, depending on the specific needs and on the composition of the mixture.

Open times of the obtained mixtures can be modified by adding **Pentatard AC** and **Pentatard AT**, specific retarding agents in powder form.

Although the efficacy of **Pentarapid CR 1001** show similar results on the different Portland cement we tested, when it is used for accelerating aluminate or sulphoaluminate cements its results vary a lot depending on the cement. Depending on the quality of the aluminate or sulphoaluminate cement used, **Pentarapid CR 1001** can show no results (in this case, the Portland cement effect of the mixture prevails) or, on the contrary, it can show synergistic effects, thus allowing reducing the quantity of aluminate cement needed.

**Pentarapid CR 1001 allows stabilizing and maintaining the original setting times of mixtures.**

### USE

**Pentarapid CR 1001** is usually employed for managing setting and hardening times of the mixtures containing Portland cement and/or aluminate or sulphoaluminate cement, such as quick setting cements, quick setting mortars, mortars with controlled hardening, injection mortars and consolidation mortars, gunite mortars, fluid mortars, quick tile adhesives, etc....

In tile adhesives, the high percentage of resin and cellulose already gives an elevated retard to the system. In these cases, and depending on the employed Portland cement, it can be necessary to add up to 5% of **Pentarapid CR 1001** on the total of the mixture in order to obtain a starting time of the setting process of a tile adhesive lower than 3 hours.

In wet mixtures, **Pentarapid CR 1001** has to be preventively dispersed at the dry state preferably in the cement.

For the gunning of rock, **Pentarapid CR 1001** is **dry mixed** together with the other components, or it is added to the other wet components in the last part of the spraying tool.

	Data	Method
<b>TECHNICAL DATA</b>		
<b>State:</b>	Powder	Visual
<b>Colour:</b>	Light grey	Visual
<b>Bulk Density:</b>	0.700 ± 0.100	IST. 10.07
<b>Granulometry:</b>	Min. 95% < 0.600 mm	IST. 10.09
<b>Potential of hydrogen (pH):</b>	10.0 – 11.0	IST. 10.05
<b>Humidity:</b>	Max 4.0%	IST. 10.04
<b>Water solubility:</b>	Partially soluble	IST. 10.21

**DOSAGE**

The dosage of **Pentarapid CR 1001** normally ranges from 1.5 to 6.0% on the cement, depending on the desired result.

Dosages higher than 3% can be used on a case-by-case basis, since they significantly increase setting time. Such dosages can be useful only to obtain a quick setting mortar with very high mechanical strengths at very short seasonings.

Different dosages can be employed depending on the needs, after preliminary tests.

**STORAGE AND VALIDITY**

If it is stored in a dry place and in the original bags kept perfectly closed, **Pentarapid CR 1001** has a 12 months validity from the date on the delivery note.

Moisture absorbed by the product can affect its effectiveness.

It is therefore advisable to close carefully the bags after each collection.

**PRECAUTIONS**

**Pentarapid CR 1001** is not irritating in contact with skin.

It is easily removable from every surface with water and soap.

Its inhalation can cause a slight irritation of the first part of the respiratory tract. However, the trouble disappears as soon as its handling stops. It is so advisable to wear an anti-dust mask and to avoid dispersion in the environment.

In case of accidental loss, it must be picked up in dry state and discharged in an authorised waste dump.

For further information, please consult the security data sheet.

**PACKAGING**

25 kg polythene paper bags.

The specifications stated in this report have been got either through standardized tests and rules or their modifications following Pentachem systems. The methods applied can be requested to our technical service.

All the data stated in this technical sheet are based on our knowledge and experience. However, before using the item differently from indicated, it is advisable to carry out preventive tests. In any case, PENTACHEM does not assume any responsibility for any damage or defect caused by the use of our products, as the employment conditions are not under our control. We also inform that our technical service is at our customers' disposal for any information concerning the correct employment of our products.