Buzzi Unicem Next identifies a family of hydraulic binders based on calcium sulpho aluminate clinker obtained by the burning of a mix of bauxite, gypsum and limestone at a temperature of approximately 1,350°C subsequently ground.
Next expansive is an expansive hydraulic binder made with sulpho aluminate clinker that forms expansive ettringite upon hydration. When used as an additive it actually incr eases the volume of mortar and concrete which, when properly restrained, may offset the hygrometric shrinkage that subsequently occurs.
Next expansive is used in premix, shrinkage-compensated products such as concrete, restoration mortars, self-levelling mortars, technical mortars and repair mortars.

Buzzi Unicem

Next expansive SN18 Expansive hydraulic binder made with sulpho aluminate clinker

Physical characteristics

Chemical analysis	
CaO	55 – 60%
SO_3	21 – 25%
Cl^-	< 0.1%
Cr VI	< 2.0 ppm

Density	2,800 kg/m³
Blaine spec. surface [standard UNI-EN 196-6]	> 4000 cm²/g
Colour	light grey

Areas of use in mortar

The restrained expansion test according to standard UNI 8147 method A allows for the curing of specimens in lime-saturated water. The values shown below refer to tests in mortar according to standard UNI EN 196-1, in which the percentage of **Next expansive** calculated on the weight of Portland cement CEM II-A/LL 42.5R shown below is dosed in replacement.

Mean restrained expansion [µm/m]

Performance measurement time	Test method	Percentage of **Next expansive**		
		8%	10%	12%
24h	UNI 8147	> 200	> 250	> 350
28gg		> 500	> 900	> 1.300

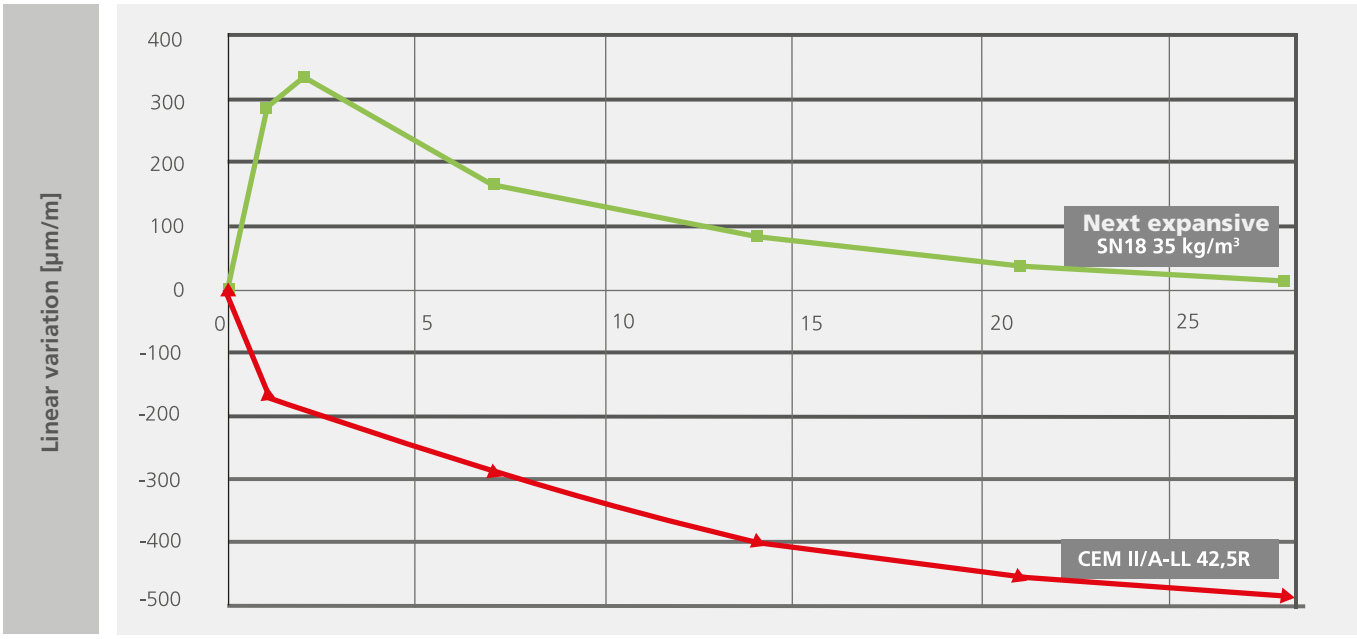
Average compressive strength [MPa]

Performance measurement time	Test method	Percentage of **Next expansive**		
		8%	10%	12%
24h	UNI EN 196-1	> 12	> 10	> 8
28gg		> 45	> 35	> 30

Applications in concrete

The restrained expansion test according to standard UNI 8148 method B allows for the curing of specimens wrapped in nylon for 2 days and then in controlled rooms at 20 °C and a relative humidity of 55%.
The graph below shows a test on concrete prepared with 340 kg/m³ of cement CEM II-A/LL 42.5R, 190 l/m³ of water and 35 kg/m³ of **Next expansive** SN18.

Restrained Expansion UNI 8148 method B



Applications

Next expansive promotes the formation of expansive ettringite when added to cement mix in amounts ranging between 7% to 15% of the weight of Portland cement. If properly restrained, the increased volume of the mortar or concrete produced by the expansion induces a state of bi/triaxial compression, which may partially or completely offset the hygrometric shrinkage that typically occurs with cement mix.

The following results may be achieved by optimizing the dose of **Next expansive** depending upon the extent of the restraint and the mechanical properties required of the cement mix:

- Greatly reduce shrinkage
- Improve adhesion to the substrate and reinforcements
- Reduce cracking due to hygrometric shrinkage
- Obtain chemical precompression
- Reduce permeability

Next expansive can be used in the following products:

- Concrete for repairing infrastructure
- Concrete for seamless flooring
- Expansive mortars and gr
- Restoration mortars
- Self-levelling mortars
- Repair mortars
- Technical mortars

Warnings

- We recommend performing preliminary laboratory tests to determine the appropriate dose of **Next expansive**.
- Do not exceed the recommended percentages of **Next expansive**.
- Allow the cement mix to be properly wet-cured in order to obtain the maximum expansion.
- There are no known incompatibilities between **Next expansive** and the main cements and additives used in premixes and concrete.
- **Next expansive** must be stored in an absolutely dry location.
- **Next expansive** can be supplied in bulk, in 25 kg bags or in big-bags.
- Consult the safety data sheet, which can be downloaded from the website *www.buzziunicem.it*.

Environmental sustainability

Due to the low content of calcium carbonate in the raw materials, the production cycle of the Next products features reduced emissions of CO_2 in the environment.

Note: *The instructions provided in this document are the result of our best experience and are merely indicative. No responsibility is taken for defects or damages caused by misuse of the product or when the conditions of its use differ from our instructions. The Technical Assistance Department is always available for any advice and suggestions concerning proper use of the product and for the performance of technical tests.*

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SN18 01/23 ENG

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