



## Applications:

- Precast concrete
- Repair mortars
- Tile adhesives
- Flooring products
- Quick repair
- Anywhere where shrinkage can be an issue

## Benefits:

- Shrinkage compensation
- High flexural strengths
- Increased setting times
- Increased strength development
- Rapid demolding

Calumex® QX-P is an additive to Portland cement, specially developed as a high-performance, shrinkage reducing agent based on calcium sulfoaluminate (C.S.A.). Due to its mineral composition ettringite is formed when combined with Portland cement. The micron-sized ettringite crystals that are formed during the cement hardening mitigate the thermal and gel hardening shrinkage through expansion.

The expansion that occurs is part of the strength development and not to be confused with the expansion that occurs before the strength development, e.g. gas evolution from alumina powder, or volume increase that occurs from quicklime hydration.

In most cases, a replacement of the binder content of approx. 6-10% will give enough expansion to compensate the shrinkage and attain a neutral cement. An increase of dosage leads to further expansion and may result in severe damage to the mortar or concrete.

## Chemical and phase composition

Al <sub>2</sub> O <sub>3</sub> :	18-23%	Blaine :	3800-4300 cm <sup>2</sup> /gr
SiO <sub>2</sub> :	4-7%	Density :	± 2,85 g/cm <sup>3</sup>
Fe <sub>2</sub> O <sub>3</sub> :	<1,5%	Color :	beige
fCaO :	0,16-0,18%		

## Physical properties:

**Setting times** are based on the following formulation:

*125gr Calumex® QX-P*

*250gr CEM I 52,5R*

*0,56gr Citric acid*

*150gr water*

Initial setting time: ± 3 minutes

Final setting time: ± 6 minutes



# TECHNICAL DATASHEET

**Strength development** is based on the following formulation:

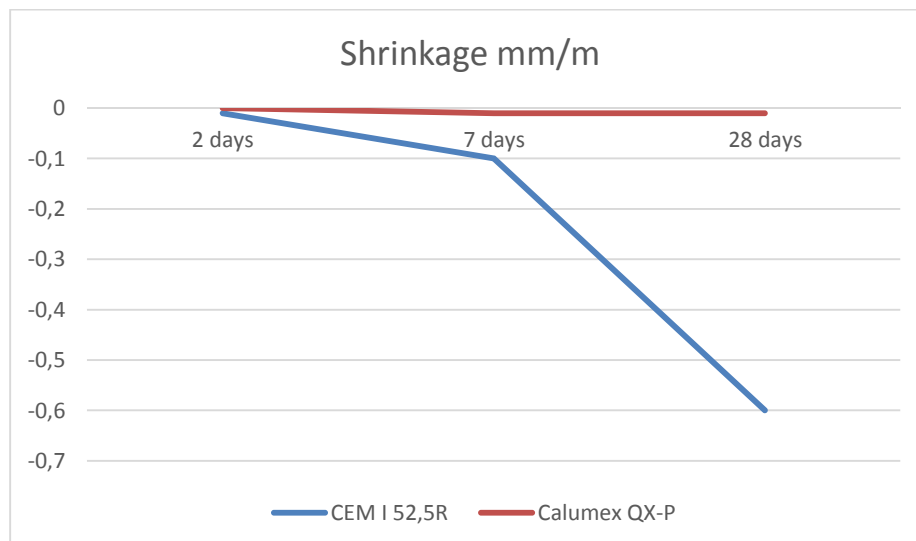
36gr Calumex® QX-P  
414gr CEM I 52,5R  
225gr water  
1350gr NORM sand

	Compressive Strength (N/mm <sup>2</sup> )	Flexural Strength (N/mm <sup>2</sup> )
2 Days	≥ 30 N/mm <sup>2</sup>	± 6 N/mm <sup>2</sup>
7 Days	≥ 50 N/mm <sup>2</sup>	± 8,5 N/mm <sup>2</sup>
28 Days	≥ 65 N/mm <sup>2</sup>	± 8,5 N/mm <sup>2</sup>

**Shrinkage results** are based on the following formulation:

36gr Calumex® QX-P  
414gr CEM I 52,5R  
225gr water  
1350gr NORM sand

	Shrinkage (mm/m)
6 hours	- 0,00
24 hours	- 0,00
48 hours	- 0,00
7 days	- 0,01
28 days	- 0,02 max.



Keep in mind that applying different types or sources of Portlandcement, can lead to varying results.

The information given above is based on our current experiences and knowledge of the product. It gives no guarantee of the eventual result. The customer remains responsible for testing the product before use. Caltra Nederland B.V. cannot be held responsible for possible damage caused by (incorrect) use of its products. For additional information with regard to safe use, please consult the Material safety datasheet (SDS)

