CEMflex VB - Steel Plate Waterstop

With General Building Code Test Certificate (abP)

CEMflex VB - Steel Plate Waterstop

The **CEMflex VB** elements are provided with a special coating on both sides.
The connection of the special coating to the concrete prevents any water-flow through the concrete construction joint.
Besides the extremely good connection of the special coated steel plate to the surrounding concrete there are some other chemical reactions such as light swelling, crystallization, self-healing of concrete cracks and a natural sintering / crystallization (natural formation of limestone) of concrete cracks.
Only 3 cm of concrete cover on both sides are necessary to seal the cold joint up to 5 bar (50 m water-pressure)
The elements are 2,000 mm long, 150 mm high and about 1.25 mm thick. The special coating is not sticky and therefore no protection foil is necessary, which has to be removed before concrete work starts.

Areas of Application CEMflex VB

CEMflex VB can be used in all construction joints, horizontally or vertically, up to a maximum water-pressure of **80 meter (8 bar)**.
Areas of application:

- Horizontal + vertical sealing of any concrete construction joints!
- Waterproof cold joints in foundation-, basement-, civil engineering work as well as in tunnel constructions, underground constructions and special-purpose solutions.

CEMflex VB Product Characteristics

Galvanized steel metal plate (b = 0.75 mm / l = 2,000 mm / h = 150 mm) provided on both sides with a 0,5 mm thick special coating which sticks to the concrete chemically and seals permanently the joint which has to be sealed.

CEMflex VB is an active steel plate waterstop!
The sealing function is based on the active crystallization process as well as the supported natural sintering process of concrete.

Characteristics CEMflex VB

The extreme good connection behaviour to the concrete is responsible for the very good waterproofing property.
CEMflex VB supports the natural sintering / crystallization of the cold joint as well as the cracks.

Installation of CEMflex VB

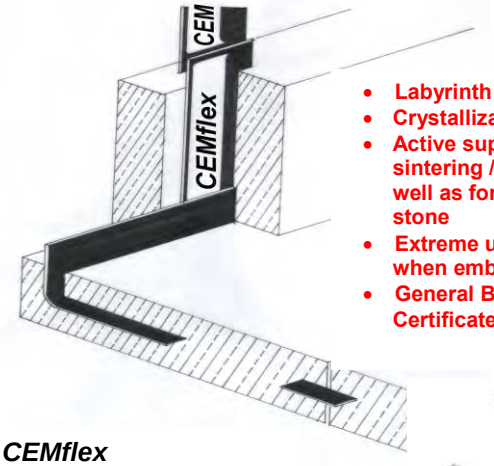
CEMflex VB with coating on both sides has to be installed directly on top of the reinforcement.
CEMflex VB has to be fixed by using the special omega steel plate holder.
The overlapping has to be at least 5 cm.

Form of Delivery / Storage

The single element is 2,000 mm long, 150 mm high and 1.25 mm thick. In wooden boxes of 50 pieces = 100 m.

CEMflex VB can be stored in dry and cold conditions.

Installation example



- **Labyrinth sealing**
- **Crystallization sealing**
- **Active support of the natural sintering / crystallization as well as formation of limestone**
- **Extreme unique connection when embedded in concrete**
- **General Building Code Test Certificate (abP)**

CEMflex steel plate waterstop

CEMflex Ω - holder

CEMflex VB

CEMflex VB steel plate reacts because of its various encapsulated components in the patented coating in combination (direct contact to concrete) with the components of the surrounded concrete.

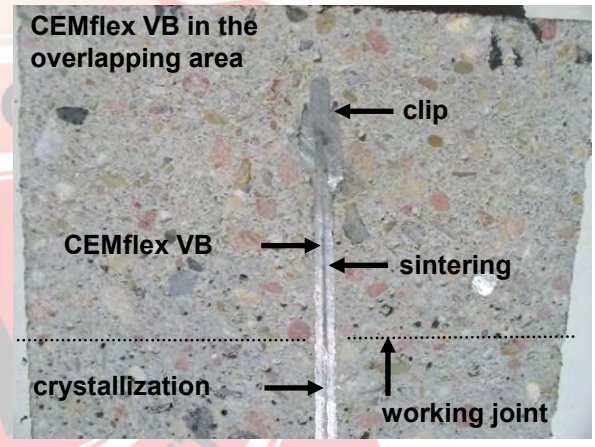
Besides the extremely good connection of the special coated steel plate to the surrounding concrete there are some chemical reactions starting such as light swelling, crystallization, self-healing of concrete cracks and a natural sintering / crystallization (natural formation of limestone) of concrete joints as well as cracks.

The components of the special coating need water or water-based liquids in order to start automatically the chemical reaction; this natural crystallisation process is an active self-healing process!
►CEMflex VB is an "active", water reacting steel plate waterstop!

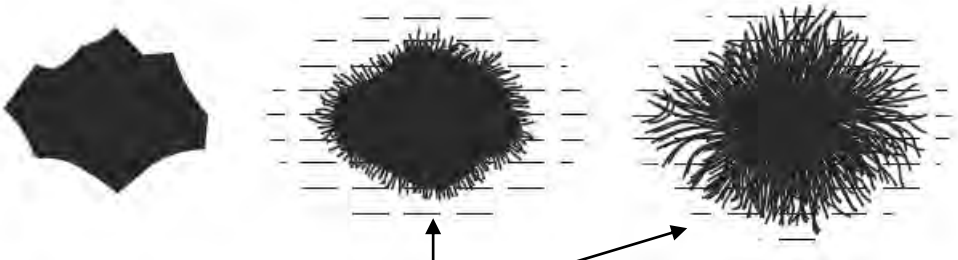
This active self sealing process starts automatically by water contact. The function of this sealing process is secured even after decades of installation.
By the use of CEMflex VB there will always be an automatically (active) waterproofing reaction / process. The crystallization, self-healing of concrete cracks will penetrate deeper and deeper in the concrete structure.

The waterproofing reaction of CEMflex VB steel plate waterstop has been tested on the independent/public Institution of the University and is confirmed with an abP **(General Building Code Test Certificate / Approval)**

CEMflex VB
white crystallization
is already shown.



The overlapping area of CEMflex VB (only 5 cm required) will react and seal automatically by water ingress!
The active waterproofing process is finished within only a few hours and as a result water has no chance to enter!



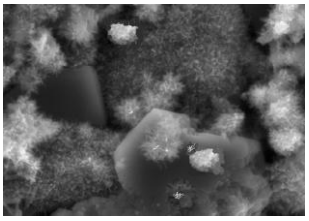
Particle of the coating

Particle of the coating in reaction with water or liquids

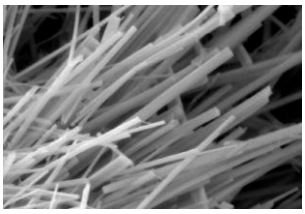
Crystallization! An active self-healing process

►CEMflex VB is an "active" waterstop steel plate and tested up to 8 bar water pressure!

The CEMflex VB Crystallization Shown under a Microscope

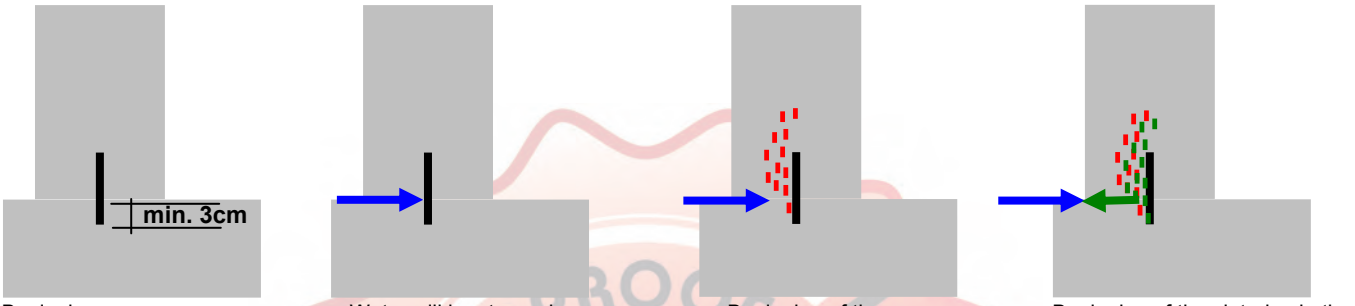


Calciumhydroxy-based crystalline fibres



Calciumhydroxy-based crystalline needles

CEMflex VB



Beginning:
CEMflex VB has an extremely good connection to the surrounding concrete

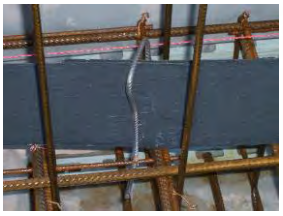
Water will be stopped in the cold joint!

Beginning of the crystallization process

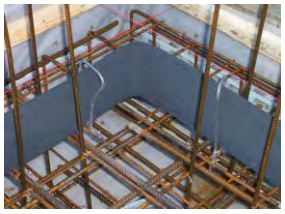
Beginning of the sintering in the structure of the concrete natural formation of limestone

This unique crystallization and sealing process is tested up to 5 bar water pressure at the University of Stuttgart / Germany and up to 8 bar at Vattenfall / Sweden.

Pictures of CEMflex VB



CEMflex VB steel plate waterstop (with **CEMflex Ω - holder)**
CEMflex VB is special coated with a crystalline admixture on both sides. CEMflex VB can be fixed by using the special omega steel blade holder. The overlapping has to be at least 5 cm.
No gluing of the overlapping is required.
The surface of CEMflex VB is not sticky and therefore is very easy to handle.
There is no plastic foil (protection sheet) which has to be removed before concreting.



CEMflex can easily be bent on side up to 90 degrees and more!

CEMflex VB can also be stuck into the fresh concrete. The overlappings have to be fixed only by using the CEMflex clip. The overlapping has to be at least 5 cm; gluing the overlappings is not required!

CEMflex VB properly embedded in the fresh concrete / first concrete section (a minimum of 3 cm concrete cover is required).

CEMflex VB steel plate waterstop is a unique technology ***made in Germany.***