

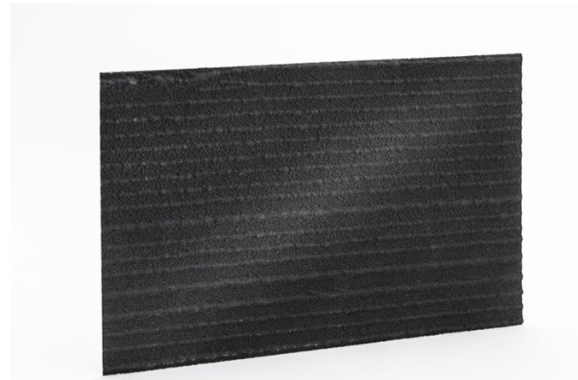
# BPA-CEMFLEX® VB STEEL PLATE WATERSTOP

„Active” steel plate waterstop with a patented special coating on both sides

## PRODUCT DESCRIPTION

Steel Plate Waterstop BPA-CEMflex® VB consists of a galvanised steel plate (stainless steel on special request only) encapsulated in a special patented active coating which reacts with water and moisture when embedded in concrete to provide a watertight construction joint.

The steel plate creates a physical barrier whilst the BPA-CEMflex® active coating reacts with the alkalinity of any water in the concrete to form Calcium Hydroxide (Free Lime) which supports the natural self-healing (sintering) process of the concrete to seal cracks and eliminate water ingress. Only 3 cm of concrete cover on both sides are necessary to seal cold joints up to 8 bar (80 m water pressure).



The connection of the special coating to the concrete prevents any water-flow through the concrete construction joint.

## APPLICATION AREAS

Steel Plate Waterstop BPA-CEMflex® VB functions as both an active and passive barrier to the transmission of water through all non-movement construction joints (both horizontal and vertical) in in-situ reinforced concrete. It can be used in pressurized and non-pressurized water. As BPA-CEMflex® VB is only activated by the alkalinity of fresh concrete it may be installed in all weather conditions.

Areas of application:

- 🔗 Construction joints in wall/floor areas in contact with pressurized and non-pressurized water
- 🔗 Wall/wall and floor/floor construction joints
- 🔗 or wall/ceiling areas
- 🔗 Joints between prefabricated components: wall/floor, corner joints, and predetermined breaking points

## FUNCTION – HOW DOES BPA CEMFLEX® WORK?

When fresh concrete is placed around BPA-CEMflex® VB Plate waterstop, the alkalinity (pH>11) of the concrete activates the patented coating producing a chemical reaction, causing the patented coating to soften and expand slightly, thus improving its osmotic effect. This allows it to penetrate deeply into any cracks in the concrete where it crystallises and seals the concrete. This means that limestone created by the CHP (Calcium Hydroxide Penetration) process penetrates deep into the capillaries of the concrete. The CEMflex coating generates microscopic needles and fibres fusing within the body of the concrete, sealing capillaries and shrinkage cracks reliably and permanently, whilst continuously displacing moisture for the lifetime of the structure. Unlike other systems the sealing process is multi directional. Without moisture, the components of the special coating do not react.

Once installed, the patented coating on BPA-CEMflex® VB Plate Waterstop has infinite sealing ability. Should water or moisture come into contact with the coating at any time in the future, the coating will re-activate and repeat the sealing process. In doing so, the crystallisation and fusion processes penetrate even deeper into the structure of the concrete. Unlike conventional crystallisation waterproofing the CEMflex® active process is a form of crystallisation that does not create any salts which could potentially have an adverse effect on the reinforcing steel which supports the concrete structure.



**CHARACTERISTICS AND ADVANTAGES**

- ☞ CEMflex VB Active Waterstop has been designed to provide the highest level of efficacy of any joint waterstop available whilst also being the simplest to fit
- ☞ Steel plate waterstop encapsulated in a 0,5mm thick special patented active coating on both sides with crystallization properties, which seals cracks in the concrete
- ☞ Independently tested for use up to 8 bar water pressure
- ☞ Excellent bond with the concrete
- ☞ Suitable for both vertical and horizontal applications
- ☞ Can be used in conjunction with other waterstop systems: PVC waterstops for movement joints, injectable hose systems or hydrophillic waterstops
- ☞ Life expectancy of 100 years
- ☞ In the event of water ingress the patented coating will reactivate at any time throughout the lifetime of the element
- ☞ Studies show up to 80% installation labour saving over traditional waterstops
- ☞ Simple design dramatically reduces the potential for poor installation or expensive remedial works
- ☞ Fully Weatherproof System- no premature activation of the coating on contact with rainwater
- ☞ Can be installed both pre and post pour
- ☞ No collapse or displacement of the waterstop when subjected to the weight of concrete poured from above
- ☞ No special installation tools required
- ☞ No sticky protection tape to be removed and disposed of from CEMflex VB Plate Waterstop prior to use
- ☞ Bonding the overlappings is not required (The overlapping has to be at least 5cm)
- ☞ No welding required

**APPROVALS**

- ☞ CE - Conformité Européene by DIBt / ETA-16/0601
- ☞ DIBT Approval Z-74.10-138 / oil-, gasoline- and fuel-resistance test
- ☞ BBA Agrément Certificate 15/5194
- ☞ Vattenfall Rapport PR.117.21 tested up to 8 bar water pressure
- ☞ DVGW Code of Practice W 347 - Drinking Water Approval
- ☞ iBMB (P-5147/258/09) General German Public Test Report
- ☞ The Public German Railway Authority – 80 year service life

**PRODUCT DATA**

	<b>BPA-CEMflex VB</b>	<b>ARTICLE-NO</b>
<b>DIMENSIONS DESCRIPTION</b>	CEMflex VB 100; 2m lengths, 100mm high and 1.2 mm thick	13 - 110
	CEMflex VB 150; 2m lengths, 150mm high and 1.25mm thick	13 - 100
	CEMflex VB 200; 2m lengths, 200mm high and 1.25mm thick	13 - 129
	CEMflex VB 200; 2m lengths, 250mm high and 1.25mm thick	13 – 130
	Special dimensions on demand	
<b>FORM OF DELIVERY</b>	packed in wooden boxes with 50 lengths per box (100m/box)	
<b>STORAGE</b>	should be stored off the ground, in dry conditions which are free from frost	



	BPA-CEMFLEX VB NG	ARTICLE-NO
<b>DIMENSIONS DESCRIPTION</b>	CEMflex VB NG 70/30; 2m lengths, 700mm high, 300 mm angled, 90° angle, 1,25mm thick	13 - 204
	CEMflex VB NG 120/30; 2m lengths, 1200mm high, 300 mm angled 90° angle, 1,25mm thick	13 - 200
	CEMflex VB NG 170/30; 2m lengths, 17cm high, 3cm angled, 90° angle, 1,25mm thick	13 - 134
	Special dimensions on demand	
<b>FORM OF DELIVERY</b>	CEMflex VB NG 70/30 / 120/30: packed in wooden boxes with 50 pcs. per box (100m/box) CEMflex VB NG 170/30: packed in wooden boxes with 40 pcs. per box (80m/box) Special dimensions on demand	
<b>STORAGE</b>	should be stored off the ground, in dry conditions which are free from frost	

	BPA-CEMFLEX VB NG	ARTICLE-NO
<b>DIMENSIONS DESCRIPTION</b>	CEMflex VB NG Plus 75/75; 2m lengths, 750mm high, 750 mm angled, 90° angle, 1,25mm thick, installation help included	13- 206
	CEMflex VB NG Plus 120/30; 2m lengths, 1200mm high, 300 mm angled, 90° angle, 1,25mm thick, installation help included	13 -201
	Special dimensions on demand	
<b>FORM OF DELIVERY</b>	CEMflex VB NG Plus 70/30 / 120/30 packed in wooden boxes with 50 pcs. per box (100m/box) Special dimensions on demand	
<b>STORAGE</b>	should be stored off the ground, in dry conditions which are free from frost	

	BPA-CEMFLEX VB ASE	ARTICLE-NO
<b>DIMENSIONS DESCRIPTION</b>	CEMflex VB ASE 30/90/30 [u-form]; 2m lengths, 900mm wide, (2x) 300 mm angled, 90° angle, 1,25mm thick, installation help included	13-505
	CEMflex VB ASE 30/140/30 [u-form]; 2m lengths, 1400mm wide, (2x) 300 mm angled, 90° angle, 1,25mm thick, installation help included	13 -506
	CEMflex VB ASE 30/90/30 [z-Form]; 2m lengths, 900mm wide, (2x) 300 mm angled, 90° angle, 1,25mm thick, installation help included	13 -500
	CEMflex VB ASE 30/140/30 [z-Form]; 2m lengths, 1400mm wide, (2x) 300 mm angled, 90° angle, 1,25mm thick, installation help included	13 -501
	Special dimensions on demand	
<b>FORM OF DELIVERY</b>	individual, Special dimensions on demand	



**STORAGE**

should be stored off the ground, in dry conditions which are free from frost

**TECHNICAL DATA**

	BPA-CEMFLEX VB	BPA-CEMFLEX VB NG	BPA-CEMFLEX VB NG Plus	BPA-CEMFLEX VB ASE
<b>MINIMUM CONCRETE COVER</b>	≥ 30mm	≥ 30mm	≥ 30mm	fully covered
<b>WATERTIGHTNESS</b>	8,0 bar <sup>2)</sup> 5,0 bar <sup>1)</sup>	5,0 bar <sup>1)</sup>	5,0 bar <sup>1)</sup>	0,75 bar <sup>3)</sup>
<b>OVERLAPPING</b>	≥ 50mm	≥ 50mm	≥ 50mm	≥ 50mm
<b>USE IN WATER EXCHANGE AREAS</b>	✓	✓	✓	✓
<b>LIFETIME EXPECTANCY</b>	minimum 50 years			
<b>WATERTIGHT CONCRETE CONSTRUCTION</b>	Grade of waterproofing protection: Grade 1, Grade 2, Grade 3 as British Standard 8102:2009 <sup>typeB</sup>			
	Type of waterproofing: Type B BS8102:2009			
<b>FIRE CLASSIFICATION</b>	class E according to EN 13501-1			
	1) Tested to 5,0 bar (50 m water pressure); test medium: water 2) Supplementary tests to 8,0 bar (80 m water pressure); test medium: water 3) Tested to 0,75 bar (7,5 m water pressure)			
Type B	Type B (structurally Integral) protection- the structure is proved as a watertight construction using admixtures and water-bars			
Grad 1)	Some water seepage damp tolerable depending on the intended use. Car parking, plant rooms (no electrical equipment) etc. local drainage may be provided. <b>Capillary moistened-watertight concrete structures</b>			
Grad 2)	No water penetration is acceptable. Damp areas are tolerable depending on the end use. Plant rooms, workshops etc.; Mainly dry: watertight concrete structure including accessories to seal joints, formwork ties, penetrations, additional reinforcement, crack reduction reinforcement, concrete admixture, advanced concrete technology, etc. Fully designed and detailed concrete structure by a waterproofing specialist / engineer!			
Grad 3)	No dampness or water penetration is acceptable- Ventilated residential and commercial areas such as homes, offices, shops etc.; Completely dry: watertight concrete structures			



## **ADDITIONAL INFORMATION**

### **Application Instructions**

BPA-CEMflex VB Plate Waterstop can be installed in one of two simple methods: either by fixing it to the steel reinforcement pre-pour using CEMflex Omega Holders or alternatively by pushing the plate into the first pour of concrete to a depth of at least 30 mm, allowing the remainder of the plate to be covered by the next pour of concrete. To connect elements simply overlap the plates by 5 cm and secure with a CEMflex Clip. BPA-CEMflex VB Plate Waterstop can be installed both horizontally and vertically and is easily connected to PVC Waterstops in movement joints to form a continuous watertight joint system.

The elements are strong yet malleable so angles/corners can be formed by hand without damage to the patented CEMflex coating.

### **Preparation and General Advice**

Surrounding air temperature:

- 🔒 minimum - 5 °C
- 🔒 maximum + 45 °C

The above mentioned temperatures constitute the generally valid area in which no additional measures need to be taken during application.

### **Environmental Advice**

This product does not represent a hazardous substance within the meaning of the EU Hazardous Substances Regulation. A safety data sheet for transport, placing on the market and use is available on the request. In accordance with DVGW Code of Practice W 347, BPA-CEMflex VB is approved for use in drinking water tanks and therefore complies with the WHG requirements for drinking water protection.

### **Health and Safety**

The essential safety, toxicological, physical and ecological data for the handling of BPA-CEMflex VB can be taken from the product-specific safety data sheets.

### **Data**

All technical data stated in this product data sheet are based on laboratory tests. Actual measured data may vary due to circumstances beyond our control.

### **Disclaimer**

All above mentioned Information concerning BPA-products, especially any recommendations and advices relating to the application and use of BPA products are given in good faith based on BPA's current knowledge and experience of the products when properly stored, handled and applied under normal conditions in accordance with BPA's recommendations.

In practice, the differences in materials, actual site conditions and other factors outside are such that no warranty nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any written recommendations, or from any other advice offered. The user of the product must test the product's suitability for the intended application and purpose before proceeding with the full application of the products. BPA reserves the right to change the properties of its products without notice. Users must always refer to the most recent issue of the Product Data Sheet for the product concerned, copies of which will be supplied on request. All sales of BPA are subject to our current terms and conditions.

### **Local Restrictions**



Please note that as a result of specific local regulations the performance of this product may vary from country to country. Please consult the local product data sheet for the exact description of the application fields.

