

For a reliable hold ...



02/2018



PFEIFER LCON fixing bracket system

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You're safe with PFEIFER



Efficient

- Practice-oriented carrying capacities
- Flexibly independent of the anchor system
- Simple and safe to use



Safe

- Type-approved
- Reliable manufacturing process
- Monitored production
- Toothed connection of bracket and washer



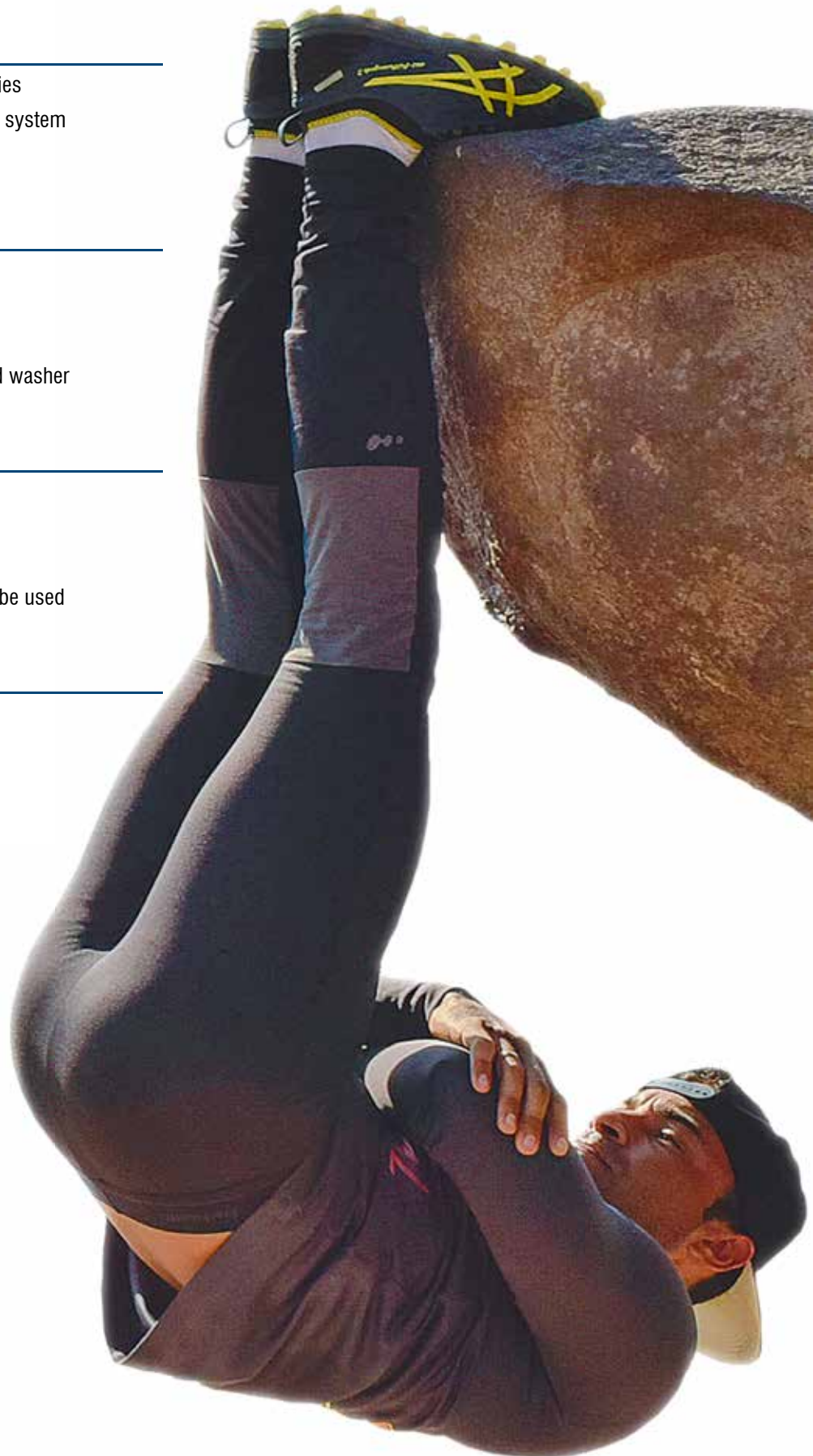
Efficient

- Quick and simple to use
- Practice-oriented tolerances
- Versatile in use
- Different means of anchoring can be used



Cost-effective

- Reusable
- Only 4 standard sizes



PFEIFER LCON fixing brackets

Item No. 5,280



PFEIFER

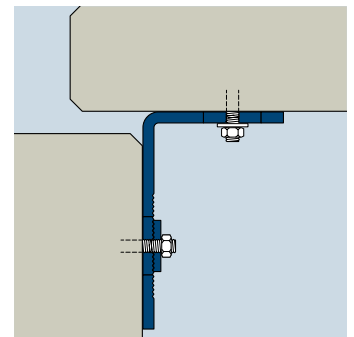
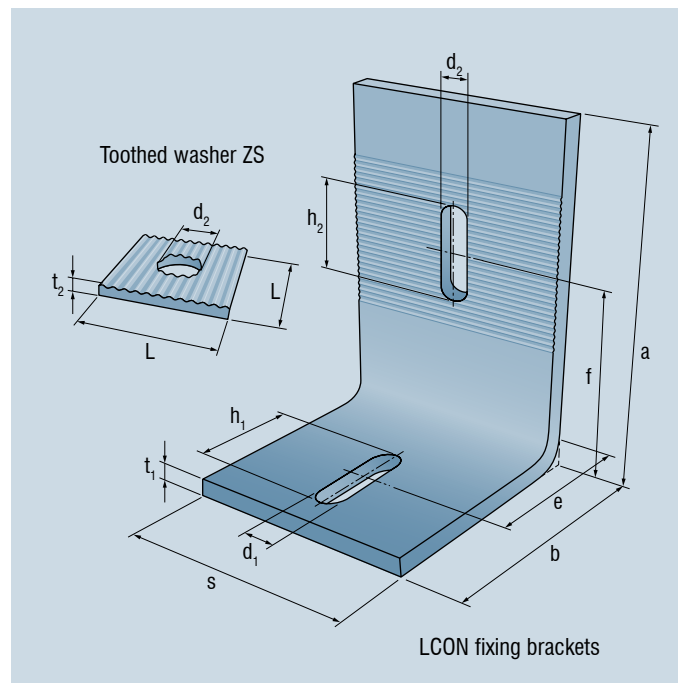
Connection Systems
LCON fixing brackets

PFEIFER LCON fixing brackets are structural elements of steel intended for load bearing connection of precast units. Assembly is effected by means of a screwed connection. Toothed washers enable forces to be transmitted as designed and tolerances to be compensated. PFEIFER-DB anchors or comparable anchoring elements are suitable for

anchoring the forces in the precast unit. Alternatively, anchor channel systems can be used.

Material:

Fixing bracket: Steel, galvanized
Toothed washer: Steel, galvanized

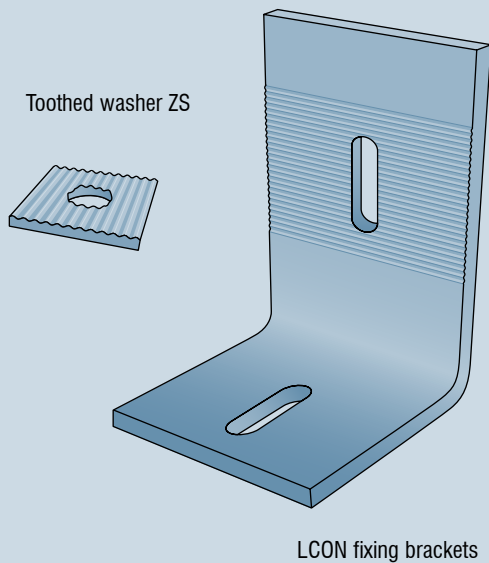


Ref. no.	Type/size	a	b	s	t ₁	d ₁	h ₁ [mm]	h ₂	e	f	d ₂	t ₂	L	Packing unit, pieces	weight [kg/Pu]
05.280.01.06.011	LCON T1 + ZS 1	170	110	60	6	11	45	45	70	105	11	6,0	40	12	9,96
05.280.01.06.013	LCON T2 + ZS 2	170	110	80	6	11	45	50	70	105	13	6,0	40	10	10,81
05.280.01.08.013	LCON T3 + ZS 3	180	110	80	8	13	50	50	70	105	13	6,0	40	8	11,54
05.280.01.10.018	LCON T4 + ZS 4	195	110	80	10	13	50	60	70	120	18	6,0	45	6	11,31
05.280.02.06.011	ZS 1	-	-	-	-	-	-	-	-	-	11	6,0	40	5 (50) ¹⁾	0,38
05.280.02.06.013	ZS 2/3	-	-	-	-	-	-	-	-	-	13	6,0	40	5 (50) ¹⁾	0,38
05.280.02.06.018	ZS 4	-	-	-	-	-	-	-	-	-	18	6,0	45	5 (50) ¹⁾	0,48

¹⁾ Quantity per carton

Product description

Figure 1



LCON fixing brackets consist of a bent bracket element and an associated matching ZS toothed washer. All components (bracket element and toothed washer) are hot-dip galvanized. The minimum thickness of the zinc coating is 50 micrometres.

The design resistances of the fixing brackets have been verified within the scope of a type static calculation. The calculation was checked by an independent testing body.



Warning:

changes to or adaptations of the product are not permissible, or may only be carried out by the manufacturer. Any change or adaptation may reduce the carrying capacity to the point of complete product failure.

LCON T1 **CE**

Art.-Nr. 320526

2451

PFEIFER

22-02-2017

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EN 1090-1:2009+A1:2011

Intended use

Figure 2

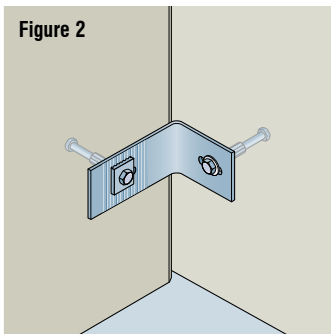
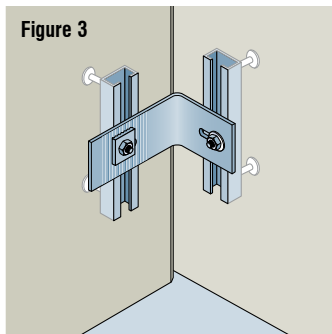


Figure 3



PFEIFER LCON fixing brackets are connection elements which are used for the mechanical connection (screwed connection) as planned of precast elements (beams, walls, props, etc.). The LCON system consists of steel brackets with elongated holes with a partially toothed (profiled) surface and square ZS toothed washers. Shear forces V_{Rd} can be transmitted in the region of the toothed elongated hole; tensile and compressive forces N_{Rd} can be transmitted via the elongated hole without toothing.

The design resistances specified in the following apply to the proof of forces arising from static and quasi-static loading. They can be used for structural elements made from normal concrete with a strength starting from at least C20/25.

PFEIFER-DB anchors or comparable point-by-point fastenings are suitable for anchoring the forces in the precast unit (Figure 2). Alternatively, anchor channel systems can be used (Figure 3). Combinations of different anchor systems are possible.

The width of the joint between the structural elements being connected is:

$$f_{\text{joint}} \leq 20 \text{ mm.}$$

The width of the chamfers on the structural elements in the area of the connection is:

$$f_{\text{chamfer}} \leq 10 \text{ mm.}$$

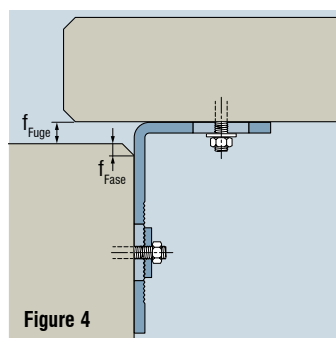


Figure 4

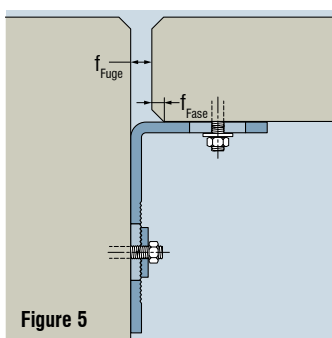


Figure 5

Dimensioning

Connections using PFEIFER LCON fixing brackets must be designed and dimensioned in line with engineering practice. Within the framework of the proof recording, a distinction is made between the proof of the LCON fixing bracket and the proof of the anchoring elements including the load application into the concrete elements being connected.

LCON fixing brackets

The design resistances specified in the following apply to the proof of forces arising from static and quasi-static stress. They can be used for structural elements made from normal concrete with a strength grade of at least C20/25.

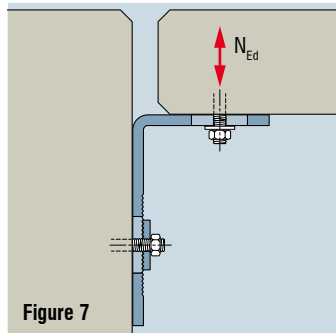
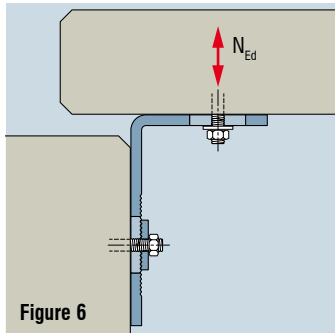


Table 1 – design resistances

Type/Size	Design resistances N_{RD} [kN]
LCON 1	± 2,3
LCON 2	± 3,0
LCON 3	± 5,2
LCON 4	± 8,0

Proof: $\frac{N_{Ed}}{N_{RD}} \leq 1$

Anchoring elements

PFEIFER-DB anchors or comparable anchoring elements are suitable for anchoring the forces in the precast unit. Alternatively, anchor channel systems can be used. The selection is made by the responsible planner. The proof of the anchoring elements is carried out independently of the LCON fixing brackets. Consideration must be given to the fact that the transmission of loads by means of toothed washers gives rise to additional force components $N_{Sd,2}$ (spreading forces). These must be verified within the framework of the design calculation.

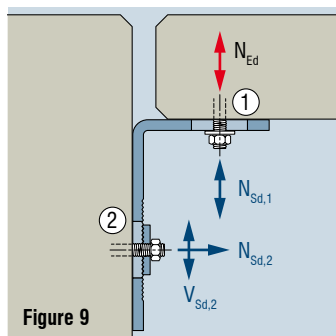
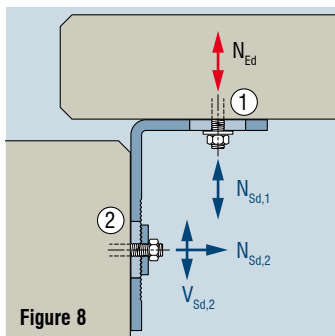


Table 2 – maximum diameter of the anchoring elements

Type/Size	Anchor - ϕ [mm]
LCON 1	10
LCON 2	12
LCON 3	12
LCON 4	16

Loads at anchoring point 1: $N_{Sd,1} = N_{Ed}$
 Loads at anchoring point 2: $N_{Sd,2} = 2,2 \cdot N_{Ed}$
 $V_{Sd,2} = N_{Ed}$

The proofs required for the anchor system used must be provided in accordance with the specifications of the respective manufacturer.

Spacings

The edge distances must be verified with the anchoring elements. The specifications of the respective manufacturer must be observed for this.

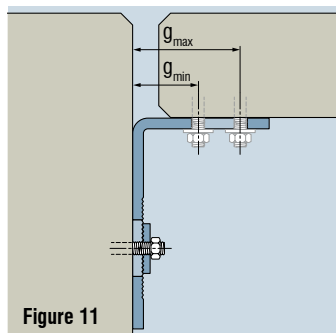
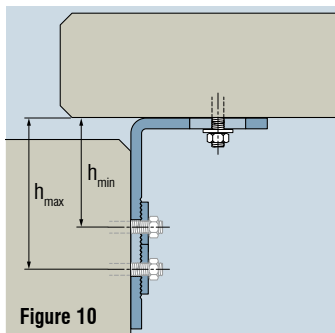


Table 3 – edge distances

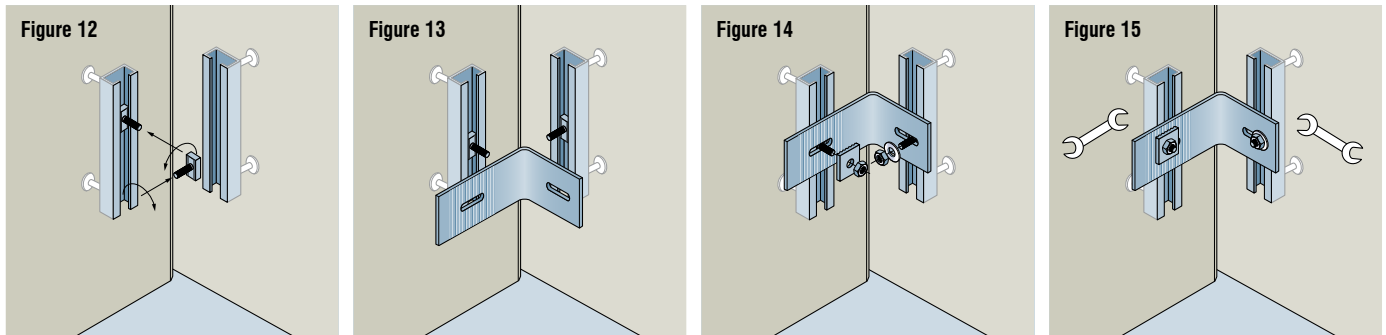
Type/Size	Installation situation 1		Installation situation 2	
	h_{min} [mm]	h_{max} [mm]	g_{min} [mm]	g_{max} [mm]
LCON 1	87,5	122,5	52,5	87,5
LCON 2	86,0	124,0	52,5	87,5
LCON 3	86,0	124,0	51,0	89,0
LCON 4	98,0	142,0	51,0	89,0

Installation/assembly

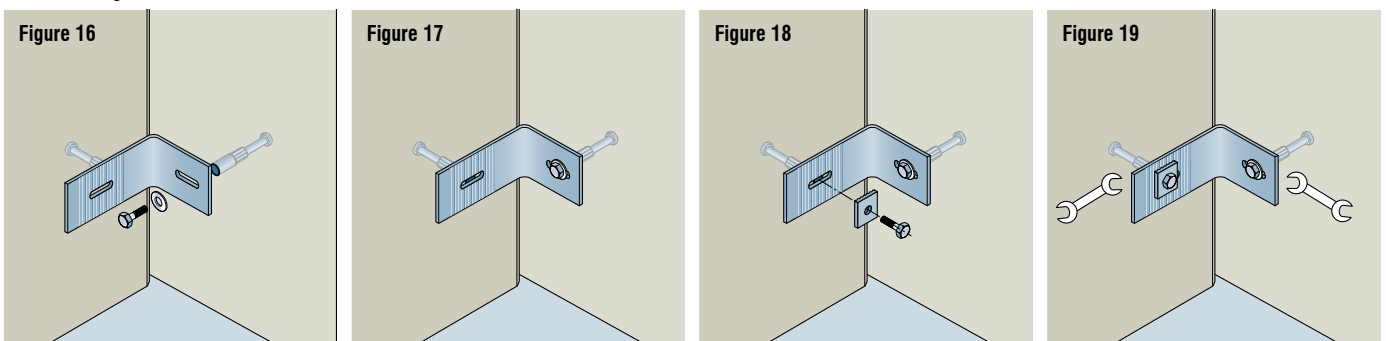
Only standard supplied products and components may be used for assembly. Substitution, change or adaptation of structural elements is not permissible. The anchorage of the forces in the precast unit is effected by means of PFEIFER-DB anchors or comparable anchor elements. Alternatively, anchor channel systems may be used. Regarding the installation and use of the anchors, it is essential to follow the specific specifications (e.g., tightening torques for the bolts) of the respective manufacturer.

The selection and assembly of PFEIFER LCON fixing brackets and ZS toothed washers is carried out by trained, competent personnel in accordance with the requirements of the planner responsible.

Assembly with anchor channels



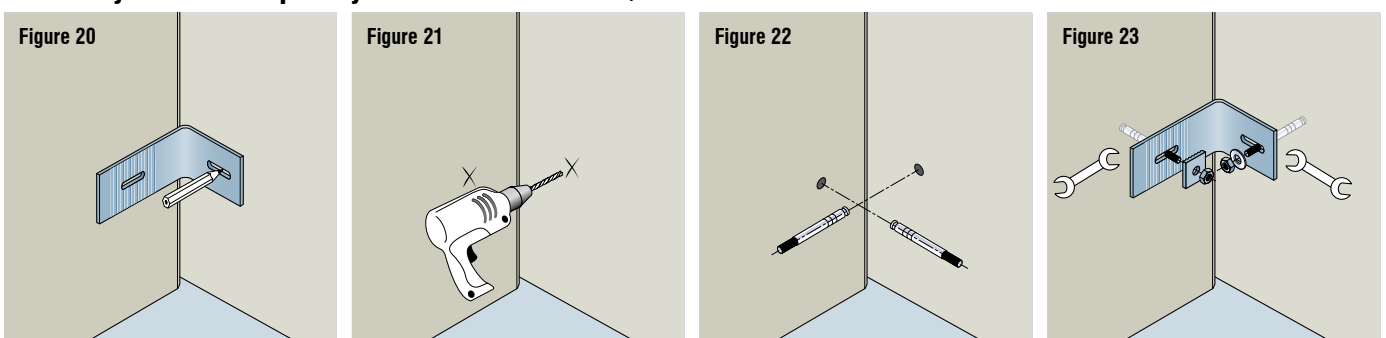
Assembly with PFEIFER-DB anchors



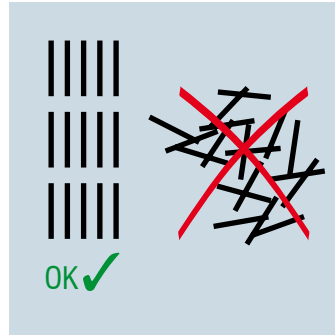
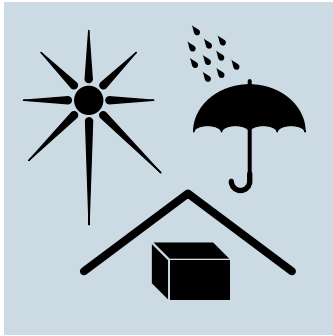
Notice:

Due to the restricted tolerance in the horizontal direction, a mixture of DB anchors with one of the two other anchoring variants is recommended in practice.

Assembly with subsequently fitted anchor dowels/concrete bolts



Storage



LCON fixing brackets and ZS toothed washers are steel structural elements. The surface is hot-dip galvanized. The minimum thickness of the zinc coating is 85 micrometres.

All structural elements must be stored in a dry and protected place. There is an increased risk of corrosion with widely fluctuating temperatures, moisture in combination with de-icing salt or in areas near the sea. Structural elements with damage caused by corrosion must not be fitted!



Lifting Anchor Systems
Thread System



Lifting Anchor Systems
BS Anchor System



Lifting Anchor Systems
WK Anchor System



Fixing Systems
DB Anchor 682
for Permanent Fixing



Fixing Systems
Socket Dowels
Polyamide Sockets



Fixing Systems
HK Assembly Anchor System



Connection Systems
Column Shoe System
Wall Shoe System



Connection Systems
Stell Bearing
Staircase Bearing VarioSonic



Connection Systems
Sandwich Anchor System
Delta Anchor System



Connection Systems
Concrete Earthing System BEB



Reinforcement Systems
VS®-Wire Rope Loop System



Reinforcement Systems
PH Reinforcement Continuity System



Cable Tension Members
Tension Rod System



Attachment Materials
(Wire Ropes, Chains, Textiles)



Lashing Systems



Grabs for Reinforcing Steel
Balancing Spreader Beams

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