

**TECHNICAL DATA SHEET**

# KFX Concrete Screw Bolt - Large Pan Head (M6x40)

## High Performance Concrete Anchor

**Fast & Easy Installation**

Optimised thread enables fast cutting into concrete, speeding up the installation process.

**Non-Expansion**

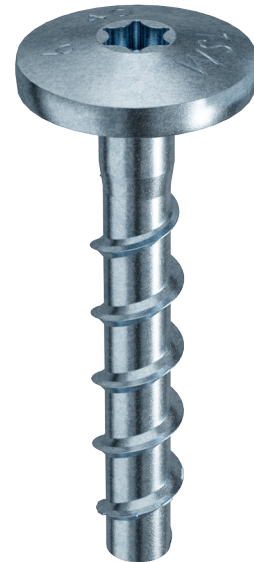
Allows for installation closer to the substrate edge, as well as closer distances between anchors.

**Easily Adjusted & Removed**

Can be adjusted twice during installation. Once installed can be easily removed suiting temporary applications.

**Extreme Hold in Concrete**

Special thread geometry offers extreme hold in concrete. for both tensile & shear loads.

**Order Code 03676****APPROVALS****Approvals**

ETA Approval ETA-23/0946:

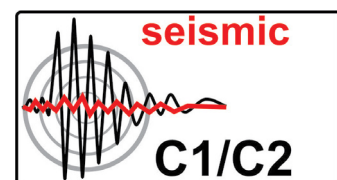
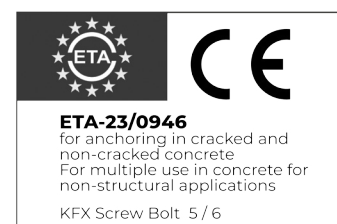
- For use in concrete for redundant non-structural systems.

**Base Material**

Approved for concrete strength classes from C20/25 to C50/60.

Cracked and non-cracked concrete.

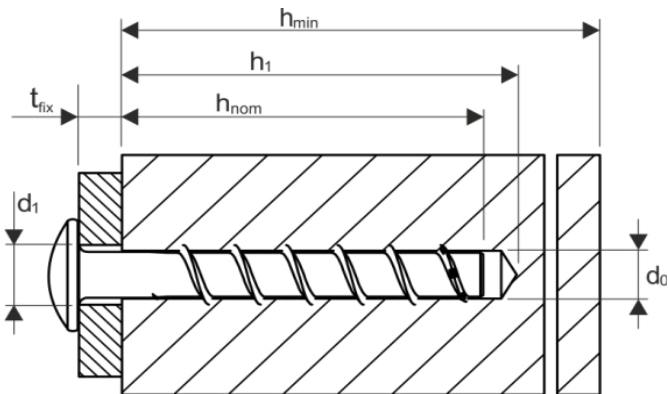
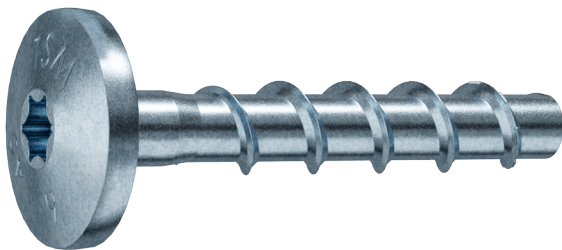
Prestressed hollow core slabs.



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Product Overview

Steel - Zinc plated  
Large pan head with Torx TX30 internal drive  
Head Ø - 18mm



Order Code	Product Reference	Dimensions	Depth of drill hole $h_{1,1} / h_{1,2}$	Embedment depth of anchor $h_{nom,1} / h_{nom,2}$	Max. thickness of fixture $t_{fix,1} / t_{fix,2}$	Packing Unit
03676	KFX BDZ-06040	M6x40	40mm / - / -	35mm / - / -	5mm / - / -	200

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## Technical Characteristics

## Single fastening without fire exposure (steel)

Screw size: M6		M6
Nominal embedment depth	$h_{nom}$ [mm]	$h_{nom1}$ $h_{nom2}$
		40 55
Nominal diameter of drill bit	$d_o$ [mm]	6
Depth of drill hole	$h_o$ min [mm]	45 60
Effective anchorage depth	$h_{ef}$ [mm]	31 44
Diameter of clearance hole in the fixture	$d_f$ max [mm]	8
Approved tension load in cracked concrete <sup>1) 2)</sup>	$N_{zul}$ [kN]	1,0 1,9
Approved shear load in cracked concrete <sup>1) 2)</sup>	$V_{zul}$ [kN]	2,8 4,0
Approved tension load in non-cracked concrete <sup>1) 2)</sup>	$N_{zul}$ [kN]	1,9 4,3
Approved shear load in non-cracked concrete <sup>1) 2)</sup>	$V_{zul}$ [kN]	4,0 4,0
Approved bending resistance	$M_{zul}$ [kN]	6,2
Minimum edge distance	$C_{min}$ [mm]	40
Minimum spacing	$S_{min}$ [mm]	40
Minimum base material thickness	$h_{min}$ [mm]	100
Installation torque (with metric connection thread)	$T_{inst}$ [Nm]	10
Maximum torque (with impact screw driver)	[Nm]	160
ETA Seismic C1	C1	Yes
ETA Seismic C2 <sup>3)</sup>	C2	x

## Single fastening under fire exposure (steel)

Screw size M6		M6			
Nominal embedment depth	$h_{nom}$ [mm]	$h_{nom1}$	$h_{nom2}$		
		40	55		
Approved load under tensile and shear use ( $F_{zul,fi} = N_{zul,fi} = V_{zul,fi}$ )					
Fire resistance class					
R 30	Approved load	$F_{zul,fi 30}$	[kN]	0,5	0,9
R 60		$F_{zul,fi 60}$	[kN]	0,5	0,8
R 90		$F_{zul,fi 90}$	[kN]	0,5	0,6
R 120		$F_{zul,fi 120}$	[kN]	0,4	
R 30		$M_{zul,fi 30}$	[Nm]	0,7	
R 60		$M_{zul,fi 60}$	[Nm]	0,6	
R 90		$M_{zul,fi 90}$	[Nm]	0,5	
R 120		$M_{zul,fi 120}$	[Nm]	0,3	
Edge distance					
R 30 to R 120	$C_{cr,fi}$	[mm]	$2 \times h_{ef}$		
The edge distance must be at least 300 mm if the fire load attacks from more than one side.					
Spacing					
R 30 to R 120	$S_{cr,fi}$	[mm]	$4 \times h_{ef}$		
Concrete pry-out failure					
R 30 to R 120	k	[-]	1,0		
In wet concrete, the embedment depth must be increased by at least 30 mm.					

<sup>1)</sup> For the determination of the approved loads, the partial safety factor from the approval  $\gamma_M=1,0$  was taken into account for material resistance and a partial safety factor  $\gamma_F=1,4$  for load actions.

<sup>2)</sup> These values apply without influence of the spacing and edge distances. <sup>3)</sup> C2 only for version zinc plated.

## TECHNICAL DATA SHEET

## Multiple fastening without fire exposure (steel)

Screw size M6		M6
Nominal embedment depth	$h_{nom}$ [mm]	35   55
Nominal diameter of drill bit	$d_o$ [mm]	6
Depth of drill hole	$h_o$ min [mm]	40   60
Effective anchorage depth	$h_{ef}$ [mm]	27   44
Diameter of clearance hole in the fixture	$d_f$ max [mm]	8
Approved tension load in cracked concrete <sup>1);2)</sup>	$N_{zul}$ [kN]	1,4   3,6
Approved shear load in cracked concrete <sup>1);2)</sup>	$V_{zul}$ [kN]	2,3   4,8
Approved tension load in non-cracked concrete <sup>1);2)</sup>	$N_{zul}$ [kN]	1,4   3,6
Approved shear load in non-cracked concrete <sup>1);2)</sup>	$V_{zul}$ [kN]	3,3   4,0
Minimum edge distance	$C_{min}$ [mm]	35   40
Minimum spacing	$S_{min}$ [mm]	35   40
Minimum base material thickness	$h_{min}$ [mm]	80   100
Installation torque (with metric connection thread)	$T_{inst}$ [Nm]	10
Maximum torque (with impact screw driver)	[Nm]	160

<sup>1)</sup> For the determination of the approved loads, the partial safety factor from the approval  $\gamma_M=1,0$  was taken into account for material resistance and a partial safety factor  $\gamma_F=1,4$  for load actions.

<sup>2)</sup> These values apply without influence of the space and edge distancing.

## Multiple fastening under fire exposure (steel)

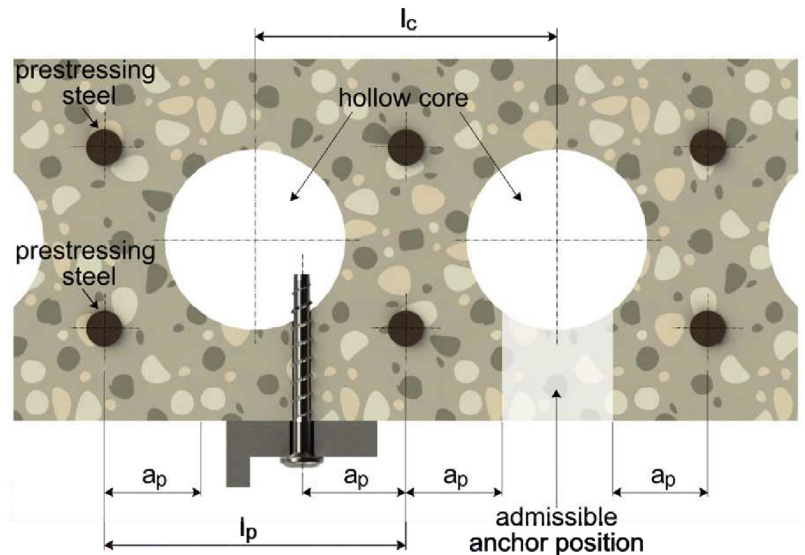
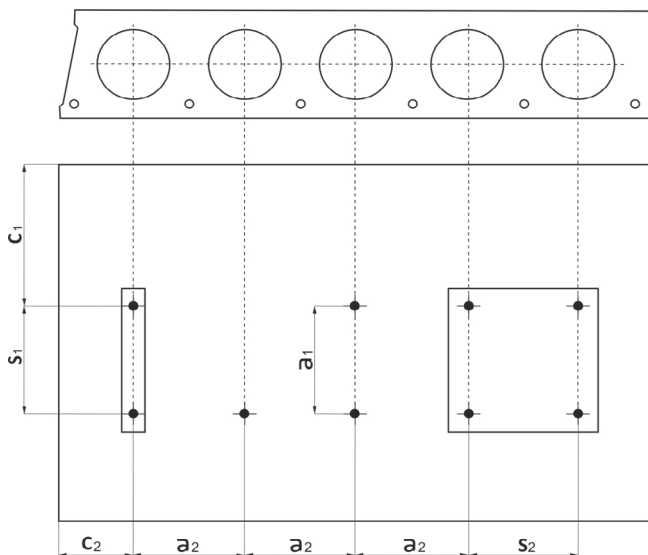
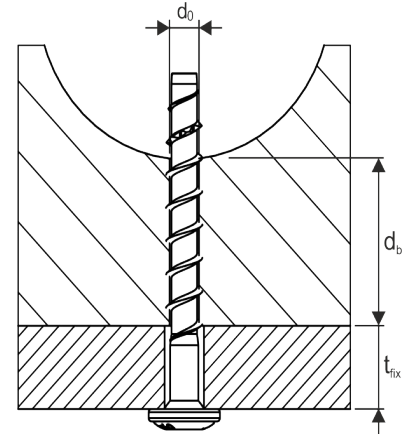
Screw size M6		M6		
Nominal embedment depth	$h_{nom}$ [mm]	$h_{nom1}$	$h_{nom2}$	
		35	55	
Approved load under tensile and shear use ( $F_{zul,fi} = N_{zul,fi} = V_{zul,fi}$ )				
Fire resistance class				
R 30	Approved load	$F_{zul,fi 30}$ [kN]	0,8	0,9
R 60		$F_{zul,fi 60}$ [kN]	0,8	0,8
R 90		$F_{zul,fi 90}$ [kN]	0,6	
R 120		$F_{zul,fi 120}$ [kN]	0,4	
R 30		$M_{zul,fi 30}$ [Nm]	0,7	
R 60		$M_{zul,fi 60}$ [Nm]	0,6	
R 90		$M_{zul,fi 90}$ [Nm]	0,5	
R 120		$M_{zul,fi 120}$ [Nm]	0,3	
Edge distance				
R 30 to R 120	$C_{cr,fi}$	[mm]	$2 \times h_{ef}$	
The edge distance must be at least 300 mm if the fire load attacks from more than one side.				
Spacing				
R 30 to R 120	$S_{cr,fi}$	[mm]	$4 \times h_{ef}$	
Concrete pry-out failure				
R 30 to R 120	k	[-]	1,0	
In wet concrete, the embedment depth must be increased by at least 30 mm.				

# TECHNICAL DATA SHEET

## Multiple fastening in pre-stressed hollow core slabs without fire exposure (steel)

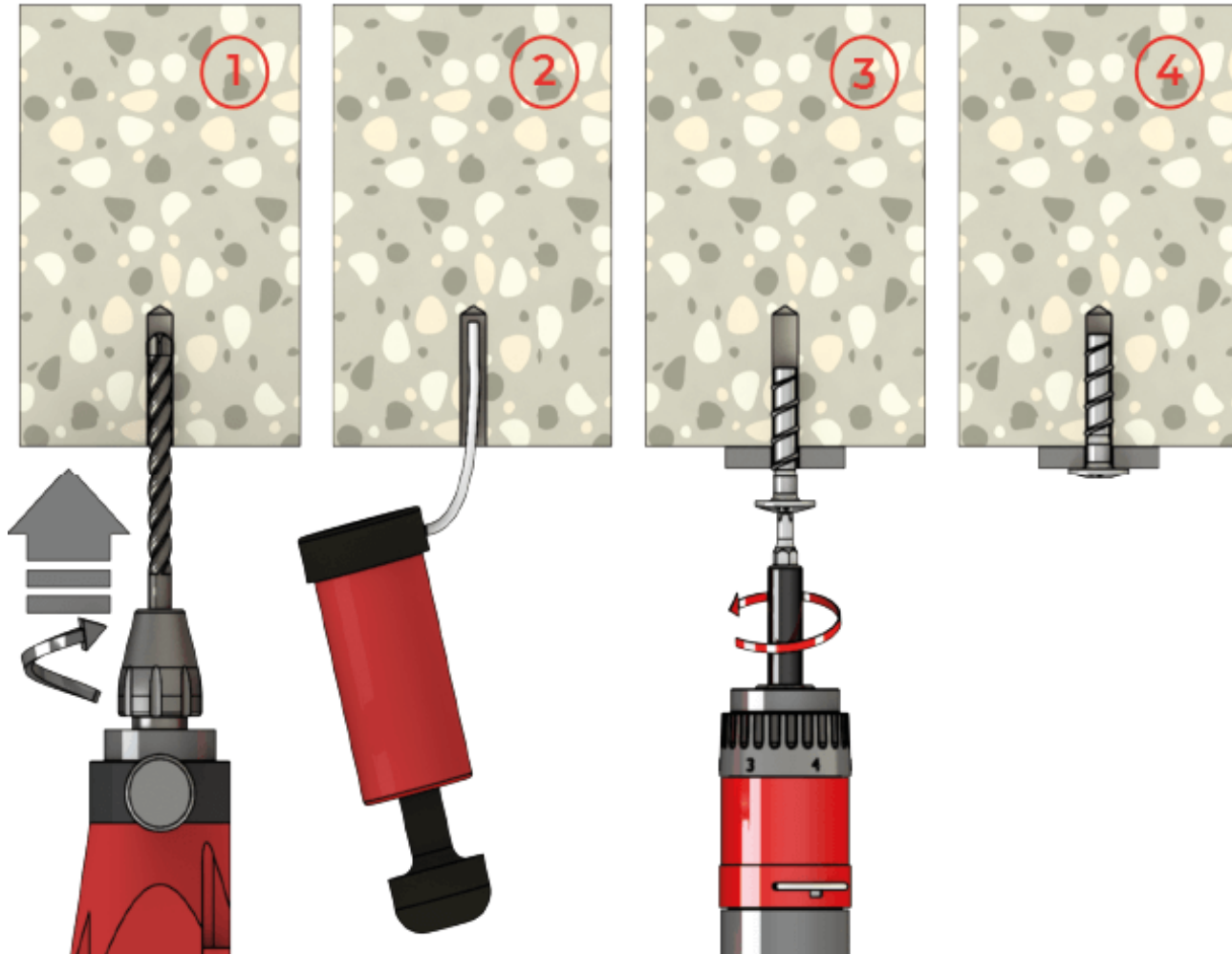
Screw size M6			M6		
Bottom flange thickness	$d_b$	[mm]	$\geq 25$	$\geq 30$	$\geq 35$
Nominal diameter of drill bit	$d_o$	[mm]	6		
Depth of drill hole	$h_o$ min	[mm]	30	35	40
Clearance hole diameter	$d_i$ max	[mm]	8		
Approved tension load <sup>1)</sup>	$F_{zul}$	[kN]	0,5	1,0	1,4
Minimum edge distance	$C_{min}$	[mm]	100		
Minimum spacing	$S_{min}$	[mm]	100		
Minimum distance between anchor groups	$a_{min}$	[mm]	100		
Core distance	$l_c$ min	[mm]	100		
Prestressing steel distance	$l_p$ min	[mm]	100		
Distance between anchor position & prestressing steel	$a_p$ min	[mm]	50		
Hollow core width (w)	(w/e) max [mm]		4,2		
Bridge width (e)					
Installation torque	$T_{inst}$	[Nm]	10		

<sup>1)</sup> For the determination of the approved loads, the partial safety factor from the approval  $\gamma_M=1,0$  was taken into account for material resistance and a partial safety factor  $\gamma_F=1,4$  for load actions.



$C_1, C_2$  = Edge distance  
 $S_1, S_2$  = Spacing  
 $a_1, a_2$  = Distance between anchor groups

$l_c$  = Core distance  
 $l_p$  = Prestressing steel distance  
 $a_p$  = Distance between anchor position & prestressing steel

**TECHNICAL DATA SHEET****Installation Instructions****Installation instructions for concrete**

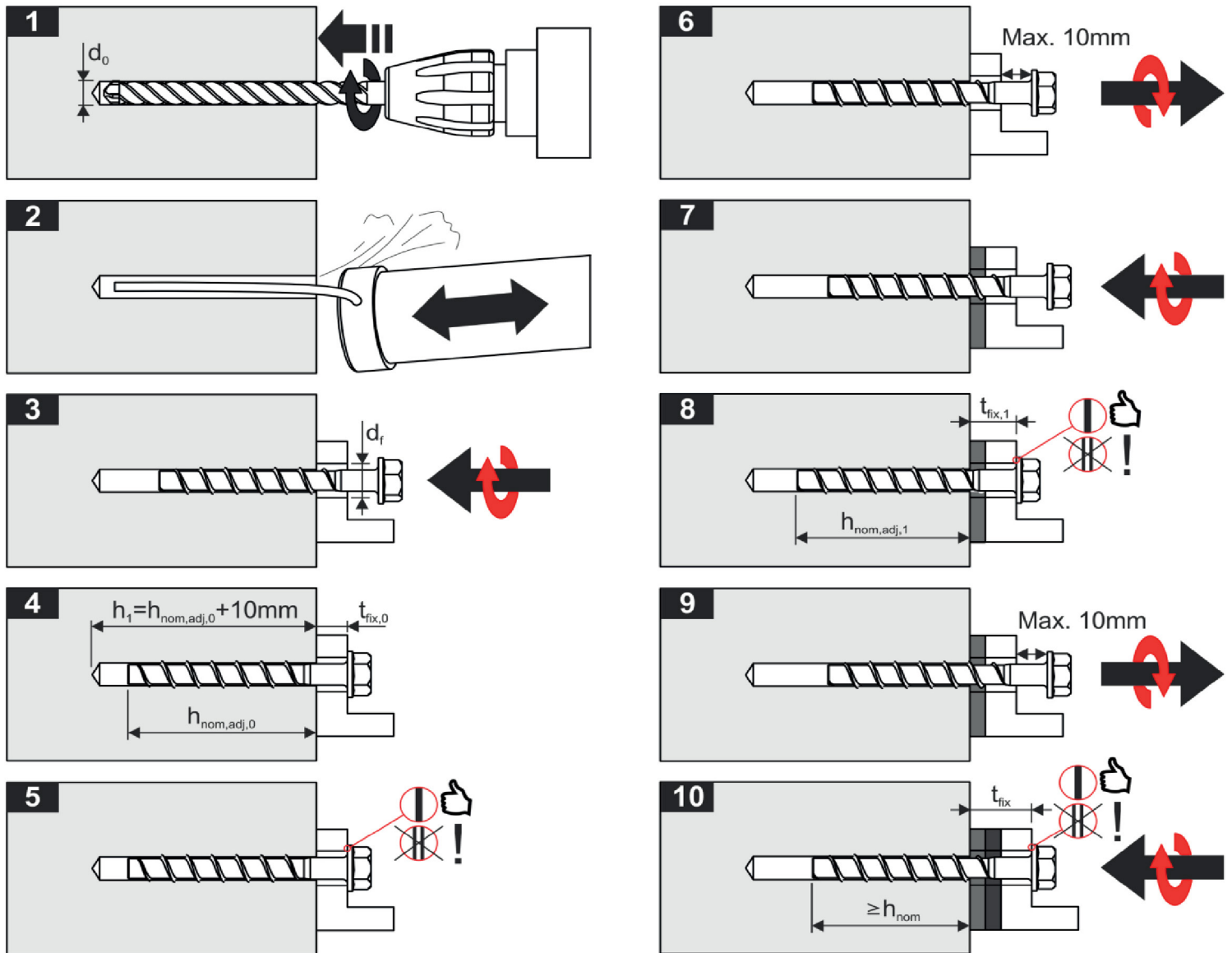
1. Drill the hole to required depth using with rotary hammer drill.
2. Thoroughly clean the hole using blow out hand pump (min 4 pumps).
3. Screw in the KFX Concrete Screw Bolt and tighten to the correct torque using a calibrated torque wrench.
4. Once installed, the screwhead must be secure and completely flush with the undamaged substrate surface.

**Tools Required:**

- SDS drill with 6mm drill bit
- Blow out pump
- Cordless screwdriver with a Torx TX30 head
- Torque wrench

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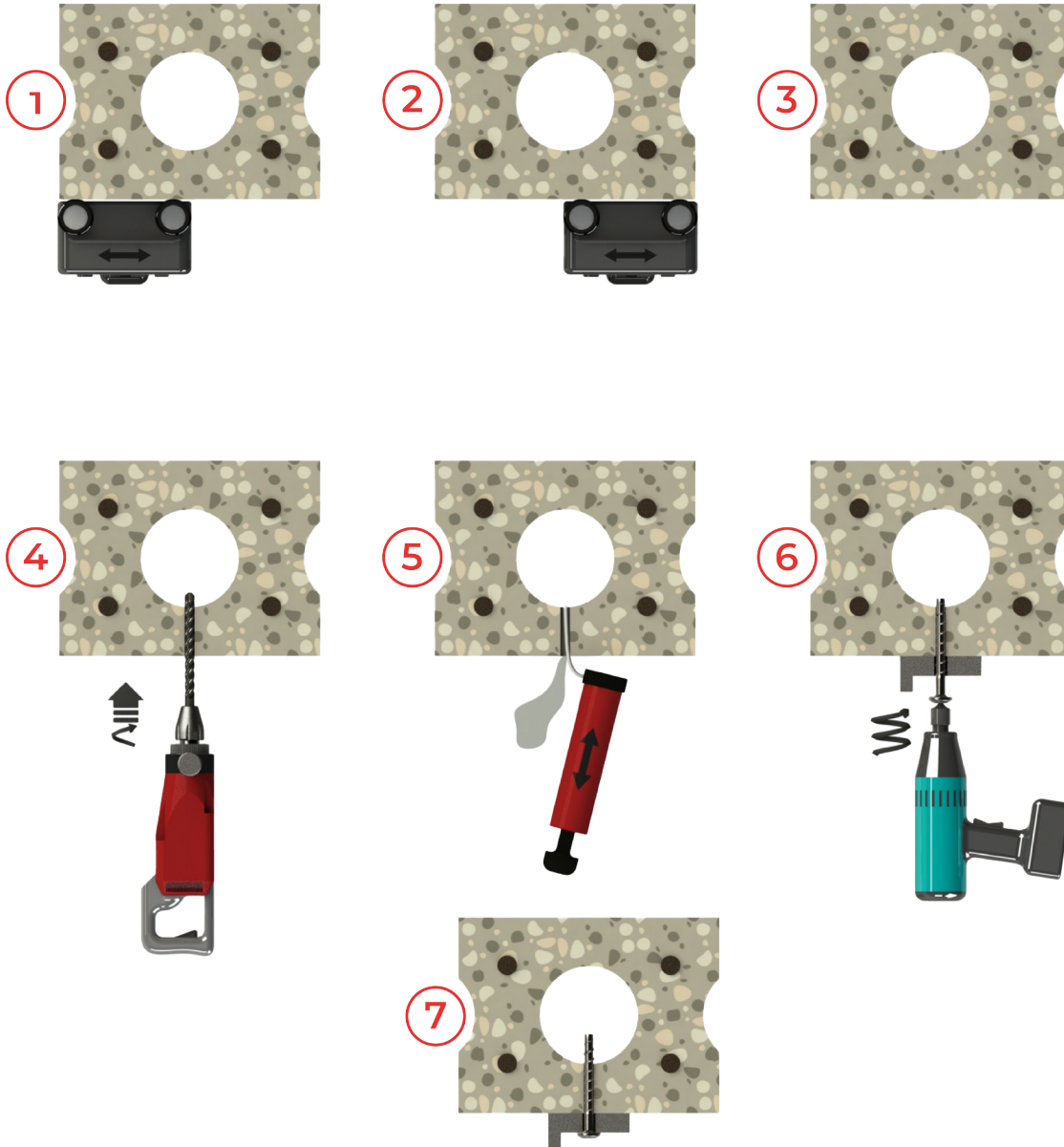
## Installation instructions with adjustment for M6 screws



Important - please note during adjustment:

- The anchor may be adjusted no more than twice, whilst the anchor may be unscrewed a maximum of 10mm.
- The total allowed thickness of shims added during the adjustment process is 10mm.
- The final embedment depth after adjustment process must be equal or longer than  $h_{nom}$ .



**TECHNICAL DATA SHEET****Installation instructions for prestressed hollow core slabs**

- 1) - 3) Locate prestressed steel with a reinforcement bar detector and mark the location.
- 4) Create a hole in the permissible anchoring area.
- 5) Clean hole using blow out hand pump (min 4 pumps).
- 6) Screw in the KFX Concrete Screw Bolt and tighten to the correct torque using a calibrated torque wrench.
- 7) Once installed, the screwhead must be secure and completely flush with the undamaged substrate surface.