

## TECHNICAL DATA SHEET

# KFX Anchor Fixing M10 Flush Insert Socket - M12x40

## Female Threaded Screw for Various Substrates

### Easy Installation

Easy, fast and safe installation using an impact screwdriver, making overhead work much simpler.

### Flush Head

Flush surface installation creates a clean appearance without any protruding elements.

### Internal Thread

The internal thread allows use in a wide range of applications.

### High Load Values

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

### Small Edge Distances

Allows installation closer to the edge of the substrate as well as enabling anchors to be placed closer together.



**Order Code 03732**

## APPROVALS

### Approvals

ETA Approval ETA-23/0542.

- For use cracked and un-cracked concrete
- For multiple use in concrete for non-structural applications.

### Base Material

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

Cracked and non-cracked concrete.

Suitable for masonry and wood.



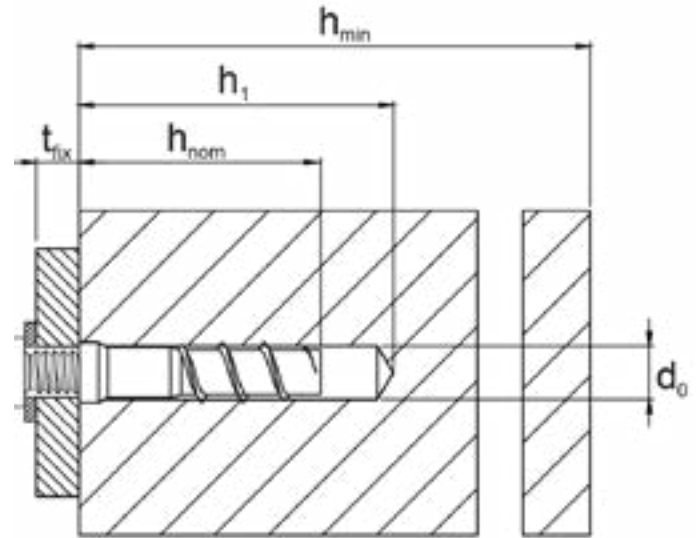
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## Product Overview

Steel - Zinc plated

Ø Male Thread Size - 12mm

Ø Internal Female Thread - TX60 / M10



Order Code	Product Reference	Dimensions	Depth of drill hole $h_1$	Embedment depth $h_{nom}$	Length of female thread $L_{Gew}$	Packing Unit
03732	KFX FIZ-12040	M12x40 / (i)*M10x10   TX60	50mm	40mm	10mm	100

\*(i) = Internal thread dimensions

## Accessories

1/2" Impact Socket TX



Order Code	Product Reference	For KFX Anchor:	Description	Size	TX	Packing Unit
03742	KFX IST-00060	03732	1/2" Impact Socket TX	12	60	1

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## Technical Characteristics

### Multiple fastening without fire exposure (steel)

Screw size:			M12 / (i)M10
Nominal embedment depth	$h_{nom}$	[mm]	40
Nominal diameter of drill bit	$d_0$	[mm]	12
Depth of drill hole	$h_{min}$	[mm]	50
Effective anchorage depth	$h_{ef}$	[mm]	30
Diameter of clearance hole in the fixture	$d_v \max$	[mm]	12
Minimum edge distance	$C_{min}$	[mm]	40
Minimum spacing	$S_{min}$	[mm]	40
Minimum base material thickness	$h_{min}$	[mm]	80
Installation torque (for metrical thread)	$T_{inst}$	[Nm]	15
Minimum screw-in depth metrical thread		[mm]	8
Maximum torque (with impact screwdriver)		[Nm]	180
Permissible load for metrical thread of tension class 4.8			
Permissible tension load in cracked concrete <sup>1) 3)</sup>	$N_{per}$	4.8	[kN] 1,8
Permissible shear load in cracked concrete <sup>2) 3)</sup>	$V_{per}$	4.8	[kN] 2,3
Permissible tension load in uncracked concrete <sup>1) 3)</sup>	$N_{per}$	4.8	[kN] 2,2
Permissible shear load in uncracked concrete <sup>2) 3)</sup>	$V_{per}$	4.8	[kN] 3,2
Permissible bending moment <sup>2) 3)</sup>	$M_{per}$	4.8	[kN] 13,7
Permissible load for metrical thread of tension class 5.8			
Permissible tension load in cracked concrete <sup>1) 3)</sup>	$N_{per}$	5.8	[kN] 1,8
Permissible shear load in cracked concrete <sup>2) 3)</sup>	$V_{per}$	5.8	[kN] 2,3
Permissible tension load in uncracked concrete <sup>1) 3)</sup>	$N_{per}$	5.8	[kN] 2,2
Permissible shear load in uncracked concrete <sup>2) 3)</sup>	$V_{per}$	5.8	[kN] 3,2
Permissible bending moment <sup>2) 3)</sup>	$M_{per}$	5.8	[kN] 13,7
Permissible load for metrical thread of tension class 8.8			
Permissible tension load in cracked concrete <sup>1) 3)</sup>	$N_{zul}$	8.8	[kN] 1,8
Permissible shear load in cracked concrete <sup>2) 3)</sup>	$V_{zul}$	8.8	[kN] 2,3
Permissible tension load in uncracked concrete <sup>1) 3)</sup>	$N_{zul}$	8.8	[kN] 2,2
Permissible shear load in uncracked concrete <sup>2) 3)</sup>	$V_{zul}$	8.8	[kN] 3,2
Permissible bending moment <sup>2) 3)</sup>	$M_{zul}$	8.8	[kN] 13,7

<sup>1)</sup> For the determination of the approved loads, the partial safety factor from the approval  $\gamma_M=1,5$  was taken into account for material resistance and a partial safety factor of  $\gamma_F=1,4$  for load actions.

<sup>2)</sup> For the determination of the approved loads, the partial safety factor from the approval  $\gamma_M=1,25$  was taken into account for material resistance and a partial safety factor of  $\gamma_F=1,4$  for load actions.

<sup>3)</sup> These values apply without influence of the spacing and edge distances.

# TECHNICAL DATA SHEET

## Multiple fastening under fire exposure, steel

Screw size				M12 / (i)M10
Nominal embedment depth		$h_{nom}$	[mm]	40
Permissible load under tensile and shear use ( $F_{per,fi} = N_{per,fi} = V_{per,fi}$ ) <sup>1)2)</sup>				
Fire resistance class				
R 30	Approved load	$F_{per,fi 30}$	[kN]	0,8
R 60		$F_{per,fi 60}$	[kN]	0,8
R 90		$F_{per,fi 90}$	[kN]	0,8
R 120		$F_{per,fi 120}$	[kN]	0,7
R 30		$M_{per,fi 30}$	[Nm]	4,28
R 60		$M_{per,fi 60}$	[Nm]	3,12
R 90		$M_{per,fi 90}$	[Nm]	1,97
R 120		$M_{per,fi 120}$	[Nm]	1,39
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 of  $\gamma_F=1,0$  for load actions.

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

# TECHNICAL DATA SHEET

## Technical Characteristics For Wood

### Recommended loads for pure tensile stress

Screw size			M12 / (i)M10		
KLED *			Perm.	Medium	Short
k <sub>mod</sub> *			0,6	0,8	1
VH *	BSH *	pk [kg/m <sup>3</sup> ]	Recommended loads for NKL1 and NKL2 F <sub>ax,zul</sub> [kN] <sup>1) 2) 3)</sup>		
C16		310	0,6	0,7	0,8
C20		330	0,6	0,7	0,9
C22	GL20h	340	0,6	0,7	0,9
C24		350	0,6	0,7	0,9
	GL20c	355	0,6	0,7	0,9
	GL24c	365	0,6	0,8	1,0
C30		380	0,7	0,8	1,0
	GL24h	385	0,7	0,8	1,0
C35	GL28c	390	0,7	0,8	1,0
C40	GL32c	400	0,7	0,8	1,0
	GL28h	425	0,7	0,9	1,1
	GL32h	440	0,7	0,9	1,1

\* According to DIN EN 1995-1-1

<sup>1)</sup> A reference bulk density of  $\rho_a = 350 \text{ kg/m}^3$  was used to determine the recommended loads.

<sup>2)</sup> The specified values apply regardless of center and edge distances and for a fixing point  $n_{ef} = 1$ .

<sup>3)</sup> To determine the recommended loads, the partial safety factor  $\gamma_M = 1.3$  was used on the resistance side and a partial safety factor  $\gamma_F = 1.35$  for permanent and  $\gamma_F = 1.5$  for medium/short KLED.

# TECHNICAL DATA SHEET

## Technical Characteristics For Wood

Recommended loads for pure shear force loading for a load-fibre angle of 0°

Screw size			M12 / (i)M10		
KLED *			Perm.	Medium	Short
$k_{mod}$ *			0,6	0,8	1
VH *	BSH *	$\rho_k$ [kg/m <sup>3</sup> ]	Recommended loads for NKL1 and NKL2 with load-fiber angle 0° $F_{v,zul}$ [kN] <sup>1) 2) 3)</sup>		
C16		310	1,7	2,1	2,6
C20		330	1,8	2,2	2,8
C22	GL20h	340	1,9	2,3	2,8
C24		350	1,9	2,3	2,9
	GL20c	355	2,0	2,4	3,0
	GL24c	365	2,0	2,5	3,0
C30		380	2,1	2,5	3,2
	GL24h	385	2,2	2,6	3,2
C35	GL28c	390	2,2	2,6	3,3
C40	GL32c	400	2,2	2,7	3,3
	GL28h	425	2,4	2,8	3,5
	GL32h	440	2,4	2,9	3,7

\* According to DIN EN 1995-1-1

<sup>1)</sup> A reference bulk density of  $\rho_a = 350$  kg/m<sup>3</sup> was used to determine the recommended loads.

<sup>2)</sup> The specified values apply regardless of center and edge distances and for a fixing point  $n_{ef} = 1$ .

<sup>3)</sup> To determine the recommended loads, the partial safety factor  $\gamma_M = 1.3$  was used on the resistance side and a partial safety factor  $\gamma_F = 1.35$  for permanent and  $\gamma_F = 1.5$  for medium/short KLED. The loads were determined with a  $k_{90}$  coefficient in accordance with DIN EN 1995-1-1.

# TECHNICAL DATA SHEET

## Technical Characteristics For Wood

Recommended loads for pure shear force loading for a load-fiber angle of 90°

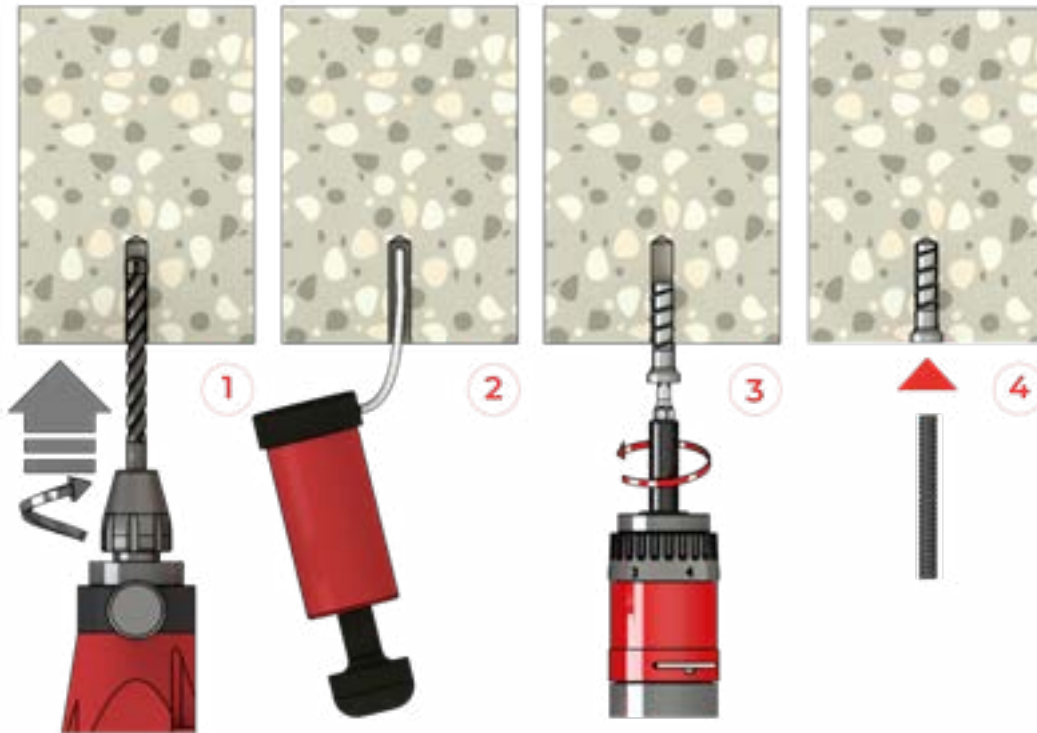
Screw size			M12 / (i)M10		
KLED *			Perm.	Medium	Short
k <sub>mod</sub> *			0,6	0,8	1
VH *	BSH *	pk [kg/m³]	Recommended loads for NKL1 and NKL2 with load-fiber angle 90° F <sub>v,zul</sub> [kN] <sup>1)2)3)</sup>		
C16		310	1,1	1,3	1,7
C20		330	1,2	1,4	1,8
C22	GL20h	340	1,2	1,5	1,8
C24		350	1,3	1,5	1,9
	GL20c	355	1,3	1,5	1,9
	GL24c	365	1,3	1,6	2,0
C30		380	1,4	1,6	2,1
	GL24h	385	1,4	1,7	2,1
C35	GL28c	390	1,4	1,7	2,1
C40	GL32c	400	1,4	1,7	2,2
	GL28h	425	1,5	1,8	2,3
	GL32h	440	1,5	1,9	2,4

\* According to DIN EN 1995-1-1

<sup>1)</sup> A reference bulk density of  $\rho_a = 350 \text{ kg/m}^3$  was used to determine the recommended loads.

<sup>2)</sup> The specified values apply regardless of center and edge distances and for a fixing point  $n_{ef} = 1$ .

<sup>3)</sup> To determine the recommended loads, the partial safety factor  $\gamma_M = 1.3$  was used on the resistance side and a partial safety factor  $\gamma_F = 1.35$  for permanent and  $\gamma_F = 1.5$  for medium/short KLED. The loads were determined with a  $k_{90}$  coefficient in accordance with DIN EN 1995-1-1.

**TECHNICAL DATA SHEET****Installation Instructions**

- 1) Create drill hole with hammerdrill or hollow drill bit.
- 2) Thoroughly clean drill hole.
- 3) Screw in with impact screwdriver or wrench.
- 4) Screw must be screwed in flush with the surface of the concrete.  
The attachment part is fastened with a standard metric screw or

\* The illustration shows the concrete substrate as an example. However, it applies equally to wooden or masonry substrates.