



**HK**

**METAL LIGHT DUTY**




**Technical Datasheet**


**Update: Jan-23**



# HK Light duty metal anchors

## Everyday standard ceiling anchor

Anchor version		Benefits
	HK (M6-M8)	<ul style="list-style-type: none"> <li>- Well proven</li> <li>- Small drill bit diameter</li> <li>- For fixing in cracked concrete, redundant fastening only, e.g. suspended ceilings</li> </ul>
	HK I (M6-M8)	
	HK L (M6-M8)	

Base material	Load conditions
 Concrete (non-cracked)  Tensile zone (redundant fastening)  Redundant fastening	 Fire resistance

Other information
 European Technical Approval  CE conformity

### Approvals / certificates

Description	Authority / Laboratory	No. / date of issue
European technical assesment <sup>a)</sup>	DIBt, Berlin	ETA-04/0043, 2018-04-25
Fire test report	DIBt, Berlin	ETA-04/0043, 2018-04-25
Assessment fire report	warringtonfire	WF 327804/A / 2013-07-10

a) All data given in this section for HK Ceiling anchor according ETA-04/0043, issue 2018-04-25. The anchor is to be used only for multiple use for non-structural applications.

## Basic loading data (for a single anchor)

### All data in this section applies to:

- Correct setting (See setting instruction)
- No edge distance and spacing influence
- Concrete C20/25 to C50/60
- Non-cracked concrete:  $f_{ck,cube} \geq 25 \text{ N/mm}^2$
- Anchors in multiple use

### Anchorage depth

Anchor size (Carbon steel)		HK6 / HK6-R / HK6-HCR	HK6 L / HK6L-R / HK6L-HCR	HK8 / HK8-R / HK8-HCR
Effective anchorage depth	$h_{ef} \geq$ [kN]	26	36	36

### Characteristic resistance

Anchor size (Carbon steel)		HK6	HK6 L	HK8 I
Resistance	$F_{Rk}^{a)}$ [kN]	2,0	5,0	5,0
Anchor size (Stainless steel, HCR)		HK6 -R / -HCR	HK6 L -R / -HCR	HK8 I -R / -HCR
Resistance	$F_{Rk}^{a)}$ [kN]	1,5	3,0	5,0

a) For all load directions (tension, shear and combined tension and shear loads)

### Design resistance

Anchor size (Carbon steel)		HK6	HK6 L	HK8 I
Resistance	$F_{Rd}^{a)}$ [kN]	1,3	2,4	2,4
Anchor size (Stainless steel, HCR)		HK6 -R / -HCR	HK6 L -R / -HCR	HK8 I -R / -HCR
Resistance	$F_{Rd}^{a)}$ [kN]	0,7	1,4	2,8

a) For all load directions (tension, shear and combined tension and shear loads)

### Recommended loads<sup>b)</sup>

Anchor size (Carbon steel)		HK6	HK6 L	HK8 I
Resistance	$F_{Rec}^{a)}$ [kN]	0,9	1,7	1,7
Anchor size (Stainless steel, HCR)		HK6 -R / -HCR	HK6 L -R / -HCR	HK8 I -R / -HCR
Resistance	$F_{Rec}^{a)}$ [kN]	0,5	1,0	2,0

a) For all load directions (tension, shear and combined tension and shear loads)

b) With overall partial safety factor for action  $\gamma = 1,4$ . The partial safety factors for action depend on the type of loading and shall be taken from national regulations.

### Requirements for multiple use

The definition of multiple use according to Member State is given in EN 1992-4 and CEN/TR 17079. In Absence of a definition by a Member State the following default values may be taken.

Minimum number of fixing points	Minimum number of anchors per fixing point	Maximum design load of action $N_{sd}$ per fixing point <sup>a)</sup>
3	1	2 kN
4	1	3 kN



## Fire resistance

### All data in this section applies to:

- Correct setting (See setting instruction)
- No edge distance and spacing influence
- Steel failure
- Minimum base material thickness
- Concrete C 20/25,  $f_{ck,cyl} = 20 \text{ N/mm}^2$  (EN 1992-4 design)
- partial safety factor for resistance under fire exposure  $\gamma_{M,fi}=1,0$  (in absence of other national regulations)

### Anchorage depth

Anchor size (Carbon steel)		HK6 / HK6-R / HK6-HCR	HK6 L / HK6L-R / HK6L-HCR	HK8 / HK8-R / HK8-HCR
Effective anchorage depth	$h_{ef} \geq$ [kN]	26	36	36

### Characteristic resistance

Anchor size (Carbon steel)		HK6 / HK6-R / HK6-HCR	HK6 L / HK6L-R / HK6L-HCR	HK8 / HK8-R / HK8-HCR
<b>Fire exposure R30</b>				
Resistance	$F_{Rk,fi}^{a)}$ [kN]	0,3	0,6	1,2
<b>Fire exposure R120</b>				
Resistance	$F_{Rk,fi}^{a)}$ [kN]	0,2	0,2	0,4

a) For all load directions (tension, shear and combined tension and shear loads)

### Design resistance

Anchor size (Carbon steel)		HK6 / HK6-R / HK6-HCR	HK6 L / HK6L-R / HK6L-HCR	HK8 / HK8-R / HK8-HCR
<b>Fire exposure R30</b>				
Resistance	$F_{Rd,fi}^{a)}$ [kN]	0,3	0,6	1,2
<b>Fire exposure R120</b>				
Resistance	$F_{Rd,fi}^{a)}$ [kN]	0,2	0,2	0,4

a) For all load directions (tension, shear and combined tension and shear loads)

For more information about different failure modes and fire resistance times please see the full ETA-04/0043 report.

### Requirements for multiple use

The definition of multiple use according to Member State is given in EN 1992-4 and CEN/TR 17079. In Absence of a definition by a Member State the following default values may be taken.

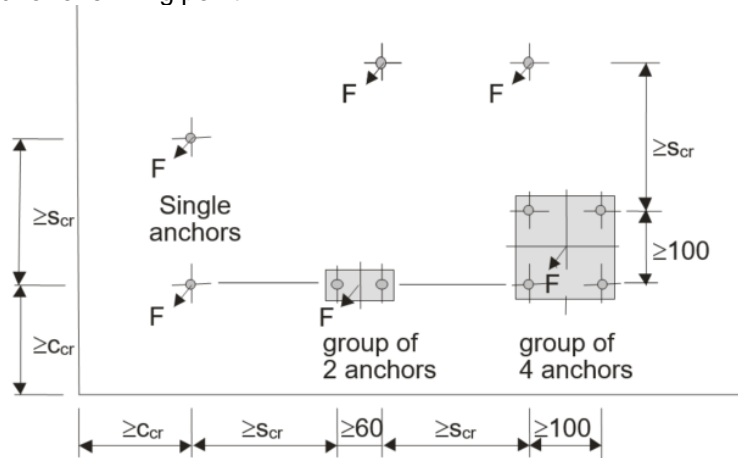
Minimum number of fixing points	Minimum number of anchors per fixing point	Maximum design load of action $N_{sd}$ per fixing point <sup>a)</sup>
3	1	2 kN
4	1	3 kN

**Special case: Groups of n=2 and /or n=4 anchors with small spacing:**

The basic loading data for a single anchor is valid for one fixing point.

Fixing point can be:

- **Single anchors**
- **Groups of 2 anchors**  
With  $s_1 \geq 60\text{mm}$
- **Groups of 4 anchors**  
With  $s_1 \geq 100\text{ mm}$  and  $s_{s1} \geq 100$



**Materials**

**Mechanical properties**

Anchor size (carbon steel)	HK6	HK6-L	HK8-I
Characteristic bending resistance $M^0_{Rk,s}$ [Nm]	3,6	7,7	18
Anchor size (Stainless steel, HCR)	HK6 -R / -HCR	HK6 L -R / -HCR	HK8 I -R / -HCR
Characteristic bending resistance $M^0_{Rk,s}$ [Nm]	4,0	8,4	20,6

**Material quality**

Part	Marking	Material
HK6 HK6 L HK8 I	K6 K6L K8	Galvanized steel $\geq 5\mu\text{m}$
HK6-R HK6 L-R HK8 I-R	K6E K6LE K8E	Stainless steel 1.4401 or 1.4404
	K6X K6LX K8X	Stainless steel 1.4571
HK6-HCR HK6 L-HCR HK8 I-HCR	K6C K6LC K8C	High corrosion resistant steel 1.4529 or 1.4565



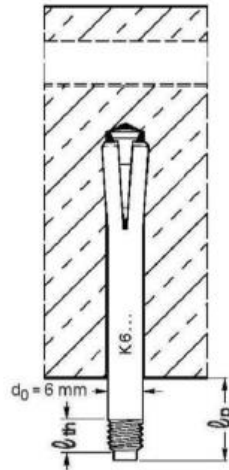
### Anchor dimension

Anchor size	HK6	
	HK6 M6/t <sub>fix</sub>	HK6 M8/t <sub>fix</sub>
Thread size	External thread M6	External thread M8
Setting tool	HSM 6/t <sub>fix</sub>	HSM 8/t <sub>fix</sub>
Length of thread l <sub>th</sub> [mm]	5 ≤ l <sub>th</sub> ≤ 50	
Max. thickness of fixture t <sub>fix</sub> [mm]	t <sub>fix</sub> = l <sub>p</sub> - 7	

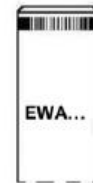
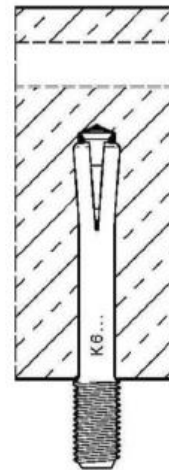
Stop drill bit SDS 1



HK6 M6/t<sub>fix</sub>



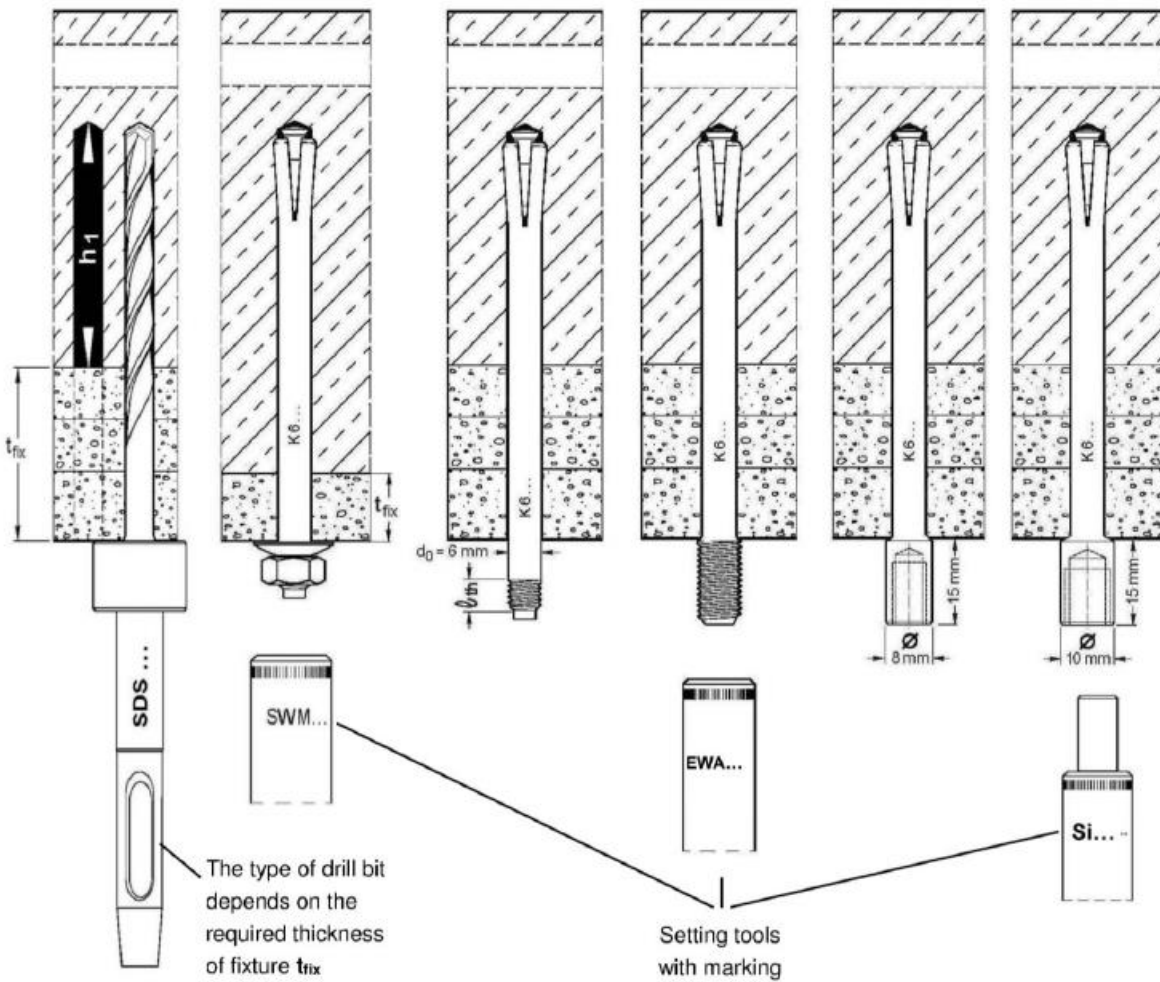
HK6 M8/t<sub>fix</sub>



Setting tool with marking

### Anchor dimension

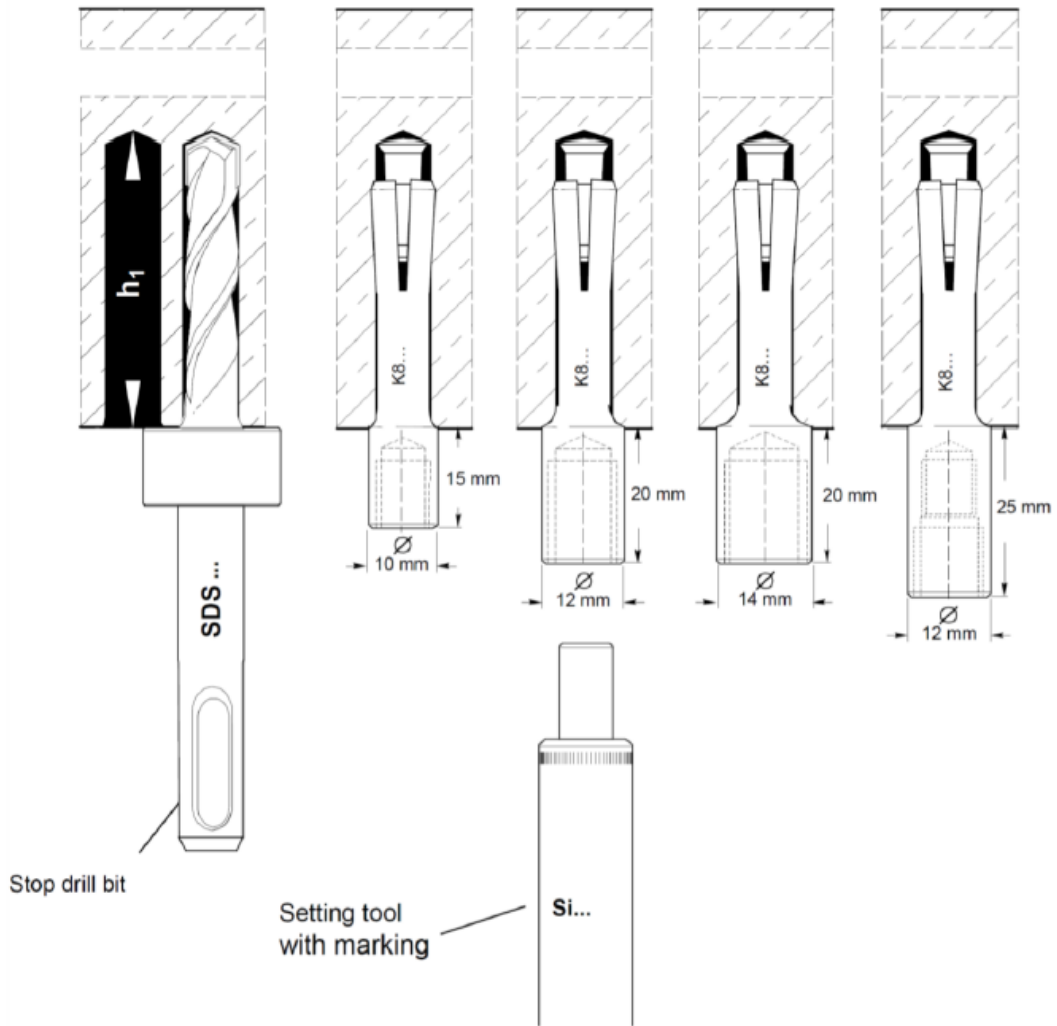
Anchor size		HK6 L				
		HK M6/4 L	HK6 M6/ $t_{fix}$ L	HK6 M8/ $t_{fix}$ L	HK6-I M6 L	HK6-I M8 L
Thread size		External thread M6	External thread M6	External thread M8	Internal thread M6	Internal thread M6
Setting tool		HSM 6/4	HSM 6/ $t_{fix}$	HSM 8/ $t_{fix}$	HSM I M6	HSM I M8
Length of thread	$l_{th}$ [mm]	$\geq 5$	$\geq 5$	$\geq 5$	-	-
Max. thickness of fixture	$t_{fix}$ [mm]	4	$t_{fix} \leq 300$	$t_{fix} \leq 300$	-	-
Available thread length	[mm]	-	-	-	6 to 12	8 to 12





**Anchor dimension**

Anchor size	HK8 I			
	HK8 I M8	HK8 I M10	HK8 I M12	HK8 I M8/M10
Thread size	Internal thread M8	Internal thread M10	Internal thread M12	Internal thread M8 / M10
Setting tool	HSM 8 I M8	HSM 8 I M10	HSM 8 I M12	HSM 8 I M8
Available thread length [mm]	8 to 10	10 to 15	12 to 15	<b>M8:</b> 8 to 10 <b>M10:</b> 10





## Setting

### Setting details

Anchor size			HK6				
			HK6 M6/t <sub>fix</sub>		HK6 M8/t <sub>fix</sub>		
Depth of drill hole <sup>a)</sup>	$h_1$	[mm]	32				
Nominal diameter of drill bit	$d_0$	[mm]	6				
Maximum diameter of clearance hole in the fixture	$d_f \leq$	[mm]	7		9		
Max. torque moment	$T_{max}$	[Nm]	5				
Anchor size			HK6 L				
			HK M6/4 L	HK6 M6/t <sub>fix</sub> L	HK6 M8/t <sub>fix</sub> L	HK6-I M6	HK6-I M8 L
Depth of drill hole <sup>a)</sup>	$h_1$	[mm]	42				
Nominal diameter of drill bit	$d_0$	[mm]	6				
Maximum diameter of clearance hole in the fixture	$d_f \leq$	[mm]	7	7	9	9	12
Max. torque moment	$T_{max}$	[Nm]	5				
Anchor size			HK8 I				
			HK8 I M8	HK8 I M10	HK8 I M12	HK8 I M8/M10	
Depth of drill hole <sup>a)</sup>			43				
Setting tool			12	14	16	14	

a) Use stop drill bit to ensure correct depth of bore hole.

### Installation equipment

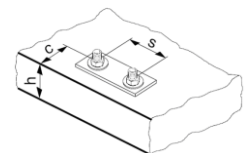
Anchor size	HK6	HK6-L	HK8-I
Rotary hammer	TE 2 – TE 16		
Stop drill bit <sup>a)</sup>	TE-C/SDS 1	TE-C / SDS 2	TE – C/SDS 3
Setting tool	HSM ... / HSM I ...		HSM 8 .. /HSM 8 I..
Other tools	Blow out pump		

a) In case of through setting choose stop drill bit with appropriate length.

### Setting parameters <sup>a)</sup>

Anchor size			HK6	HK6-L	HK8-I
Minimum base material thickness	$h_{min} \geq$	[mm]	80		
Effective anchorage depth	$h_{ef}$	[mm]	26	36	36
Critical spacing	$s_{cr}$	[mm]	200		
Critical edge distance	$c_{cr}$	[mm]	150		

a) The critical spacing (critical edge distance) shall be kept. Smaller spacing (edge distance) than critical spacing (critical edge distance) are not covered by the design method.





## Setting instruction

\*For detailed information on installation see instruction for use given with the package of the product.

Setting instruction	
External thread	
Setting of HK with hand setting tool	Setting of HK with machine setting tool
Internal thread	
Setting of HK...-I with hand setting tool	Setting of HK..-I with machine setting tool