



# HUS-V SCREW ANCHOR

**Technical Datasheet**

**Update: Dec-17**



# HUS-V Screw anchors

Economical screw anchor with hex head

## Anchor version



HUS-V  
(8-10)

## Benefits

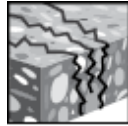
- High productivity- less drilling and fewer operations than with conventional anchors
- Suitable for cracked and non-cracked concrete C20/25
- Technical data for cracked and non-cracked concrete
- Technical data for reusability in fresh concrete ( $f_{ck,cube} = 10/15/20 \text{ Nmm}^2$ ) for temporary applications
- Two embedment depths for maximum design flexibility

## Base material

## Installation conditions



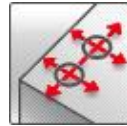
Concrete  
(non-cracked)



Concrete  
(cracked)



Tensile  
zone



Small edge  
distance and  
spacing

## 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
- Steel failure
- Minimum base material thickness
- Concrete C 20/25,  $f_{ck,cube} = 25 \text{ N/mm}^2$
- Adjustment allowed during the installation for size 8 and 10,  $h_{nom2}$  only.

### Effective anchorage depth for static

Anchor size		8		10	
Eff. Anchorage depth	$h_{ef}$ [mm]	50	65	55	75

### Mean ultimate resistance

Anchor size		8		10		
<b>Non-cracked concrete</b>						
Tension $N_{Ru,m}$	HUS-V	[kN]	11,9	21,2	11,9	26,6
Shear $V_{Ru,m}$	HUS-V	[kN]	16,4	16,7	18,6	20,5
<b>Cracked concrete</b>						
Tension $N_{Ru,m}$	HUS-V	[kN]	5,3	11,9	8,0	21,2
Shear $V_{Ru,m}$	HUS-V	[kN]	11,7	16,7	13,2	20,5

### Characteristic resistance

Anchor size		8		10	
<b>Non-cracked concrete</b>					
Tension $N_{Rk}$	HUS-V	[kN]	9,0	16,0	20,0
Shear $V_{Rk}$	HUS-V	[kN]	12,3	15,9	19,5
<b>Cracked concrete</b>					
Tension $N_{Rk}$	HUS-V	[kN]	4,0	9,0	16,0
Shear $V_{Rk}$	HUS-V	[kN]	8,8	15,9	19,5

### Design resistance

Anchor size		8		10	
<b>Non-cracked concrete</b>					
Tension $N_{Rd}$	HUS-V	[kN]	5,0	8,9	9,5
Shear $V_{Rd}$	HUS-V	[kN]	6,9	10,6	13,0
<b>Cracked concrete</b>					
Tension $N_{Rd}$	HUS-V	[kN]	2,2	5,0	7,5
Shear $V_{Rd}$	HUS-V	[kN]	4,9	10,9	13,0

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

Anchor size		8		10	
<b>Non-cracked concrete</b>					
Tension $N_{Rec}$	HUS-V	[kN]	3,6	6,3	6,8
Shear $V_{Rec}$	HUS-V	[kN]	4,9	7,6	9,3
<b>Cracked concrete</b>					
Tension $N_{Rec}$	HUS-V	[kN]	1,6	3,6	5,4
Shear $V_{Rec}$	HUS-V	[kN]	3,5	7,6	9,3

a) 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.

### Materials

#### Mechanical properties

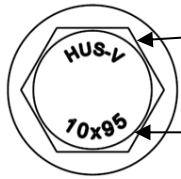
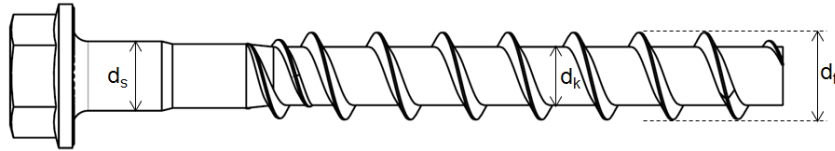
Anchor size		8		10	
Nominal tensile strength $f_{uk}$		[N/mm <sup>2</sup> ]	880		715
Yield strength $f_{yk}$		[N/mm <sup>2</sup> ]	755		610
Stressed cross-section $A_s$		[mm <sup>2</sup> ]	36,6		59,4
Moment of resistance $W$		[mm <sup>3</sup> ]	35		65
Characteristic bending resistance $M^{0}_{Rk,s}$		[Nm]	37,1		55,5

#### Material quality

Part	Material
HUS-V	Carbon steel; Galvanized $\geq 5 \mu\text{m}$

#### Anchor dimensions

Anchor size		8		10	
Threaded outer diameter	$d_t$	[mm]	10,6		12,65
Core diameter	$d_k$	[mm]	7,1		8,7
Shaft diameter	$d_s$	[mm]	8,45		10,55
Stressed section	$A_s$	[mm <sup>2</sup> ]	36,6		59,4



**HUS-V** : Hilti Universal Screw – hexagonal head

**10x95** : screw diameter x screw length

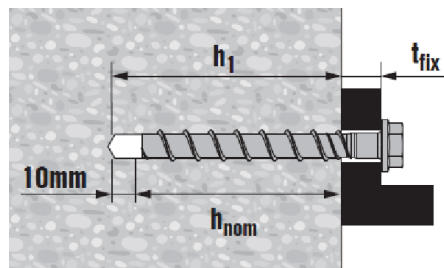
### Screw length and thickness of fixture for HUS-v (hex head)

Anchor size		8		10	
Nominal anchorage depth	$h_{nom1}, h_{nom2}$ [mm]	50	65	55	75
Thickness of fixture		$t_{fix1}$	$t_{fix2}$	$t_{fix1}$	$t_{fix2}$
Length of anchor [mm]	55	5	-	-	-
	60	-	-	5	-
	75	25	15	-	-
	85	35	25	30	10
	95	45	35	40	20
	105	-	-	50	30

### Setting information

#### Setting details

Anchor size		8		10	
Thread engagement length	$h_{nom}$ [mm]	50	65	55	75
Nominal diameter of drill bit	$d_0$	8		10	
Cutting diameter of drill bit	$d_{cut} \leq$ [mm]	8,45		10,45	
Drill hole depth	$h_1 \geq$ [mm]	60	75	65	85
Maximum diameter of clearance hole in the fixture <sup>2)</sup>	$d_f \leq$ [mm]	12		14	
Width across	SW [mm]	13		15	



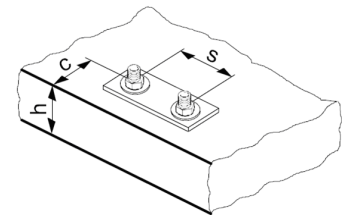
#### Installation equipment

Anchor size	8	10
Rotary hammer	TE 2 – TE 30	
Drill bit for concrete	CX 8	CX 10
Socket wrench insert	S-NSD 13 1/2	S-NSD 15 1/2
Tube for temporary application	HRG 8	HRG 10
Setting tool for concrete C12/15 to C50/60	SIW 22T-A – SIW 22-A	

### Setting parameters

Anchor size		8		10	
Nominal anchorage depth	$h_{nom}$ [mm]	50	65	55	75
Effective anchorage depth	$h_{ef}$ [mm]	39,1	51,9	42,5	59,5
Minimum base material thickness	$h_{min}$ [mm]	100	110	100	130
Minimum spacing	$s_{min}$ [mm]	40	50	50	50
Minimum edge distance	$c_{min}$ [mm]	50	50	50	50
Critical spacing for splitting failure	$s_{cr,sp}$ [mm]	117,3	140	130	180
Critical edge distance for splitting failure	$c_{cr,sp}$ [mm]	58,65	70	65	90
Critical spacing for concrete cone failure	$s_{cr,N}$ [mm]	117,3	177,3	127,5	178,5
Critical edge distance for concrete cone failure	$c_{cr,sp}$ [mm]	58,65	88,65	63,75	89,25

For spacing (edge distance) smaller than critical spacing (critical edge distance) the design loads have to be reduced.



### Setting instructions

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

Setting instruction	
<p><b>1. Make a cylinder hole</b></p>	<p><b>2. Clean the borehole</b></p>
<p><b>3. Install the screw anchor by impact screw driver</b></p>	<p><b>4. Ensure that the fixture is caught</b></p>