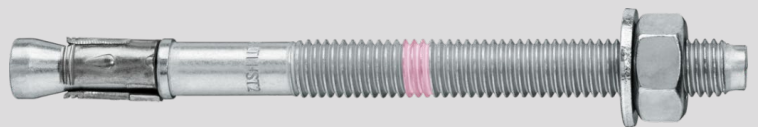




# HST2 V3 Expansion anchor

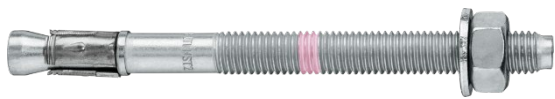
**Product Technical Datasheet**  
**Steel to Concrete**  
**Metal deck**  
Update: July 25



# HST2 V3 Wedge expansion anchor

High-performance expansion anchor

## Anchor version



HST2 V3  
(M8-M16)

## Benefits

- Tested performance in Metal composite deck systems (e.g. Comflor)
- High pullout performance for medium-duty connections
- No cleaning required with the proper installation steps
- Ideal for multi-service supports in MEP applications
- Seismic resistance assessed according to C1 conditions



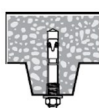
## Base material



Concrete  
(uncracked)



Concrete  
(cracked)



Concrete  
over  
metal deck

## Load conditions

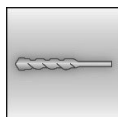


Static /  
quasi-static



Seismic  
assessment  
according to  
C1

## Drilling, cleaning, setting



Hammer  
drilled  
holes

## Other information



Hilti  
Technical  
data

## Instructions for use

The instructions for use can be viewed using the link in the instructions for use table or the QR code/link in the Hilti webpage table.

### Instructions for use (IFU)

Anchor size	M8	M10	M12	M16
HST2 V3	<a href="#">HST2 V3 M8</a>	<a href="#">HST2 V3 M10</a>	<a href="#">HST2 V3 M12</a>	<a href="#">HST2 V3 M16</a>
Filling set	<a href="#">Filling Set</a>			

### Link to webpage

<a href="#">HST2 V3</a>	
	

## Static and quasi-static loading based on Hilti technical data. Design according to EN 1992-4

### All data in this section applies to:

- Correct setting (see Instructions for use (IFU))
- Hammer drilled holes
- For a single anchor
- No edge distance and spacing influence (see setting detail tables with characteristic distances). Only one anchor can be used in the lower flute at a time with the min. spacing between anchors along the length of the flute to be at least  $s = 3 h_{ef}$ . This datasheet does not give information for the design of fasteners in a group.
- Minimum base material thickness (see setting detail table)
- Embedment depth, as specified in the table of this section
- Concrete strength minimum C30/37 without steel fibre.
- Recommended loads: With overall partial safety factor for action  $\gamma = 1,4$ .

For anchoring into the upper flute, either use table below conservatively or refer to ETA-21/0480. In this case the minimum required slab thickness  $h_{min}$  must be larger than the deck thickness  $h_{min,deck}$ .

### Design resistance - ComFlor® 80 and 60

Anchor size			M8	M10	M12	M16
Effective anchorage depth	$h_{ef}$	[mm]	45	60	70	85
<b>Uncracked concrete</b>						
Tension	HST2 V3	$N_{Rd}$ [kN]	4,0	6,0	8,7	11,3
Shear		$V_{Rd}$ [kN]	4,0	7,2	8,8	12,0
<b>Cracked concrete</b>						
Tension	HST2 V3	$N_{Rd}$ [kN]	2,0	3,3	4,0	8,0
Shear		$V_{Rd}$ [kN]	4,0	7,2	8,8	12,0

### Design resistance - ComFlor® SR

Anchor size			M8	M10	M12	M16
Effective anchorage depth	$h_{ef}$	[mm]	45	60	70	85
<b>Uncracked concrete</b>						
Tension	HST2 V3	$N_{Rd}$ [kN]	4,0	6,0	8,7	11,3
Shear		$V_{Rd}$ [kN]	4,0	7,2	8,8	12,0
<b>Cracked concrete</b>						
Tension	HST2 V3	$N_{Rd}$ [kN]	2,0	3,3	4,0	8,0
Shear		$V_{Rd}$ [kN]	4,0	7,2	8,8	12,0

**Recommended loads- ComFlor® 80 and 60**

Anchor size			M8	M10	M12	M16
Effective anchorage depth	$h_{ef}$	[mm]	45	60	70	85
<b>Uncracked concrete</b>						
Tension	HST2 V3	$N_{rec}$ [kN]	2,9	4,3	6,2	8,1
Shear		$V_{rec}$ [kN]	2,9	5,1	6,3	8,6
<b>Cracked concrete</b>						
Tension	HST2 V3	$N_{rec}$ [kN]	1,4	2,4	2,9	5,7
Shear		$V_{rec}$ [kN]	2,9	5,1	6,3	8,6

**Recommended loads- ComFlor® SR**

Anchor size			M8	M10	M12	M16
Effective anchorage depth	$h_{ef}$	[mm]	45	60	70	85
<b>Uncracked concrete</b>						
Tension	HST2 V3	$N_{rec}$ [kN]	2,9	4,3	6,2	8,1
Shear		$V_{rec}$ [kN]	2,9	5,1	6,3	8,6
<b>Cracked concrete</b>						
Tension	HST2 V3	$N_{rec}$ [kN]	1,4	2,4	2,9	5,7
Shear		$V_{rec}$ [kN]	2,9	5,1	6,3	8,6

## Seismic loading based on Hilti technical data. Design according to EN 1992-4

### All data in this section applies to:

- Correct setting (see Instructions for use (IFU))
- Hammer drilled holes
- For a single anchor
- No edge distance and spacing influence (see setting detail tables with characteristic distances). Only one anchor can be used in the lower flute at a time with the min.spacing between anchors along the length of the flute to be at least  $s = 3 h_{ef}$ . This datasheet does not give information for the design of fasteners in a group
- Minimum base material thickness (see setting detail table)
- Embedment depth, as specified in the table of this section
- Concrete strength minimum C30/37 without steel fibre.
- $\alpha_{gap} = 1,0$  (using Hilti filling set) and  $\alpha_{gap} = 0,5$  (without using Hilti filling set) accordingly

For anchoring into the upper flute, either use table below conservatively or refer to ETA-21/0480. In this case the minimum required slab thickness  $h_{min}$  must be larger than the deck thickness  $h_{min,deck}$ .

### Design resistance in case of seismic performance category C1- ComFlor® 80 and 60

Anchor size				M10	M12	M16
Effective anchorage depth	$h_{ef}$	[mm]		60	70	85
<b>with and without Hilti filling set</b>						
Tension	HST2 V3	$N_{Rd,C1}$	[kN]	3.3	4.0	6.7
<b>with Hilti filling set (<math>\alpha_{gap} = 1,0</math>)</b>						
Shear	HST2 V3	$V_{Rd,C1}$	[kN]	4.0	5.6	8.8
<b>without Hilti filling set (<math>\alpha_{gap} = 0,5</math>)</b>						
Shear	HST2 V3	$V_{Rd,C1}$	[kN]	2.0	2.8	4.4

### Design resistance in case of seismic performance category C1- ComFlor® SR

Anchor size				M10	M12	M16
Effective anchorage depth	$h_{ef}$	[mm]		60	70	85
<b>with and without Hilti filling set</b>						
Tension	HST2 V3	$N_{Rd,C1}$	[kN]	3.3	4.0	6.7
<b>with Hilti filling set (<math>\alpha_{gap} = 1,0</math>)</b>						
Shear	HST2 V3	$V_{Rd,C1}$	[kN]	4.0	5.6	8.8
<b>without Hilti filling set (<math>\alpha_{gap} = 0,5</math>)</b>						
Shear	HST2 V3	$V_{Rd,C1}$	[kN]	2.0	2.8	4.4

## Setting information

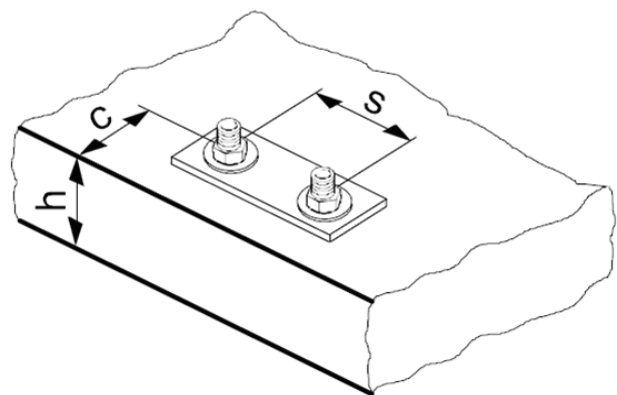
### Setting details

#### ComFlor® 80 and 60 and ComFlor® SR

Type			HST2 V3			
			M8	M10	M12	M16
Anchor size						
Nominal embedment depth	$h_{nom}$	[mm]	55	70	83	98
Effective embedment depth	$h_{ef}$	[mm]	45	60	70	85
Nominal diameter of drill bit	$d_0$	[mm]	8	10	12	16
Depth of cleaned borehole overhead	$h_1$	[mm]	60	75	91	106
Depth of uncleaned borehole overhead	$h_1$	[mm]	75	90	103	118
Installation torque	$T_{inst}$	[NM]	15	25	40	80
Minimum base material thickness	$h_{min}$	[mm]	100	120	140	160
Minimum concrete thickness over upper flute	$h_{min,deck}$	[mm]	70			
<b>Minimum distances ComFlor® 80 and 60</b>						
Spacing	$s_{min}$	[mm]	60	105	110	105
Edge distance	$c_{min}$	[mm]	45	55	55	70
Minimum distance to edge of lower flute	$c_{min,deck}$	[mm]	45	55	55	60
<b>Minimum distances ComFlor® SR</b>						
Spacing	$s_{min}$	[mm]	60	105	110	105
Edge distance	$c_{min}$	[mm]	45	55	55	70
Minimum distance to edge of lower flute	$c_{min,deck}$	[mm]	55 <sup>1)</sup>	55 <sup>1)</sup>	55 <sup>1)</sup>	70
<b>Characteristics distances - installation from the top side (concrete side), <math>h_{min,deck}</math> to be <math>\geq h_{min}</math></b>						
Spacing for splitting failure	$s_{cr,sp}$	[mm]	191	291	284	337
Edge distance for splitting	$c_{cr,sp}$	[mm]	135	180	210	255
Spacing for concrete cone failure	$s_{cr,N}$	[mm]	96	146	142	168
Edge distance for concrete cone failure	$c_{cr,N}$	[mm]	68	90	105	128

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

<sup>1)</sup> Limited by the steel sheet geometry, not a MIN value for the anchor



**Installation position for HST2 V3 anchor in metal decks:**

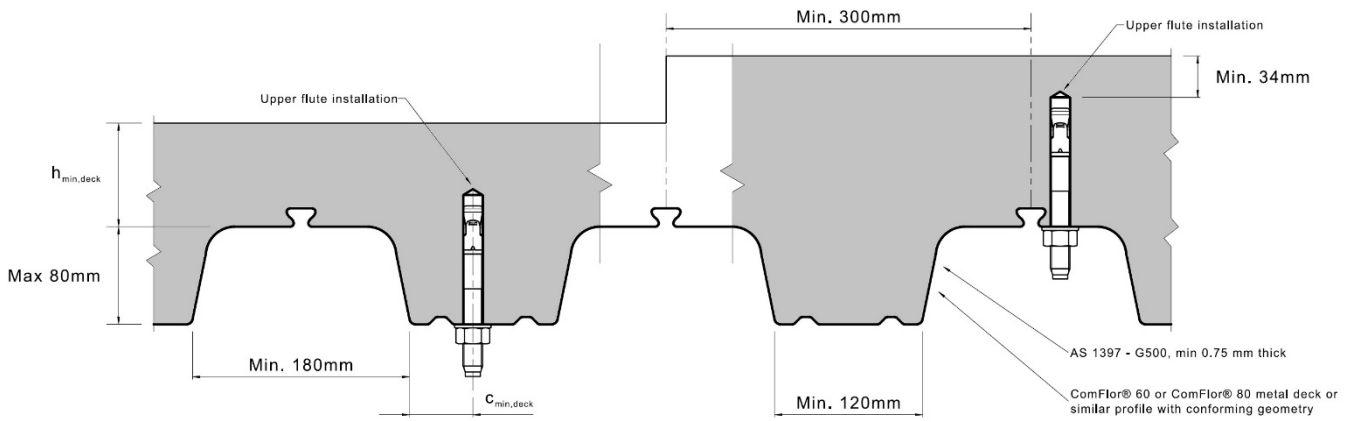


Figure 1: Setting diagram for ComFlor® 80 and 60

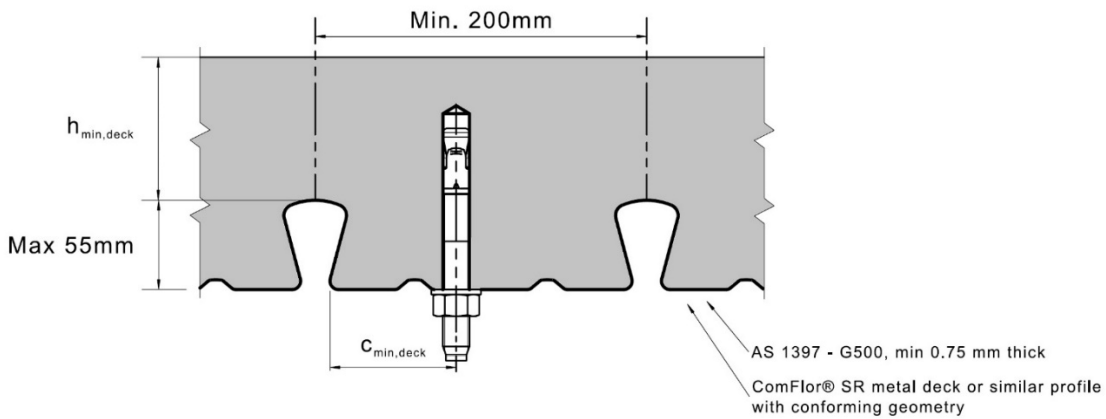


Figure 2: Setting diagram for ComFlor® SR



## Drilling equipment

For detailed setting information on installation, see instructions for use given with the product.

Rotary Hammers (Corded and Cordless)		TE 2 - TE 30
Other tools		Hammer drill bit TE-CX, TE-C
		Blow out pump