Robert Bird Group
Member of the Surbana Jurong Group

Robert Bird Group Pty Ltd
ABN 67 010 580 248 | ACN 010 580 248

Reference: JB:JS CO/ST 19659M

24 January 2023

David Visser
K8 Australia Pty Ltd
7/344 Lorimer Street
PORT MELBOURNE VIC 3207

Dear David

RE: SUPAPANEL SEISMIC PIN – INTERIM STRUCTURAL CERTIFICATE

Robert Bird Group – Consulting Structural Engineers, were commissioned by David Visser from K8 Australia Pty Ltd in accordance with our engagement letter dated 08 December 2022 to prepare this Structural Design Certificate for the Supapanel System seismic pin design check.

This certificate is based on the inputs and assumptions presented below and desktop calculations undertaken based on first principles and code based design to Australian Standards.

Inputs, Assumptions, and Assessment Basis

Our analysis is based on the following inputs and assumptions. The project engineer is to confirm that site-specific structural conditions and factors are no more onerous that the following.

- Assessment is based on AS 1170.4 Section 8.3 (Simple method for parts and components) principles, with the following assumed factors.
  - kp = 1.3 (Importance Level 3 structure, Annual Probability of Exceedance = 1:1000)
  - Z=0.10 (based on worst-case Australian capital city (Adelaide))
  - Building height = 80m (assumed 20 storey building with 4m/storey), with the Supapanel wall on the top storey
  - kt = 0.05 (standard ductility for "all other structures" according to AS1170.4 cl 6.2.3)
  - Ch(0)=1.3 (assuming soil type Ce i.e. worst-case)
  - Ic = 1
  - ac = 1
  - Rc = 2.5 (i.e. Supapanel is assumed to be ductile)

- Supapanel properties:
  - Fixings are to be located at 100mm from each end of track and 700mm centres within the track, as per typical Supapanel arrangement.
  - Vertical and horizontal 72mm thick panels are to be assessed, with mass = 32 kg/m^2.
  - Wall span assumed to be 6.5m max.

MELBOURNE
Tower 4, Collins Square
Level 19, 727 Collins Street
Melbourne VIC 3008 Australia
PO Box 472, Collins Street West Vic 8007
p: +61 (0)3 8677 7555 | w: robertbird.com

- Wall can be fixed either vertically or horizontally.
- Screws are only resisting lateral forces, i.e. during a seismic event 100% of the screw capacity can be attributed to earthquake loads.
- Supapanel is a non-structural building component.

- Base build structural properties assumed:
  - Importance Level 3 structure.
  - 32MPa concrete.
  - Assumes cracked concrete.
  - Connections are not applicable to designated plastic hinge regions of primary structure.
- Screw and connection properties:
  - Screws are acting in shear only.
  - Fixings are to be located at 100mm from each end of track and 700mm centres within the track, as per typical Supapanel arrangement.
  - Seismic Performance Category C1 assumed (Non-structural component in Importance Level 3 building)
  - Lever arm (i.e. projection of screw from concrete, including grout) for fasteners <0.5d. This equates to 3mm max. projection for a 6mm dia screw.
  - Min screw spacing = 40mm
  - Min screw edge distance = 40mm
  - Min screw embedment = 40mm or 55mm - use 40mm as per David Visser advice

This assessment relates to seismic loading only, according to the above assumptions. Refer to previous design certificates for our assessments of other design criteria (wind, gravity). Fire performance / resistance has not been checked as part of this certificate.

Assessment Outcome

As advised by David Visser, we have assessed the following screws as part of this certification:

- TOGE TSM 6mm diameter Hex Head Screw-Bolt
- HILTI HUS3-H 6mm diameter Hex Head Screw anchor

Selected pages from the screw specification documents are attached to this certificate for reference.

Based on our calculations according to the assumed conditions stated above, the above screws are both acceptable for use in seismic applications.

This letter is provided to K8 Australia Pty Ltd and Wall Technologies Pty Ltd as an Interim Structural Certificate for the Supapanel Seismic Pin design check.

Robert Bird Group herby certify that the Supapanel Seismic Pin design check as assessed within this certificate have been validated in accordance with the relevant input data provided for our assessment, using design principles from AS1170.4 and AS5216 (Appendix F), and based on the list of constraints and design & installation assumptions noted above.

We note the maximum panel span for the purpose of this certificate is 6.5m.

A further structural certificate update can be provided in due course pending our review of the final Installation and Design Manual in conjunction with this certificate to be completed by Wall technologies Pty Ltd.

Yours faithfully

ROBERT BIRD GROUP PTY LTD

Author: Ricky Feigin
Associate
Professional Engineer registration no. PE0000079

Reviewer: John Bambino
General Manager – Southern Region
MIEAust, Professional Engineer registration no. PE0000468

Encl.

- Selected pages from TOGE TSM TDS|1018.16 Threaded Rod Hanger and Concrete Screwbolts (2022)
- Selected pages from Hilti HUS3 SCREW ANCHOR Technical Datasheet (2020)

TOGE TSM

THREADED ROD HANGER AND CONCRETE SCREWBOLTS

TDS | 1018.16

AS 5216:2021 Compliant

DONE AND DUSTLESS

NEW WITH SEISMIC **C2*** PERFORMANCE

(*C2 for carbon steel only)

Fire Rated performance in cracked and non-cracked concrete

ZINC

National Code Compliant | European Technical Assessment | Cracked Concrete Approved | Seismic Approved Fasteners | Fire Rated Fasteners

ZINC

ZINC & STAINLESS STEEL

National Code Compliant | European Technical Assessment | Cracked Concrete Approved | Seismic Approved Fasteners | Seismic Approved Fasteners | Fire Rated Fasteners

TOGE TSM CONCRETE SCREW RANGE

The Toge TSM range features quick and safe installation, high load capacities in both cracked and non-cracked concrete with undercut load transmission. The TSM can be easily removed and does not leave residue or metal components in the drilled hole. Loads can be achieved immediately upon installation.

TOGE TSM STAINLESS STEEL CONCRETE SCREW RANGE

The Stainless Steel 316 (A4) high corrosion resistant Toge TSM Concrete Screws are one-piece self-tapping anchors for concrete and masonry applications providing high load performance in cracked and non-cracked concrete base materials. Clean, low profile appearance gives a aesthetic finish to the project.

National Code Compliant | European Technical Assessment | Cracked Concrete Approved | C1 Seismic Approved Fasteners (Carbon steel & stainless steel) | C2 Seismic Approved Fasteners (Carbon steel only) | Fire Rated Fasteners | AS 5216 | Made in Germany | ICCONS Design PRO

TOGE TSM HIGH PERFORMANCE

Hex Head Screw-Bolts

Ceiling Angle Bracket
Refer to ICCONS product guide (IPG) for further details.

1/2" Impact Sockets
Refer to ICCONS product guide (IPG) for further details.

Carbon Steel Zinc Clear - Internal Use

Part No.	Description	Drill Diameter (mm)	Min. Drill Depth (mm)	Min. Anchor Embedment (mm)	Max. Fixture Thickness (mm)	Clearance Hole in Fixture (mm)	Head Size (mm)	Socket Part No.	Max. Impact Tool Torque Tmax (Nm)	ETA Option	SEISMIC Assessment	qty
TSM06043	6x43mm	6	45	40	3	8	13	BTISS1338	160	Option 1 & RNSS	C1	100
TSM06050	6x50mm				10							100
TSM06060	6x60mm				20							100
TSM06080	6x80mm				40							100
TSM08050	8x50mm	8	55	45	5	12	13	BTISS1338	300	Option 1	n/a	50
TSM08060	8x60mm				15							50
TSM08070	8x70mm		75	65	5					Option 1	C1 & C2	50
TSM08080	8x80mm				15							50
TSM08100	8x100mm				35							50
TSM10060	10x60mm	10	65	55	5	14	15	BTISS1538	400	Option 1	C1	50
TSM10080	10x80mm				25							50
TSM10090	10x90mm		95	85	5					Option 1	C1 & C2	50
TSM10100	10x100mm				15							50
TSM10120	10x120mm				35							50
TSM12080	12x80mm	12	75	65	15	16	17	BTISS1738	650	Option 1	n/a	25
TSM12110	12x110mm		110	100	10					Option 1	C1 & C2	25
TSM14080	14x80mm	14	85	75	5	18	21	BTISS2138	650	Option 1	n/a	25
TSM14150	14x150mm		125	115	35					Option 1	C1 & C2	25

C1 Seismic assessment (Carbon steel and stainless steel) only valid for the following embedment depths: TSM06 - 40mm + 55mm / TSM08 - 65mm / TSM10 - 55mm + 85mm / TSM12 - 100mm / TSM14 - 115mm.

C2 Seismic assessment (Carbon steel)only valid for the following embedment depths: TSM08 - 65mm / TSM10 - 85mm / TSM12 - 100mm / TSM14 - 115mm

Excessive torque during installation may damage the anchor. Training, expertise and good judgment is required. Always adhere to anchor installation impact tool torque guidelines.

National Code Compliant

European Technical Assessment

Cracked Concrete Approved

C1 Seismic Approved Fasteners (Carbon steel & stainless steel)

Fire Rated Fasteners

AS 5216

Made in Germany

ICCONS Design PRO

TOGE TSM HIGH PERFORMANCE

Hex Head Screw-Bolts

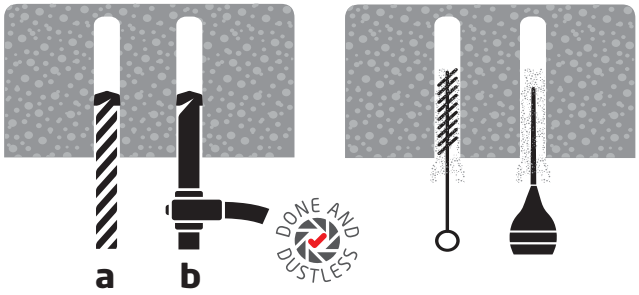
1/2" Impact Sockets
Refer to ICCONS product guide (IPG) for further details.

316 SS A4 - Stainless Steel - External Use

Part No.	Description	Drill Diameter (mm)	Min. Drill Depth (mm)	Min. Anchor Embedment (mm)	Max. Fixture Thickness (mm)	Clearance Hole in Fixture (mm)	Head Size (mm)	Socket Part No.	Max. Impact Tool Torque Tmax (Nm)	ETA Option	SEISMIC Assessment	qty
TSM06050SS	6x50mm	6	45	40	10	8	13	BTISS1338	160	Option 1 & RNSS	C1	100
TSM06060SS	6x60mm				20							100
TSM08070SS	8x70mm	8	75	65	5	12	13	BTISS1338	300	Option 1	C1	50
TSM08080SS	8x80mm				15							50
TSM10090SS	10x90mm	10	65	55	35	14	15	BTISS1538	400	Option 1	C1	50
TSM10100SS	10x100mm				45							50
TSM10120SS	10x120mm				65							50

C1 Seismic assessment (Carbon steel & stainless steel) only valid for the following embedment depths: TSM06 - 40mm + 55mm / TSM08 - 65mm / TSM10 - 55mm + 85mm
Excessive torque during installation may damage the anchor. Training, expertise and good judgment is required. Always adhere to anchor installation impact tool torque guidelines.

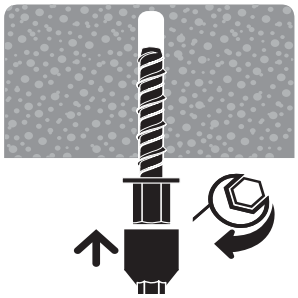
HANGER INSTALLATION



1a With the correct diameter drill bit, drill a hole to the correct depth (add at least one anchor diameter to the depth to prevent the fastener from bottoming out). **OR**

1b Alternatively, use a Heller Set-Safe DE Hollow Drill Bit which vacuums out the dust (proceed to step 3).

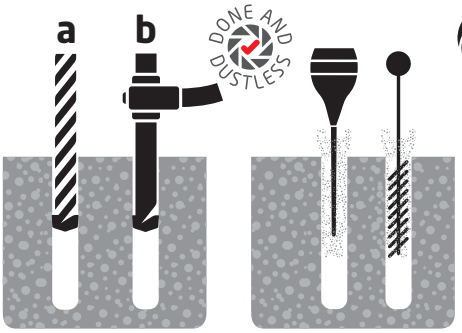
2 Clean dust and other material from the hole.



3 Attach the Anchor to the correct size socket driver and install anchor perpendicular to the base material substrate. Be sure not to over torque the anchor. Install with either a socket or cordless impact driver.

4 The head of the anchor should be set flush with the base material. Install the threaded rod. The thread should be fully engaged in the anchor.

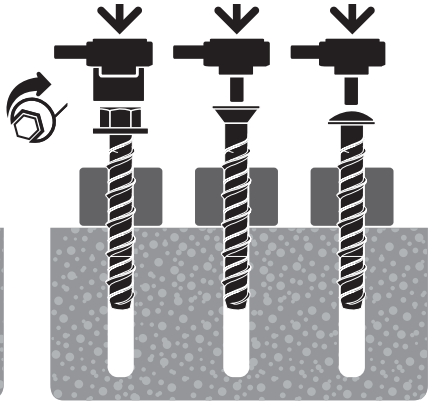
SCREWBOLT INSTALLATION



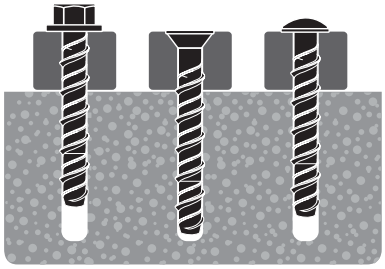
1a With the correct diameter drill bit, drill a hole to a depth of at least one anchor diameter deeper than required embedment. **OR**

1b Alternatively, use a Heller Set-Safe DE Hollow Drill Bit which vacuums out the dust.

2 Clean dust and other material from the hole.



3 Install with either a socket or cordless impact driver. Apply pressure against the fixing and rotate to engage the first thread.



4 Continue to tighten the anchor until flanged head is firmly seated against fixture. Be sure not to over torque the anchor.

Installation complete!

TOGE TSM PERFORMANCE IN 32 MPa CONCRETE

Single anchor remote from edge

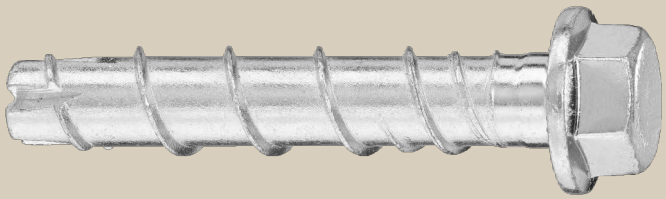
Size	Drill Hole Diameter (mm)	Anchor Embedment (mm)	Effective Anchor Depth h_{ef} (mm)	Fixture Hole Diameter (mm)	Installation Torque (Nm)	Min. Concrete Thickness (mm)	TENSILE DESIGN RESISTANCE				SHEAR DESIGN RESISTANCE				TENSILE DESIGN RESISTANCE		
							Non-cracked Concrete (kN)	Cracked Concrete (kN)	SEISMIC C1* (kN)	SEISMIC C2* (kN)	Non-cracked Concrete (kN)	Cracked Concrete (kN)	SEISMIC C1* (kN)	SEISMIC C2* (kN)	Impact Screw Driver Max. Torque (Nm)	Minimum Edge Distance (mm)	Minimum Spacing Distance (mm)
TSM 6	6	40	31	8	10	100	3.4	1.7	1.3		5.6	5.0	3.8		160	40	40
		55	44				7.6	3.4	2.7		5.6	5.6	4.5				
TSM 8	8	45	35	12	20	100	6.3	4.2			8.6	6.0			300	40	40
		55	43				10.1	7.6			10.8	8.2				50	50
		65	52			120	13.4	10.1	8.0	1.6	13.6	10.9	6.8	7.9			
TSM 10	10	55	43	14	40	100	10.1	7.6	6.0		11.7	8.2	7.0		400	50	50
		75	60			130	16.8	13.5			27.2	27.0					
		85	68				21.0	16.3	13.8	3.6		27.2	12.2	14.8			
TSM 12	12	65	50	16	60	120	13.4	10.1			14.7	10.3			650	50	50
		85	67			130	22.8	15.9			33.6	31.9					
		100	80			150	29.7	20.8	17.7	4.7		33.6	16.8	25.3		70	70
TSM 14	14	75	58	18	80	130	18.3	12.8			18.3	12.8			650	50	50
		100	79			150	29.1	20.4			44.8	40.8				70	70
		115	92			170	36.6	25.6	21.8	7.0		44.8	17.9	32.6			

Note: The TSM high performance anchor may be used in applications subject to static or quasi-static loading in reinforced or unreinforced normal weight concrete of strength classes C20/25 - C50/60. The TSM high performance anchor may be used in cracked or non-cracked concrete. For specific design information including minimum edge and anchor spacing information please refer to ETA-15/0514. C1 and C2 Seismic design loads have been derived using AS 5216:2021 / EN 1992-4:2018 & TR049 ($a_{gap} = 1.0$). Performance data in the above table has been calculated using the relevant published ETA and based on single anchor installation at characteristic spacing and edge distance parameters.
* C1 valid for carbon steel and stainless steel TSM. *C2 valid for carbon steel TSM ONLY.

Hilti HUS3
SCREW ANCHOR

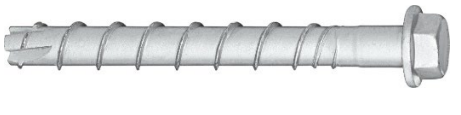
Technical Datasheet

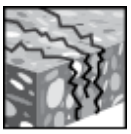
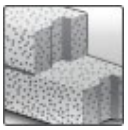
Update: Jul-20

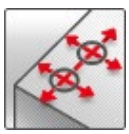


HUS3 Screw anchor

Ultimate performance screw anchor for single point fastening

Anchor version		Benefits
	HUS3-H (6-14)	- High productivity - less drilling and fewer operations than with conventional anchors - ETA approval for cracked and non-cracked concrete - ETA approval for Seismic C1 and C2 - ETA approval for adjustability (unscrew-rescrew) - High loads - Small edge and spacing distance - abZ (DIBt) approval for reusability in fresh concrete ($f_{ck,\ cube}$ = 10/15/20 Nmm^2) for temporary applications - Three embedment depths for maximum design flexibility - No cleaning required - HUS3-HF with multilayer coatings for additional corrosion protection - Forged-on washer and hexagon head with no protruding thread - Through fastening
	HUS3-HF (8-14)	
	HUS3-C (8-10)	
	HUS3-A (6)	
	HUS3-P (6)	
	HUS3-PL (6)	
	HUS3-PS (6)	
	HUS3-I (6)	
	HUS3-I Flex (6)	

Base material				Load conditions		
						
Concrete (non-cracked)	Concrete (cracked)	Solid brick	Autoclaved aerated concrete	Static / quasi-static	Seismic ETA-C1,C2	Fire resistance

Installation conditions	Other information			
				
Small edge distance and spacing	European Technical Assessment	CE conformity	PROFIS Anchor design software	DIBt Approval Reusability

Approvals / certificates

Description	Authority / Laboratory	No. / date of issue
European Technical Assessment	DIBt, Berlin	ETA-13/1038 / 28-07-2020
Fire test report	DIBt, Berlin	ETA-13/1038 / 28-07-2020

a) All data given in this section according ETA-13/1038 issue 22-07-2019.

Static and quasi-static 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, $f_{ck,}$ = 20 N/mm²
- Hilti technical data calculated acc. to EN 1992-4

Anchorage depth

Anchor size		6		8			10			14		
Type	HUS3-	H,C,A, I, P	H,C,A, I,I-flex	H,C,A,			H,C,HF			H,HF		
Nominal embedmenth deptl	h_{nom} [mm]	h_{nom1}	h_{nom2}	h_{nom1}	h_{nom2}	h_{nom3}	h_{nom1}	h_{nom2}	h_{nom3}	h_{nom1}	h_{nom2}	h_{nom3}
		40	55	50	60	70	55	75	85	65	85	115

Characteristic resistance

Anchor size		6		8			10			14		
Type	HUS3-	H,C,A, I, P	H,C,A, I,I-flex	H,C,HF			H,C,HF			H,HF		
Non-cracked concrete												
Tension N_{Rk}	[kN]	7,0	9,0	9,0	12,0	16,0	12,0	20,0	27,0	17,0	26,6	43,3
Shear V_{Rk}	[kN]	8,1	12,5	12,4	19,0	22,0	13,2	30,0	34,0	34,1	53,1	62,0
Cracked concrete												
Tension N_{Rk}	[kN]	2,5	6,0	6,0	9,0	12,0	9,0	15,0	18,9	11,9	18,6	30,0
Shear V_{Rk}	[kN]	5,7	12,5	8,7	19,0	22,0	9,2	30,0	34,0	23,8	37,2	60,6

Design resistance

Anchor size		6		8			10			14		
Type	HUS3-	H,C,A, I, P	H,C,A, I,	H,C,HF			H,C,HF			H,HF		
Non-cracked concrete												
Tension N_{Rd}	[kN]	3,9	5,0	6,0	8,0	10,7	8,0	13,3	18,0	11,4	17,7	28,8
Shear V_{Rd}	[kN]	*5,4*	*8,3*	8,3	*12,7*	*14,7*	8,8	*20,0*	*22,7*	22,7	*35,4*	*41,3*
Cracked concrete												
Tension N_{Rd}	[kN]	1,4	3,3	4,0	6,0	8,0	6,0	10,0	12,6	7,9	12,4	20,0
Shear V_{Rd}	[kN]	*3,8*	*8,3*	5,8	*12,7*	*14,7*	6,2	*20,0*	*22,7*	15,9	*24,8*	*40,4*

Recommended loads[a)]

Anchor size		6		8			10			14		
Type	HUS3-	H,C,A, I, P	H,C,A, I,I-flex	H,C,HF			H,C,HF			H,HF		
Non-cracked concrete												
Tension N_{Rec}	[kN]	2,8	3,6	4,3	5,7	7,6	5,7	9,5	12,9	8,1	12,6	20,6
Shear V_{Rec}	[kN]	3,9	*5,9*	5,9	9,1	10,5	6,3	14,3	16,2	16,2	25,3	29,5
Cracked concrete												
Tension N_{Rec}	[kN]	1,0	2,4	2,9	4,3	5,7	4,3	7,1	9,0	5,6	8,9	14,3
Shear V_{Rec}	[kN]	2,7	*5,9*	4,1	9,1	10,5	4,4	14,3	16,2	11,4	17,7	28,9

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

Seismic loading data (for 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 N/mm²
- α_{gap} = 1,0 (using Hilti seismic filling set)

Anchorage depth for seismic C2

Anchor size			8	10	14
Type		HUS3 -	H,C,HF	H,C,HF	H,C,HF
Nominal anchor. depth range	h_{nom}	[mm]	h_{nom3}	h_{nom3}	h_{nom3}
			70	85	115
Effective anchorage depth	h_{eff}	[mm]	54,9	67,1	91,8

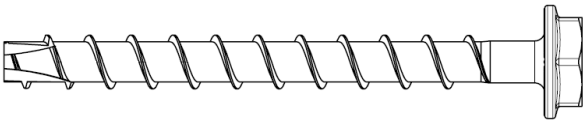
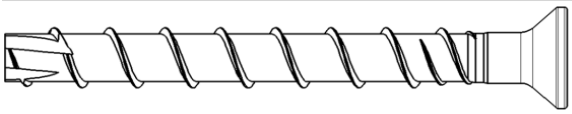
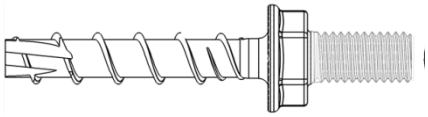
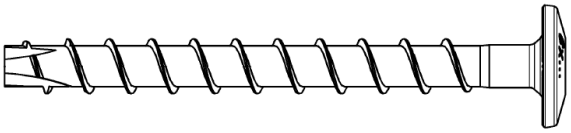
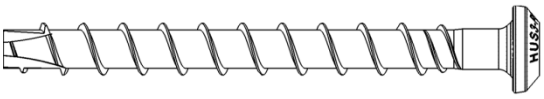
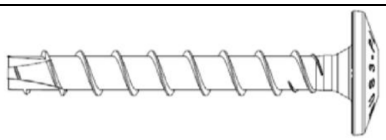
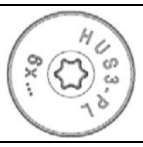
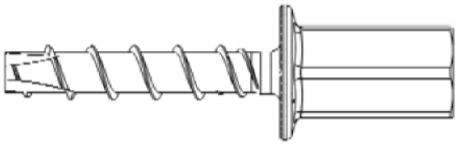
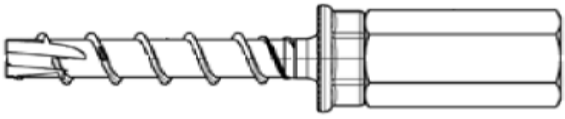
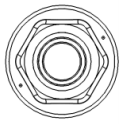
Characteristic resistance in case of seismic performance category C2

Anchor size			8	10	14
with Hilti filling set (α_{gap} = 1,0) (HUS3-H only)					
Type		HUS3 -	H	H	H
Tension	$N_{Rk,seis}$	[kN]	3,2	9,4	17,7
Shear	$V_{Rk,seis}$	[kN]	14,7	25,6	46,5
without Hilti filling set (α_{gap} = 0,5)					
Type		HUS3	H,C,HF	H,C,HF	H,C,HF
Tension	$N_{Rk,seis}$	[kN]	3,2	9,4	17,7
Shear	$V_{Rk,seis}$	[kN]	5,4	8,9	17,2

Design resistance in case of seismic performance category C2

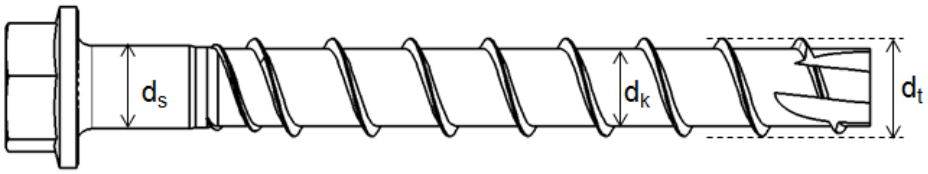
Anchor size			8	10	14
with Hilti filling set (α_{gap} = 1,0) (HUS3-H only)					
Type		HUS3 -	H	H	H
Tension	$N_{Rd,seis}$	[kN]	2,1	6,3	11,8
Shear	$V_{Rd,seis}$	[kN]	9,8	17,1	31,1
without Hilti filling set (α_{gap} = 0,5)					
Type		HUS3	H,C,HF	H,C,HF	H,C,HF
Tension	$N_{Rd,seis}$	[kN]	2,1	6,3	11,8
Shear	$V_{Rd,seis}$	[kN]	3,6	5,9	11,5

Head configuration

Type	Part		
HUS3-H **HUS3-HF**	Hexagonal head		
HUS3-C	Countersunk head		
HUS3-A	External thread		
HUS3-P	Pan head		
HUS3-PS	Pan head (small)		
HUS3-PL	Pan head (large)		
HUS3-I	Internal thread		
HUS3-I Flex	External thread		

Anchor dimensions

Anchor size			**6**	**8**	**10**	**14**
Type		**HUS3-**	**H,C,A,I, I-flex,P,PS,PL**	**H,C,HF**	**H,C,HF**	**H,HF**
Threaded outer diameter	d_t	[mm]	7,85	10,30	12,40	16,85
Core diameter	d_k	[mm]	5,85	7,85	9,90	12,95
Shaft diameter	d_s	[mm]	6,15	8,45	10,55	13,80
Diameter of integrated washer	d_i	[mm]	16,50	17,50	20,50	29,0
Stressed section	A_s	[mm²]	26,9	48,4	77,0	131,7



HUS3: Hilti Universal Screw 3rd generation
H: Hexagonal head
10: Screw diameter
45/25/15: Maximum thickness fixture t_{fix1}/ t_{fix2}/ t_{fix3} related to the embedment depth h_{nom1}/h_{nom2}/h_{nom3} (see Annex B3).

Screw length and thickness of fixture for HUS3[1)]

Anchor size		6											
Nominal embedmenth depth [mm]		h_{nom1}						h_{nom2}					
		40						55					
Type		H	C	A	I / I-	P	PS /	H	C	A	I / I-	P	PS /
Thickness of fixture		t_{fix}	t_{fix}	t_{fix}	t_{fix}	t_{fix}	t_{fix}	t_{fix}	t_{fix}	t_{fix}	t_{fix}	t_{fix}	t_{fix}
Length of screw [mm]	40	-	-	0	0	-	-	-	-	-	-	-	-
	45	5	5	5	5	5	5	-	-	-	-	-	-
	55	-	-	15	15	-	-	-	-	0	0	-	-
	60	20	20	-	-	20	20	5	5	-	-	5	5
	70	-	30	-	-	-	-	-	15	-	-	-	-
	80	40	-	-	-	45	-	25	-	-	-	25	-
	100	60	-	-	-	-	-	45	-	-	-	-	-
	120	80	-	-	-	-	-	65	-	-	-	-	-
	135	-	-	95	-	-	-	-	-	80	-	-	-
	155	-	-	115	-	-	-	-	-	100	-	-	-
	175	-	-	135	-	-	-	-	-	120	-	-	-
	195	-	-	155	-	-	-	-	-	140	-	-	-

1) Non-standard lengths, in the range 55 mm ≤ L ≤ 195 mm, are also in the scope of this ETA.

Screw length and thickness of fixture for HUS3-C[1)]

Anchor size		8			10		
Nominal embedmenth depth [mm]		h_{nom1}	h_{nom2}	h_{nom3}	h_{nom1}	h_{nom2}	h_{nom3}
		50	60	70	55	75	85
Thickness of fixture		t_{fix1}	t_{fix2}	t_{fix3}	t_{fix1}	t_{fix2}	t_{fix3}
Length of screw [mm]	65	15	5	-	-	-	-
	70	-	-	-	15	-	-
	75	25	15	-	-	-	-
	85	35	25	15	-	-	-
	90	-	-	-	35	15	-
	100	-	-	-	45	25	15

1) Non-standard lengths, in the range 65 mm ≤ L ≤ 100 mm, are also in the scope of this ETA.

Screw length and thickness of fixture for HUS3-H and HUS3-HF[1)]

Anchor size		8			10			14		
Nominal embedmenth depth [mm]		h_{nom1}	h_{nom2}	h_{nom3}	h_{nom1}	h_{nom2}	h_{nom3}	h_{nom1}	h_{nom2}	h_{nom3}
		50	60	70	55	75	85	65	85	115
Thickness of fixture		t_{fix1}	t_{fix2}	t_{fix3}	t_{fix1}	t_{fix2}	t_{fix3}	t_{fix1}	t_{fix2}	t_{fix3}
Length of screw [mm]	55	5	-	-	-	-	-	-	-	-
	60	-	-	-	5	-	-	-	-	-
	65	15	5	-	-	-	-	-	-	-
	70	-	-	-	15	-	-	-	-	-
	75	25	15	5	-	-	-	10	-	-
	80	-	-	-	25	5	-	-	-	-
	85	35	25	15	-	-	-	-	-	-
	90	-	-	-	35	15	5	-	-	-
	100	50	40	30	45	25	15	35	15	
	110	-	-	-	55	35	25	-	-	-
	120	70	60	50	-	-	-	-	-	-
	130	-	-	-	75	55	45	65	45	15
	150	100	90	80	95	75	65	85	65	35

1) Non-standard lengths, in the range 55 mm ≤ L ≤ 150 mm, are also in the scope of this ETA.
2) HUS3-HF available for size 14 with h_{nom1} and h_{nom2} only.