



Hilti HVU2 Adhesive Capsule (Anchorage)

Submission Folder

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Foil capsule adhesive anchor HVU2



BASE MATERIALS

- Concrete (cracked)
- Concrete (uncracked)

APPLICATIONS

- Anchoring steel structures (e.g. racking, guard rails, fences and gates)
- Anchoring items along roads and in tunnels (e.g. crash and noise barriers, overhead catenary systems)
- Anchoring in industry (e.g. machinery, elevators, cranes and industrial equipment)
- Anchoring at the edge of slabs or on narrow supports (e.g. beams, balconies)

ADVANTAGES

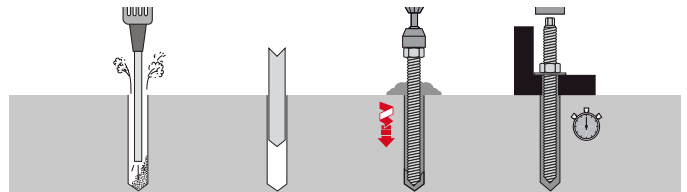
- High performance in cracked and uncracked concrete
- Tough and resilient soft foil capsule – no more risk of breakage, like with glass capsules
- Each capsule contains exactly the right amount of resin, for maximum efficiency and economy – no wastage and no need for complex calculations
- Suitable for use under tough jobsite conditions including watersaturated holes and at low temperatures, even in diamond-cored holes
- Automatic hole cleaning (SafeSet) with TE-CD and TE-YD drill bits in combination with a Hilti vacuum cleaner
- Anchors can be loaded almost instantly – only 5 minutes curing time at 20°C and above



Approvals

ETA	ETA-18/0185 HVU2 bonded fastener for use in concrete
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Approvals and test reports may apply to selected products only. Please refer to the documents for details.



These are abbreviated instructions which may vary according to the application.

Technical data

Material composition	Epoxy methacrylate
Material, corrosion	Stainless steel, HCR (high corrosion resistance), Carbon steel, HDG (hotdip galvanised)/sherardised, Stainless steel, A2, Carbon steel, zinc-plated
Tested/approved for diamond drilling	Yes

Curing time¹⁾

Base material temperature [°C]	Curing time t _{cure} [min]
0-4	40
5-9	20
10 to 19	10
20 to 40	5

¹⁾ The curing time data are valid for dry base material only. In wet base material the curing times must be doubled.

Order Now



Ordering designation	Drill bit diameter	Standard embedment depth	Anchor size	Sales pack quantity	Item number
HVU2 M8x80	10 mm	80 mm	8 mm	20 pcs	2164505
HVU2 M10x90	12 mm	90 mm	10 mm	20 pcs	2164506
HVU2 M12x110	14 mm	110 mm	12 mm	20 pcs	2164507
HVU2 M16x125	18 mm	125 mm	16 mm	20 pcs	2164508
HVU2 M20x170	22 mm	170 mm	20 mm	10 pcs	2164509
HVU2 M24x210	28 mm	210 mm	24 mm	5 pcs	2164560
HVU2 M27x240	30 mm	240 mm	27 mm	4 pcs	2164561 ¹⁾
HVU2 M30x270	35 mm	270 mm	30 mm	4 pcs	2164562 ¹⁾

¹⁾ For detailed stock availability and lead time information please contact your Hilti representative.

Please visit Hilti website for the latest item numbers and related products

Anchor rod HAS-U 5.8 (Galvanized, grade 5.8)



Approvals

ETA	ETA 15/0882 for HIT-RE 100 injection mortar for anchoring applications (ETAG 001-05, Option 7)
	ETA 16/0143 for HIT-RE 500V3 injection mortar for anchoring applications (ETAG 001-05, Option 7)
ETA, seismic	ETA 12/0084 for HIT-HY 200-R injection mortar and standard element for anchoring applications (ETAG 001-05, Option 1)

Approvals and test reports may apply to selected products only. Please refer to the documents for details.

Technical data

Head configuration	Externally threaded
Material composition	Steel, 5.8 grade, zinc-plated (min. 5µm)
Material, corrosion	Steel, zinc-plated

Order Now



Ordering designation	Anchor size	Anchor length	Drill bit diameter	Base plate clearance hole	Sales pack quantity	Item number
HAS-U 5.8 M6x75	M6	75mm	8mm	7mm	20pc	2223936 ¹⁾
HAS-U 5.8 M6x105	M6	105mm	8mm	7mm	20pc	2223704 ¹⁾
HAS-U 5.8 M8x80	M8	80mm	10mm	9mm	20pc	2223852 ¹⁾
HAS-U 5.8 M8x110	M8	110mm	10mm	9mm	20pc	2223853
HAS-U 5.8 M8x150	M8	150mm	10mm	9mm	20pc	2223854 ¹⁾
HAS-U 5.8 M10x95	M10	95mm	12mm	12mm	20pc	2223705 ¹⁾
HAS-U 5.8 M10x115	M10	115mm	12mm	12mm	20pc	2223706 ¹⁾
HAS-U 5.8 M10x130	M10	130mm	12mm	12mm	20pc	2223707
HAS-U 5.8 M10x170	M10	170mm	12mm	12mm	20pc	2223709 ¹⁾
HAS-U 5.8 M10x190	M10	190mm	12mm	12mm	20pc	2223820 ¹⁾
HAS-U 5.8 M12x110	M12	110mm	14mm	14mm	20pc	2223821 ¹⁾
HAS-U 5.8 M12x120	M12	120mm	14mm	14mm	20pc	2223822 ¹⁾
HAS-U 5.8 M12x160	M12	160mm	14mm	14mm	20pc	2223823
HAS-U 5.8 M12x180	M12	180mm	14mm	14mm	20pc	2223825 ¹⁾
HAS-U 5.8 M12x200	M12	200mm	14mm	14mm	20pc	2223826 ¹⁾
HAS-U 5.8 M12x220	M12	220mm	14mm	14mm	20pc	2223827 ¹⁾
HAS-U 5.8 M12x260	M12	260mm	14mm	14mm	20pc	2223867 ¹⁾
HAS-U 5.8 M12x300	M12	300mm	14mm	14mm	20pc	2223868 ¹⁾
HAS-U 5.8 M16x150	M16	150mm	18mm	18mm	20pc	2223828 ¹⁾
HAS-U 5.8 M16x165	M16	165mm	18mm	18mm	20pc	2223829 ¹⁾
HAS-U 5.8 M16x190	M16	190mm	18mm	18mm	20pc	2223830
HAS-U 5.8 M16x220	M16	220mm	18mm	18mm	10pc	2223869 ¹⁾

¹⁾ For detailed stock availability and lead time information please contact your Hilti representative.

Please visit Hilti website for the latest item numbers and related products

Customer Hotline: Hong Kong 8228 8118, Macau 00800 8228 8118 Email: hksales@hilti.com

Ordering designation	Anchor size	Anchor length	Drill bit diameter	Base plate clearance hole	Sales pack quantity	Item number
HAS-U 5.8 M16x260	M16	260mm	18mm	18mm	10pc	2223832 ¹⁾
HAS-U 5.8 M16x300	M16	300mm	18mm	18mm	10pc	2223870
HAS-U 5.8 M16x350	M16	350mm	18mm	18mm	10pc	2223871 ¹⁾
HAS-U 5.8 M16x500	M16	500mm	18mm	18mm	10pc	2223872 ¹⁾
HAS-U 5.8 M20x180	M20	180mm	22mm	22mm	10pc	2223873 ¹⁾
HAS-U 5.8 M20x240	M20	240mm	22mm	22mm	10pc	2223874
HAS-U 5.8 M20x260	M20	260mm	22mm	22mm	10pc	2223876
HAS-U 5.8 M20x300	M20	300mm	22mm	22mm	10pc	2223877 ¹⁾
HAS-U 5.8 M20x350	M20	350mm	22mm	22mm	10pc	2223878 ¹⁾
HAS-U 5.8 M20x400	M20	400mm	22mm	22mm	10pc	2223879 ¹⁾
HAS-U 5.8 M20x480	M20	480mm	22mm	22mm	10pc	2223880
HAS-U 5.8 M24x300	M24	300mm	28mm	26mm	5pc	2223881
HAS-U 5.8 M24x450	M24	450mm	28mm	26mm	5pc	2223882 ¹⁾

¹⁾ For detailed stock availability and lead time information please contact your Hilti representative.

Please visit Hilti website for the latest item numbers and related products

HAS-U 5.8 HDG



Approvals

ETA	ETA 15/0882 for HIT-RE 100 injection mortar for anchoring applications (ETAG 001-05, Option 7)
	ETA 16/0143 for HIT-RE 500V3 injection mortar for anchoring applications (ETAG 001-05, Option 7)
ETA, seismic	ETA 12/0084 for HIT-HY 200-R injection mortar and standard element for anchoring applications (ETAG 001-05, Option 1)

Approvals and test reports may apply to selected products only. Please refer to the documents for details.

Technical data

Head configuration	Externally threaded
Material composition	Steel, 5.8 grade, zinc-plated (min. 43µm)
Material, corrosion	Steel, zinc-plated

Order Now

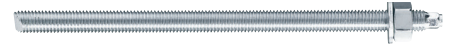


Ordering designation	Anchor size	Anchor length	Drill bit diameter	Base plate clearance hole	Sales pack quantity	Item number
HAS-U 5.8 HDG M8x80	M8	80mm	10mm	9mm	20pc	2223856 ¹⁾
HAS-U 5.8 HDG M8x110	M8	110mm	10mm	9mm	20pc	2223857 ¹⁾
HAS-U 5.8 HDG M8x150	M8	150mm	10mm	9mm	20pc	2223858 ¹⁾
HAS-U 5.8 HDG M10x95	M10	95mm	12mm	12mm	20pc	2223859 ¹⁾
HAS-U 5.8 HDG M10x115	M10	115mm	12mm	12mm	20pc	2223860 ¹⁾
HAS-U 5.8 HDG M10x130	M10	130mm	12mm	12mm	20pc	2223861 ¹⁾
HAS-U 5.8 HDG M10x170	M10	170mm	12mm	12mm	20pc	2223862 ¹⁾
HAS-U 5.8 HDG M10x190	M10	190mm	12mm	12mm	20pc	2223863 ¹⁾
HAS-U 5.8 HDG M12x110	M12	110mm	14mm	14mm	20pc	2223937 ¹⁾
HAS-U 5.8 HDG M12x120	M12	120mm	14mm	14mm	20pc	2223938 ¹⁾
HAS-U 5.8 HDG M12x160	M12	160mm	14mm	14mm	20pc	2223939 ¹⁾
HAS-U 5.8 HDG M12x180	M12	180mm	14mm	14mm	20pc	2223940 ¹⁾
HAS-U 5.8 HDG M12x200	M12	200mm	14mm	14mm	20pc	2223941 ¹⁾
HAS-U 5.8 HDG M12x220	M12	220mm	14mm	14mm	20pc	2223942 ¹⁾
HAS-U 5.8 HDG M12x260	M12	260mm	14mm	14mm	20pc	2223895 ¹⁾
HAS-U 5.8 HDG M12x300	M12	300mm	14mm	14mm	20pc	2223896 ¹⁾
HAS-U 5.8 HDG M16x150	M16	150mm	18mm	18mm	20pc	2223943 ¹⁾
HAS-U 5.8 HDG M16x165	M16	165mm	18mm	18mm	20pc	2223944 ¹⁾
HAS-U 5.8 HDG M16x190	M16	190mm	18mm	18mm	20pc	2223945 ¹⁾
HAS-U 5.8 HDG M16x220	M16	220mm	18mm	18mm	10pc	2223946 ¹⁾
HAS-U 5.8 HDG M16x260	M16	260mm	18mm	18mm	10pc	2223897 ¹⁾
HAS-U 5.8 HDG M16x300	M16	300mm	18mm	18mm	10pc	2223898 ¹⁾
HAS-U 5.8 HDG M16x350	M16	350mm	18mm	18mm	10pc	2223899 ¹⁾
HAS-U 5.8 HDG M16x500	M16	500mm	18mm	18mm	10pc	2223900 ¹⁾
HAS-U 5.8 HDG M20x180	M20	180mm	22mm	22mm	10pc	2223901 ¹⁾
HAS-U 5.8 HDG M20x240	M20	240mm	22mm	22mm	10pc	2223902 ¹⁾
HAS-U 5.8 HDG M20x260	M20	260mm	22mm	22mm	10pc	2223903 ¹⁾
HAS-U 5.8 HDG M20x300	M20	300mm	22mm	22mm	10pc	2223904 ¹⁾
HAS-U 5.8 HDG M20x350	M20	350mm	22mm	22mm	10pc	2223905 ¹⁾
HAS-U 5.8 HDG M20x400	M20	400mm	22mm	22mm	10pc	2223906 ¹⁾
HAS-U 5.8 HDG M20x480	M20	480mm	22mm	22mm	10pc	2223907 ¹⁾
HAS-U 5.8 HDG M24x300	M24	300mm	28mm	26mm	5pc	2223908 ¹⁾
HAS-U 5.8 HDG M24x450	M24	450mm	28mm	26mm	5pc	2223909 ¹⁾

¹⁾ For detailed stock availability and lead time information please contact your Hilti representative.

Please visit Hilti website for the latest item numbers and related products

Anchor rod HAS-U 8.8 (Galvanized, grade 8.8)



Approvals	
ETA	ETA 15/0882 for HIT-RE 100 injection mortar for anchoring applications (ETAG 001-05, Option 7)
	ETA 16/0143 for HIT-RE 500V3 injection mortar for anchoring applications (ETAG 001-05, Option 7)
ETA, seismic	ETA 12/0084 for HIT-HY 200-R injection mortar and standard element for anchoring applications (ETAG 001-05, Option 1)

Approvals and test reports may apply to selected products only. Please refer to the documents for details.



Technical data	
Head configuration	Externally threaded
Material composition	Steel, 8.8 grade, zinc-plated (min. 5µm)
Material, corrosion	Steel, zinc-plated

Order Now



Ordering designation	Anchor size	Anchor length	Drill bit diameter	Base plate clearance hole	Sales pack quantity	Item number
HAS-U 8.8 M8x150	M8	150mm	10mm	9mm	20pc	2223855 ¹⁾
HAS-U 8.8 M10x190	M10	190mm	12mm	12mm	20pc	2223833
HAS-U 8.8 M12x220	M12	220mm	14mm	14mm	20pc	2223834
HAS-U 8.8 M12x300	M12	300mm	14mm	14mm	20pc	2223883
HAS-U 8.8 M16x190	M16	190mm	18mm	18mm	20pc	2223835 ¹⁾
HAS-U 8.8 M16x300	M16	300mm	18mm	18mm	10pc	2223884 ¹⁾
HAS-U 8.8 M16x380	M16	380mm	18mm	18mm	10pc	2223885
HAS-U 8.8 M20x180	M20	180mm	22mm	22mm	10pc	2223886 ¹⁾
HAS-U 8.8 M20x260	M20	260mm	22mm	22mm	10pc	2223887 ¹⁾
HAS-U 8.8 M20x400	M20	400mm	22mm	22mm	10pc	2223888 ¹⁾
HAS-U 8.8 M24x300	M24	300mm	28mm	26mm	5pc	2223889 ¹⁾
HAS-U 8.8 M27x340	M27	340mm	30mm	30mm	5pc	2223890 ¹⁾
HAS-U 8.8 M30x380	M30	380mm	35mm	33mm	5pc	2223891 ¹⁾
HAS-U 8.8 M33x420	M33	420mm	37mm	36mm	5pc	2223892 ¹⁾
HAS-U 8.8 M36x460	M36	460mm	40mm	39mm	5pc	2223893 ¹⁾
HAS-U 8.8 M39x510	M39	510mm	42mm	42mm	5pc	2223894 ¹⁾

¹⁾ For detailed stock availability and lead time information please contact your Hilti representative.

Please visit Hilti website for the latest item numbers and related products

HAS-U 8.8 HDG



Approvals	
ETA	ETA 15/0882 for HIT-RE 100 injection mortar for anchoring applications (ETAG 001-05, Option 7)
	ETA 16/0143 for HIT-RE 500V3 injection mortar for anchoring applications (ETAG 001-05, Option 7)
ETA, seismic	ETA 12/0084 for HIT-HY 200-R injection mortar and standard element for anchoring applications (ETAG 001-05, Option 1)

Approvals and test reports may apply to selected products only. Please refer to the documents for details.



Technical data	
Head configuration	Externally threaded
Material composition	Steel, 8.8 grade, zinc-plated (min. 43µm)
Material, corrosion	Steel, zinc-plated

Order Now



Ordering designation	Anchor size	Anchor length	Drill bit diameter	Base plate clearance hole	Sales pack quantity	Item number
HAS-U 8.8 HDG M8x150	M8	150mm	10mm	9mm	20pc	2223947 ¹⁾
HAS-U 8.8 HDG M10x190	M10	190mm	12mm	12mm	20pc	2223948 ¹⁾
HAS-U 8.8 HDG M12x220	M12	220mm	14mm	14mm	20pc	2223949 ¹⁾
HAS-U 8.8 HDG M12x300	M12	300mm	14mm	14mm	20pc	2223910 ¹⁾
HAS-U 8.8 HDG M16x190	M16	190mm	18mm	18mm	20pc	2223703 ¹⁾
HAS-U 8.8 HDG M16x300	M16	300mm	18mm	18mm	10pc	2223911 ¹⁾
HAS-U 8.8 HDG M16x380	M16	380mm	18mm	18mm	10pc	2223912 ¹⁾
HAS-U 8.8 HDG M20x180	M20	180mm	22mm	22mm	10pc	2223913 ¹⁾
HAS-U 8.8 HDG M20x260	M20	260mm	22mm	22mm	10pc	2223914 ¹⁾
HAS-U 8.8 HDG M20x400	M20	400mm	22mm	22mm	10pc	2223915 ¹⁾
HAS-U 8.8 HDG M24x300	M24	300mm	28mm	26mm	5pc	2223916 ¹⁾
HAS-U 8.8 HDG M27x340	M27	340mm	30mm	30mm	5pc	2223917 ¹⁾
HAS-U 8.8 HDG M30x380	M30	380mm	35mm	33mm	5pc	2223918 ¹⁾

¹⁾ For detailed stock availability and lead time information please contact your Hilti representative.

Please visit Hilti website for the latest item numbers and related products

Anchor rod HAS-U (A4 stainless steel)



Approvals	
ETA	ETA 15/0882 for HIT-RE 100 injection mortar for anchoring applications (ETAG 001-05, Option 7)
	ETA 16/0143 for HIT-RE 500V3 injection mortar for anchoring applications (ETAG 001-05, Option 7)
ETA, seismic	ETA 12/0084 for HIT-HY 200-R injection mortar and standard element for anchoring applications (ETAG 001-05, Option 1)

Approvals and test reports may apply to selected products only. Please refer to the documents for details.



Technical data	
Head configuration	Externally threaded
Material composition	Steel, A4 (SS316)
Material, corrosion	Steel, stainless

Order Now



Ordering designation	Anchor size	Anchor length	Drill bit diameter	Base plate clearance hole	Sales pack quantity	Item number
HAS-U A4 M8x80	M8	80mm	10mm	9mm	20pc	2223864
HAS-U A4 M8x110	M8	110mm	10mm	9mm	20pc	2223865
HAS-U A4 M8x150	M8	150mm	10mm	9mm	20pc	2223866
HAS-U A4 M10x95	M10	95mm	12mm	9mm	20pc	2223836
HAS-U A4 M10x115	M10	115mm	12mm	12mm	20pc	2223837 ¹⁾
HAS-U A4 M10x130	M10	130mm	12mm	12mm	20pc	2223838
HAS-U A4 M10x170	M10	170mm	12mm	12mm	20pc	2223839 ¹⁾
HAS-U A4 M10x190	M10	190mm	12mm	12mm	20pc	2223840
HAS-U A4 M10x220	M10	220mm	12mm	12mm	20pc	2223841 ¹⁾
HAS-U A4 M12x110	M12	110mm	14mm	14mm	20pc	2223842 ¹⁾
HAS-U A4 M12x120	M12	120mm	14mm	14mm	20pc	2223843 ¹⁾
HAS-U A4 M12x160	M12	160mm	14mm	14mm	20pc	2223844
HAS-U A4 M12x180	M12	180mm	14mm	14mm	20pc	2223845 ¹⁾
HAS-U A4 M12x200	M12	200mm	14mm	14mm	20pc	2223846 ¹⁾
HAS-U A4 M12x220	M12	220mm	14mm	14mm	20pc	2223847
HAS-U A4 M12x260	M12	260mm	14mm	14mm	20pc	2223919 ¹⁾
HAS-U A4 M12x300	M12	300mm	14mm	14mm	20pc	2223920
HAS-U A4 M16x150	M16	150mm	18mm	18mm	20pc	2223848 ¹⁾
HAS-U A4 M16x165	M16	165mm	18mm	18mm	20pc	2223849 ¹⁾
HAS-U A4 M16x190	M16	190mm	18mm	18mm	20pc	2223850
HAS-U A4 M16x220	M16	220mm	18mm	18mm	20pc	2223851
HAS-U A4 M16x260	M16	260mm	18mm	18mm	10pc	2223921 ¹⁾
HAS-U A4 M16x300	M16	300mm	18mm	18mm	10pc	2223922 ¹⁾
HAS-U A4 M16x350	M16	350mm	18mm	18mm	10pc	2223923 ¹⁾
HAS-U A4 M16x380	M16	380mm	18mm	18mm	10pc	2223924
HAS-U A4 M20x180	M20	180mm	22mm	22mm	10pc	2223925 ¹⁾
HAS-U A4 M20x240	M20	240mm	22mm	22mm	10pc	2223926
HAS-U A4 M20x260	M20	260mm	22mm	22mm	10pc	2223927
HAS-U A4 M20x300	M20	300mm	22mm	22mm	10pc	2223928 ¹⁾
HAS-U A4 M20x350	M20	350mm	22mm	22mm	10pc	2223929 ¹⁾
HAS-U A4 M20x400	M20	400mm	22mm	22mm	10pc	2223930 ¹⁾
HAS-U A4 M20x480	M20	480mm	22mm	22mm	10pc	2223931
HAS-U A4 M24x300	M24	300mm	28mm	26mm	5pc	2223932
HAS-U A4 M24x450	M24	450mm	28mm	26mm	5pc	2223933 ¹⁾
HAS-U A4 M27x340	M27	340mm	30mm	30mm	5pc	2223934 ¹⁾
HAS-U A4 M30x380	M30	380mm	35mm	33mm	5pc	2223935 ¹⁾

¹⁾ For detailed stock availability and lead time information please contact your Hilti representative.

Please visit Hilti website for the latest item numbers and related products

Internally threaded sleeve HIS-N (Galvanized, grade 5.8)



Approvals	
ETA	ETA 04/0027 for HIT-RE 500 injection mortar for anchoring applications (ETAG 001-05, Option 7)
	ETA 04/0027 for HIT-RE 500 V3 injection mortar for anchoring applications (ETAG 001-05, Option 7)
ETA, seismic	ETA 12/0084 for HIT-HY 200-R injection mortar and standard element for anchoring applications (ETAG 001-05, Option 1)

Approvals and test reports may apply to selected products only. Please refer to the documents for details.



Technical data	
Head configuration	Inner thread
Material composition	Steel, 5.8 grade, zinc-plated (min. 5 µm)
Material, corrosion	Steel, zinc-plated
Anchor type	Internally threaded

Order Now



Ordering designation	Anchor size	Drill bit diameter	Drilling depth	Base plate clearance hole	Sales pack quantity	Item number
HIS-N M8x90	M8	14 mm	90 mm	9 mm	10 pc	258015¹⁾
HIS-N M10x110	M10	18 mm	110 mm	12 mm	10 pc	258016¹⁾
HIS-N M12x125	M12	22 mm	125 mm	14 mm	5 pc	258017¹⁾
HIS-N M16x170	M16	28 mm	170 mm	18 mm	5 pc	258018¹⁾
HIS-N M20x205	M20	32 mm	205 mm	22 mm	5 pc	258019¹⁾

¹⁾ This is a non-stock item. For detailed lead time information please contact your Hilti representative.

Please visit Hilti website for the latest item numbers and related products

Internally threaded sleeve HIS-RN (A4 stainless steel)



Approvals	
ETA	ETA 04/0027 for HIT-RE 500 injection mortar for anchoring applications (ETAG 001-05, Option 7)
	ETA 04/0027 for HIT-RE 500 V3 injection mortar for anchoring applications (ETAG 001-05, Option 7)
ETA, seismic	ETA 12/0084 for HIT-HY 200-R injection mortar and standard element for anchoring applications (ETAG 001-05, Option 1)

Approvals and test reports may apply to selected products only. Please refer to the documents for details.



Technical data	
Head configuration	Inner thread
Material composition	Steel, A4 (SS316)
Material, corrosion	Steel, stainless
Anchor type	Internally threaded

Order Now



Ordering designation	Anchor size	Drill bit diameter	Drilling depth	Base plate clearance hole	Sales pack quantity	Item number
HIS-RN M8x90 A4	M8	14 mm	90 mm	9 mm	10 pc	258024¹⁾
HIS-RN M10x110 A4	M10	18 mm	110 mm	12 mm	10 pc	258025
HIS-RN M12x125 A4	M12	22 mm	125 mm	14 mm	5 pc	258026
HIS-RN M16x170 A4	M16	28 mm	170 mm	18 mm	5 pc	258027¹⁾
HIS-RN M20x205 A4	M20	32 mm	205 mm	22 mm	5 pc	258028¹⁾

¹⁾ This is a non-stock item. For detailed lead time information please contact your Hilti representative.

Please visit Hilti website for the latest item numbers and related products

Setting tool TE-C (For HVU2 installation)



APPLICATIONS

- Setting tool for installing HVU2 with HAS

Approvals

ETA	ETA-18/0185 HVU2 bonded fastener for use in concrete
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Approvals and test reports may apply to selected products only. Please refer to the documents for details.

Technical data

Dispenser, setting tool, accessory, tester type	Setting tools
--------------------------------------------------------	---------------

Ordering designation	Connection end	Sales pack quantity	Item number
TE-C M8 - M16	TE-C	1 pcs	2181356

Please visit Hilti website for the latest item numbers and related products

Setting tool TE-C-E (For HVU2 installation)



APPLICATIONS

- Setting tool for installing HVU2 with HAS-E

Technical data

Dispenser, setting tool, accessory, tester type	Setting tools
--------------------------------------------------------	---------------

Order Now



Ordering designation	Connection end	Sales pack quantity	Item number
TE-C-E M8	TE-C	1 pc	369223
TE-C-E M10	TE-C	1 pc	369224
TE-C-E M12	TE-C	1 pc	369225
TE-C-E M16	TE-C	1 pc	369226

Please visit Hilti website for the latest item numbers and related products

Setting tool TE-Y-E (For HVU2 installation)



APPLICATIONS

- Setting tool for installing HVU2 with HAS-E

Technical data

Dispenser, setting tool, accessory, tester type	Setting tools
--------------------------------------------------------	---------------

Order Now



Ordering designation	Connection end	Sales pack quantity	Item number
TE-Y-E M16	TE-Y	1 pc	369227 ¹⁾
TE-Y-E M20	TE-Y	1 pc	369228 ¹⁾
TE-Y-E M24	TE-Y	1 pc	369229 ¹⁾

¹⁾ For detailed stock availability and lead time information please contact your Hilti representative.

Please visit Hilti website for the latest item numbers and related products

Setting tool HIS-S (For HVU2 installation)



APPLICATIONS

- Setting tool for installing HVU2 with HIS-N

Technical data

Dispenser, setting tool, accessory, tester type Setting tools

Order Now



Ordering designation	Sales pack quantity	Item number
HIS-S M8	1 pc	45964 ¹⁾
HIS-S M10	1 pc	45965 ¹⁾
HIS-S M12	1 pc	45966 ¹⁾
HIS-S M16	1 pc	45967 ¹⁾
HIS-S M20	1 pc	45968 ¹⁾

¹⁾ For detailed stock availability and lead time information please contact your Hilti representative.

Please visit Hilti website for the latest item numbers and related products

Mixers for Hilti injectable (RE&HY)



Technical data

Dispenser, setting tool, accessory, tester type Mixing nozzles and injection accessories

Order Now













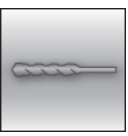


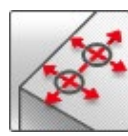



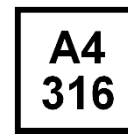

Ordering designation	Sales pack quantity	Item number
Mixers HIT-RE-M (for RE&HY)	1 pc	337111

Please visit Hilti website for the latest item numbers and related products

HVU2 adhesive capsule

Anchor design (EN 1992-4) / Rods&Sleeves / Concrete

Anchor version	Benefits
 <p>HVU2 Mortar capsule</p>	<ul style="list-style-type: none"> - SafeSet technology: Hilti hollow drill bit for automatic cleaning - Suitable for cracked and non-cracked concrete C20/25 to C50/60 both for hammer drilled and diamond cored holes - Highly reliable and safe anchor for seismic design with ETA C1/C2 approval. Seismic C1 ETA available even for Diamond cored holes. - Clean and fast installation that suits hard jobsite conditions - Suitable for dry and water saturated concrete - High loading capacity - Short curing time - In service temperature range up to 120°C short term / 72°C long term
 <p>Anchor rod: HAS-U HAS-U HDG HAS-U A4 HAS-U HCR (M8-M30)</p>	
 <p>Internally threaded sleeve: HIS-N HIS-RN (M8-M20)</p>	

Base material	Load conditions
 Concrete (non-cracked)  Concrete (cracked)  Dry concrete  Wet concrete	 Static/quasi-static  Fire resistance  Seismic
 Hammer drilled holes  Diamond drilled holes  Hilti SafeSet technology  Small edge distance and spacing	 European Technical Assessment  CE conformity  HILTI PROFIS design Software  A4 316 Corrosion resistance  HCR highMo High corrosion resistance

Approvals / certificates

Description	Authority / Laboratory	No. / date of issue
European Technical Assessment ^{a)}	DIBt, Berlin	ETA-16/0515 / 2019-11-13
Fire test assessment	ING.Thiele, Pirmasens	21735 / 2017-08-01

a) All data given in this section according to ETA-16/0515, issue 2019-06-17.

Recommended general notes

* The below clauses based on Hilti product qualifications are for references only. Selection of clauses by the engineer shall be based on the specific application needs. Please contact Hilti's technical team for further details.

- Anchor shall be capsule type adhesive
- Anchor shall be tested for water tightness
- Approved for use in uncracked and cracked concrete under static and quasi-static loading
- Approved for use in diamond cored drilled holes. In such case the performance shall be on the same level of hammer drilled holes when proper installation steps are followed.
- Anchor shall be installed in combination with dust removal drilling accessories to ensure dust free environment and clean borehole.
- Anchor shall be approved for overhead installation.
- Anchors shall obtain the European Technical Assessment (ETA) report.
- The anchor bolt design shall be done either according to "ETAG001 Annex C Design Method" issued by EOTA or "Guides on design of post-installed anchor bolt systems in Hong Kong" issued by HKISC.
- Anchors shall be tested in accordance to either ETAG-001 Annex A or ACI 355.2 by accredited laboratories under HOKLAS Mutual Recognition Arrangement (MRA) Partners.
- Anchor to be approved by NSF for use in contact with drinking water.

For seismic application:

- Approved for use under seismic actions category 1 (C1) and 2 (C2) according to EOTA TR045 "Design of Metal Anchors For Use In Concrete Under Seismic Actions, 02/2013".

Static and quasi-static resistance (for a single anchor)

All data in this section applies to:

- Correct setting (See setting instructions)
- No edge distance and spacing influence
- *Steel* failure
- Minimum base material thickness
- Concrete C20/25, $f_{ck,cube} = 25 \text{ N/mm}^2$
- Temperature range I: $-40 \text{ }^\circ\text{C}$ to $+40 \text{ }^\circ\text{C}$
(max. long term temperature $+24 \text{ }^\circ\text{C}$ and max. short term temperature $+40 \text{ }^\circ\text{C}$)
- All data given in this section according ETA-16/0515, issue 2019-11-13.
- Short term loading. For long term loading please apply ψ_{sus} .
Hammer drilled holes and Hammer drilled holes with Hollow Drill Bit: $\psi_{sus} = 1.00$
Diamond cored holes: $\psi_{sus} = 0.78$

Embedment depth and base material thickness

Anchor size		M8	M10	M12	M16	M20	M24	M27	M30
HAS-U									
Eff. Anchorage depth	h_{ef} [mm]	80	90	110	125	170	210	240	270
Base material thickness	h_{min} [mm]	110	120	140	160	220	270	300	340
HIS-N									
Eff. Anchorage depth	h_{ef} [mm]	90	110	125	170	205	-	-	-
Base material thickness	h_{min} [mm]	120	150	170	230	270	-	-	-

Hammer drilled holes and hammer drilled holes with hollow drill bit¹⁾:

Characteristic resistance

Anchor size		M8	M10	M12	M16	M20	M24	M27	M30
Non-cracked concrete									
Tension N_{Rk}	HAS-U 5.8	18,3	29,0	42,2	68,8	109	150	-	-
	HAS-U 8.8	24,1	42,0	56,8	68,8	109	150	183	218
	HAS-U A4	24,1	40,6	56,8	68,8	109	150	183	218
	HAS-U HCR	24,1	42,0	56,8	68,8	109	150	-	-
	HIS-N 8.8	25,0	46,0	67,0	109	116	-	-	-

	HIS-RN 70		26,0	41,0	59,0	109	144	-	-	-
Shear V_{Rk}	HAS-U 5.8	[kN]	9,2	14,5	21,1	39,3	61,3	88,3	-	-
	HAS-U 8.8		14,6	23,2	33,7	62,8	98,0	141	184	224
	HAS-U A4		12,8	20,3	29,5	55,0	85,8	124	115	140
	HAS-U HCR		14,6	23,2	33,7	62,8	98,0	124	-	-
	HIS-N 8.8		13,0	23,0	34,0	63,0	58,0	-	-	-
	HIS-RN 70		13,0	20,0	30,0	55,0	83,0	-	-	-
Cracked concrete										
Tension N_{Rk}	HAS-U 5.8	[kN]	10,1	24,0	35,2	48,1	76,3	105	-	-
	HAS-U 8.8		10,1	24,0	35,2	48,1	76,3	105	128	153
	HAS-U A4		10,1	24,0	35,2	48,1	76,3	105	128	153
	HAS-U HCR		10,1	24,0	35,2	48,1	76,3	105	-	-
	HIS-N 8.8		23,0	37,1	48,1	76,3	101	-	-	-
	HIS-RN 70		23,0	37,1	48,1	76,3	101	-	-	-
Shear V_{Rk}	HAS-U 5.8	[kN]	9,2	14,5	21,1	39,3	61,3	88,3	-	-
	HAS-U 8.8		14,6	23,2	33,7	62,8	98,0	141	184	224
	HAS-U A4		12,8	20,3	29,5	55,0	85,8	124	115	140
	HAS-U HCR		14,6	23,2	33,7	62,8	98,0	124	-	-
	HIS-N 8.8		13,0	23,0	34,0	63,0	58,0	-	-	-
	HIS-RN 70		13,0	20,0	30,0	55,0	83,0	-	-	-

1) Hilti hollow drill bit is available for the element sizes M12 to M30.

Design resistance

Anchor size		M8	M10	M12	M16	M20	M24	M27	M30	
Non-cracked concrete										
Tension N_{Rd}	HAS-U 5.8	[kN]	12,2	19,3	28,1	45,8	72,7	99,8	-	-
	HAS-U 8.8		16,1	28,0	37,8	45,8	72,7	99,8	122	145
	HAS-U A4		15,3	24,2	35,1	45,8	72,7	99,8	80,2	98,1
	HAS-U HCR		16,1	28,0	37,8	45,8	72,7	99,8	-	-
	HIS-N 8.8		16,7	30,7	44,7	72,7	77,3	-	-	-
	HIS-RN 70		13,9	21,9	31,6	58,8	69,2	-	-	-
Shear V_{Rd}	HAS-U 5.8	[kN]	7,3	11,6	16,9	31,4	49,0	70,6	-	-
	HAS-U 8.8		11,7	18,6	27,0	50,2	78,4	113	147	180
	HAS-U A4		9,2	14,5	21,1	39,3	55,0	79,2	48,2	58,9
	HAS-U HCR		11,7	18,6	27,0	50,2	78,4	70,6	-	-
	HIS-N 8.8		10,4	18,4	27,2	50,4	46,4	-	-	-
	HIS-RN 70		8,3	12,8	19,2	35,3	41,5	-	-	-
Cracked concrete										
Tension N_{Rd}	HAS-U 5.8	[kN]	6,7	16,0	23,5	32,1	50,9	69,9	-	-
	HAS-U 8.8		6,7	16,0	23,5	32,1	50,9	69,9	85,4	102
	HAS-U A4		6,7	16,0	23,5	32,1	50,9	69,9	80,2	98,1
	HAS-U HCR		6,7	16,0	23,5	32,1	50,9	69,9	-	-
	HIS-N 8.8		15,3	24,7	32,1	50,9	67,4	-	-	-
	HIS-RN 70		13,9	21,9	31,6	50,9	67,4	-	-	-
Shear V_{Rd}	HAS-U 5.8	[kN]	7,3	11,6	16,9	31,4	49,0	70,6	-	-
	HAS-U 8.8		11,7	18,6	27,0	50,2	78,4	113	147	180
	HAS-U A4		9,2	14,5	21,1	39,3	55,0	79,2	48,2	58,9
	HAS-U HCR		11,7	18,6	27,0	50,2	78,4	70,6	-	-
	HIS-N 8.8		10,4	18,4	27,2	50,4	46,4	-	-	-
	HIS-RN 70		8,3	12,8	19,2	35,3	41,5	-	-	-

1) Hilti hollow drill bit is available for the element sizes M12 to M30.

Recommended loads²⁾

Anchor size		M8	M10	M12	M16	M20	M24	M27	M30	
Non-cracked concrete										
Tension N_{Rec}	HAS-U 5.8	[kN]	6,1	9,7	14,1	22,9	36,3	50,0	-	-
	HAS-U 8.8		8,0	14,0	18,9	22,9	36,3	50,0	61,0	72,7
	HAS-U A4		8,0	13,5	18,9	22,9	36,3	50,0	61,0	72,7
	HAS-U HCR		8,0	14	18,9	22,9	36,3	50,0	-	-

	HIS-N 8.8	8,3	15,3	22,3	36,3	38,7	-	-	-
	HIS-RN 70	8,7	13,7	19,7	36,3	48,0	-	-	-
Shear V_{Rec}	HAS-U 5.8	3,1	4,8	7,0	13,1	20,4	29,4	-	-
	HAS-U 8.8	4,9	7,7	11,2	20,9	32,7	47,0	61,3	74,7
	HAS-U A4	4,3	6,8	9,8	18,3	28,6	41,3	38,3	46,7
	HAS-U HCR	4,9	7,7	11,2	20,9	32,7	41,3	-	-
	HIS-N 8.8	4,3	7,7	11,3	21,0	19,3	-	-	-
	HIS-RN 70	4,3	6,7	10,0	18,3	27,7	-	-	-
Cracked concrete									
Tension N_{Rec}	HAS-U 5.8	4,8	11,4	16,8	22,9	36,3	49,9	-	-
	HAS-U 8.8	4,8	11,4	16,8	22,9	36,3	49,9	61,0	72,7
	HAS-U A4	4,8	11,4	16,8	22,9	36,3	49,9	57,3	70,1
	HAS-U HCR	4,8	11,4	16,8	22,9	36,3	49,9	-	-
	HIS-N 8.8	10,9	17,6	22,9	36,3	48,1	-	-	-
	HIS-RN 70	9,9	15,7	22,5	36,3	48,1	-	-	-
Shear V_{Rec}	HAS-U 5.8	5,2	8,3	12,0	22,4	35,0	50,4	-	-
	HAS-U 8.8	8,4	13,3	19,3	35,9	56,0	80,7	105	128
	HAS-U A4	6,5	10,4	15,1	28,0	39,3	56,6	34,4	42,1
	HAS-U HCR	8,4	13,3	19,3	35,9	56,0	50,4	-	-
	HIS-N 8.8	7,4	13,1	19,4	36,0	33,1	-	-	-
	HIS-RN 70	6,0	9,2	13,7	25,2	29,6	-	-	-

1) Hilti hollow drill bit is available for the element sizes M12-M30.

2) 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.

Diamond cored holes:

Characteristic resistance

Anchor size		M8	M10	M12	M16	M20	M24	M27	M30
Non-cracked concrete									
Tension N_{Rk}	HAS-U 5.8	-	29,0	42,2	68,8	109	150	-	-
	HAS-U 8.8	-	39,6	56,8	68,8	109	150	183	218
	HAS-U A4	-	39,6	56,8	68,8	109	150	183	218
	HAS-U HCR	-	39,6	56,8	68,8	109	150	-	-
	HIS-N 8.8	25,0	46,0	67,0	109	116	-	-	-
	HIS-RN 70	26,0	41,0	59,0	109	144	-	-	-
Shear V_{Rk}	HAS-U 5.8	-	14,5	21,1	39,3	61,3	88,3	-	-
	HAS-U 8.8	-	23,2	33,7	62,8	98,0	141	184	224
	HAS-U A4	-	20,3	29,5	55,0	85,8	124	115	140
	HAS-U HCR	-	23,2	33,7	62,8	98,0	124	-	-
	HIS-N 8.8	13,0	23,0	34,0	63,0	58,0	-	-	-
	HIS-RN 70	13,0	20,0	30,0	55,0	83,0	-	-	-
Cracked concrete									
Tension N_{Rk}	HAS-U 5.8	-	19,8	29,0	44,0	74,8	105	-	-
	HAS-U 8.8	-	19,8	29,0	44,0	74,8	105	128	153
	HAS-U A4	-	19,8	29,0	44,0	74,8	105	128	153
	HAS-U HCR	-	19,8	29,0	44,0	74,8	105	-	-
	HIS-N 8.8	15,9	25,7	36,2	61,0	80,0	-	-	-
	HIS-RN 70	15,9	25,7	36,2	61,0	80,0	-	-	-
Shear V_{Rk}	HAS-U 5.8	-	14,5	21,1	39,3	61,3	88,3	-	-
	HAS-U 8.8	-	23,2	33,7	62,8	98,0	141	184	224
	HAS-U A4	-	20,3	29,5	55,0	85,8	124	115	140
	HAS-U HCR	-	23,2	33,7	62,8	98,0	124	-	-
	HIS-N 8.8	13,0	23,0	34,0	63,0	58,0	-	-	-
	HIS-RN 70	13,0	20,0	30,0	55,0	83,0	-	-	-

Design resistance

Anchor size		M8	M10	M12	M16	M20	M24	M27	M30
Non-cracked concrete									
Tension N_{Rd}	HAS-U 5.8	-	19,3	28,1	45,8	72,7	99,8	-	-
	HAS-U 8.8	-	26,4	37,8	45,8	72,7	99,8	122	145
	HAS-U A4	-	24,2	35,1	45,8	72,7	99,8	80,2	98,1
	HAS-U HCR	-	26,4	37,8	45,8	72,7	99,8	-	-
	HIS-N 8.8	16,7	30,7	44,7	72,7	77,3	-	-	-
	HIS-RN 70	13,9	21,9	31,6	58,8	69,2	-	-	-
Shear V_{Rd}	HAS-U 5.8	-	11,6	16,9	31,4	49,0	70,6	-	-
	HAS-U 8.8	-	18,6	27,0	50,2	78,4	113	147	180
	HAS-U A4	-	14,5	21,1	39,3	55,0	79,2	48,2	58,9
	HAS-U HCR	-	18,6	27,0	50,2	78,4	70,6	-	-
	HIS-N 8.8	10,4	18,4	27,2	50,4	46,4	-	-	-
	HIS-RN 70	8,3	12,8	19,2	35,3	41,5	-	-	-
Cracked concrete									
Tension N_{Rd}	HAS-U 5.8	-	13,2	19,4	29,3	49,8	69,9	-	-
	HAS-U 8.8	-	13,2	19,4	29,3	49,8	69,9	85,4	102
	HAS-U A4	-	13,2	19,4	29,3	49,8	69,9	80,2	98,1
	HAS-U HCR	-	13,2	19,4	29,3	49,8	69,9	-	-
	HIS-N 8.8	10,6	17,1	24,2	40,7	53,3	-	-	-
	HIS-RN 70	10,6	17,1	24,2	40,7	53,3	-	-	-
Shear V_{Rd}	HAS-U 5.8	-	11,6	16,9	31,4	49,0	70,6	-	-
	HAS-U 8.8	-	18,6	27,0	50,2	78,4	113	147	180
	HAS-U A4	-	14,5	21,1	39,3	55,0	79,2	48,2	58,9
	HAS-U HCR	-	18,6	27,0	50,2	78,4	70,6	-	-
	HIS-N 8.8	10,4	18,4	27,2	50,4	46,4	-	-	-
	HIS-RN 70	8,3	12,8	19,2	35,3	41,5	-	-	-

Recommended loads ^{a)}

Anchor size		M8	M10	M12	M16	M20	M24	M27	M30
Non-cracked concrete									
Tension N_{Rec}	HAS-U 5.8	-	9,7	14,1	23,0	36,4	50,0	-	-
	HAS-U 8.8	-	13,2	18,9	23,0	36,4	50,0	61,0	72,7
	HAS-U A4	-	13,2	18,9	23,0	36,4	50,0	61,0	72,7
	HAS-U HCR	-	13,2	18,9	23,0	36,4	50,0	-	-
	HIS-N 8.8	8,3	15,3	22,3	36,4	38,7	-	-	-
	HIS-RN 70	8,7	13,7	19,7	36,4	48,0	-	-	-
Shear V_{Rec}	HAS-U 5.8	-	4,8	7,0	13,1	20,5	29,5	-	-
	HAS-U 8.8	-	7,7	11,2	21,0	32,7	47,0	61,4	74,7
	HAS-U A4	-	6,8	9,8	18,4	28,6	41,4	38,4	46,7
	HAS-U HCR	-	7,7	11,2	21,0	32,7	41,4	-	-
	HIS-N 8.8	4,3	7,7	11,3	21,0	19,4	-	-	-
	HIS-RN 70	4,3	6,7	10,0	18,4	27,7	-	-	-
Cracked concrete									
Tension N_{Rec}	HAS-U 5.8	-	6,6	9,7	14,7	25,0	35,0	-	-
	HAS-U 8.8	-	6,6	9,7	14,7	25,0	35,0	42,7	51,0
	HAS-U A4	-	6,6	9,7	14,7	25,0	35,0	42,7	51,0
	HAS-U HCR	-	6,6	9,7	14,7	25,0	35,0	-	-
	HIS-N 8.8	5,3	8,6	12,1	20,4	26,7	-	-	-
	HIS-RN 70	5,3	8,6	12,1	20,4	26,7	-	-	-
Shear V_{Rec}	HAS-U 5.8	-	4,8	7,1	13,1	20,5	29,5	-	-
	HAS-U 8.8	-	7,7	11,3	21,0	32,7	47,0	61,4	74,7
	HAS-U A4	-	6,7	9,9	18,4	28,6	41,4	38,4	46,7
	HAS-U HCR	-	7,7	11,3	21,0	32,7	41,4	-	-
	HIS-N 8.8	4,3	7,7	11,4	21,0	19,4	-	-	-
	HIS-RN 70	4,3	6,7	10,0	18,4	27,7	-	-	-

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 for HAS-U

Anchor size			M8	M10	M12	M16	M20	M24	M27	M30
Nominal tensile strength f_{uk}	HAS-U 5.8	[N/mm ²]	500	500	500	500	500	500	-	-
	HAS-U 8.8		800	800	800	800	800	800	800	800
	HAS-U A4		700	700	700	700	700	700	500	500
	HAS-U HCR		800	800	800	800	800	700	-	-
Yield strength f_{yk}	HAS-U 5.8	[N/mm ²]	440	440	440	440	400	400	-	-
	HAS-U 8.8		640	640	640	640	640	640	640	640
	HAS-U A4		450	450	450	450	450	450	210	210
	HAS-U HCR		640	640	640	640	640	400	-	-
Stressed cross-section A_s	HAS-U	[mm ²]	36,6	58,0	84,3	157	245	353	459	561
Moment of resistance W	HAS-U	[mm ³]	31,2	62,3	109	277	541	935	1387	1874

Mechanical properties for HIS-N

Anchor size			M8	M10	M12	M16	M20
Nominal tensile strength f_{uk}	HIS-N	[N/mm ²]	490	490	490	490	490
	Screw 8.8		800	800	800	800	800
	HIS-RN		700	700	700	700	700
	Screw 70		700	700	700	700	700
Yield strength f_{yk}	HIS-N	[N/mm ²]	390	390	390	390	390
	Screw 8.8		640	640	640	640	640
	HIS-RN		350	350	350	350	350
	Screw 70		450	450	450	450	450
Stressed cross-section A_s	HIS-(R)N	[mm ²]	51,5	108	169	256	238
	Screw		36,6	58,0	84,3	157	245
Moment of resistance W	HIS-(R)N	[mm ³]	145	430	840	1595	1543
	Screw		31,2	62,3	109	277	541

Material quality for HAS-U

Part	Material
Metal parts made of zinc coated steel	
HAS-U	M8 to M24 Strength class 5.8: - Rupture elongation ($l_0 = 5d$) > 8% ductile M8 to M30: Strength class 8.8: - Rupture elongation ($l_0 = 5d$) > 12% ductile Electroplated zinc coated $\geq 5 \mu\text{m}$; (F) hot dip galvanized $\geq 45 \mu\text{m}$
Washer	Electroplated zinc coated $\geq 5 \mu\text{m}$; hot dip galvanized $\geq 45 \mu\text{m}$
Nut	Strength class adapted to strength class of threaded rod. Electroplated zinc coated $\geq 5 \mu\text{m}$; hot dip galvanized $\geq 45 \mu\text{m}$
Metal parts made of stainless steel	
HAS-U A4	M8 to M24 Strength class 70: M27 to M30 Strength class 50: - Rupture elongation ($l_0=5d$) > 8% ductile - Stainless steel A4 according to EN 10088-1:2014
Washer	Stainless steel A4 according to EN 10088-1:2014
Nut	Strength class adapted to strength class of threaded rod. Stainless steel A4 according to EN 10088-1:2014
Metal parts made of high corrosion resistant steel	
HAS-U HCR	M8 to M20 Strength class 70: M24 Strength class 80: Rupture elongation ($l_0 = 5d$) > 8% ductile High corrosion resistant steel according to EN 10088-1:2014
Washer	High corrosion resistant steel according to EN 10088-1:2014
Nut	Strength class adapted to strength class of threaded rod High corrosion resistant steel according to EN 10088-1:2014

Material quality for HIS-N

Part	Material	
Metal parts made of zinc coated steel		
HIS-N	Internal threaded sleeve	Electroplated zinc coated $\geq 5 \mu\text{m}$
	Screw 8.8	Strength class 8.8, A5 > 8 % Ductile Steel galvanized $\geq 5 \mu\text{m}$
Metal parts made of stainless steel		
HIS-RN	Internal threaded sleeve	Stainless steel A4 according to EN 10088-1:2014
	Screw 70	Strength class 70, A5 > 8 % Ductile Stainless steel 1.4401; 1.4404, 1.4578; 1.4571; 1.4439; 1.4362

Setting information

Installation temperature range:

-10°C to +40°C for the standard variation of temperature and rapid variation of temperature after installation.

In service temperature range

Hilti HVU2 adhesive may be applied in the temperature ranges given below. An elevated base material temperature may lead to a reduction of the design bond resistance.

Temperature range	Base material temperature	Maximum long term base material temperature	Maximum short term base material temperature
Temperature range I	-40 °C to +40 °C	+24 °C	+40 °C
Temperature range II	-40 °C to +80 °C	+50 °C	+80 °C
Temperature range III	-40 °C to +120 °C	+72 °C	+120 °C

Max short term base material temperature

Short-term elevated base material temperatures are those that occur over brief intervals, e.g. as a result of diurnal cycling.

Max long term base material temperature

Long-term elevated base material temperatures are roughly constant over significant periods of time.

Curing time

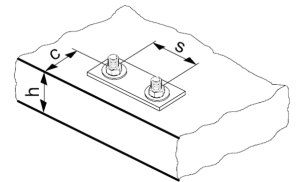
Temperature of the base material	Minimum curing time t_{cure}
-10 °C to -6 °C	5 hours
-5 °C to -1 °C	3 hours
0 °C to 4 °C	40 min
5 °C to 9 °C	20 min
10 °C to 19 °C	10 min
20 °C to 40 °C	5 min

Setting details for HAS-U

Anchor size		M8	M10	M12	M16	M20	M24	M27	M30	
Foil capsule HVU2		8x80	10x90	12x110	16x125	20x170	24x210	27x240	30x270	
Diameter of element	$d_1=d_{nom}$ [mm]	8	10	12	16	20	24	27	30	
Nom. diameter of drill	d_0 [mm]	10	12	14	18	22	28	30	35	
Eff. Embedment depth and drill hole in the fixture	$h_{ef}=h_0$ [mm]	80	90	110	125	170	210	240	270	
Max. diameter of clearance hole in the fixture	d_f [mm]	9	12	14	18	22	26	30	33	
Min. thickness of concrete member	h_{min} [mm]	110	120	140	160	220	270	300	340	
Max. torque moment ^{a)}	T_{max} [Nm]	10	20	40	80	150	200	270	300	
Min. spacing	s_{min} [mm]	40	50	60	75	90	115	120	140	
Min. edge distance	c_{min} [mm]	40	45	45	50	55	60	75	80	
Critical spacing for splitting failure	$s_{cr,sp}$	$2 C_{cr,sp}$								
Critical edge distance for splitting failure ^{b)}	$c_{cr,sp}$ [mm]	$1,0 \cdot h_{ef}$		for $h / h_{ef} \geq 2,0$						
		$4,6 h_{ef} - 1,8 h$		for $2,0 > h/h_{ef} > 1,3$						
		$2,26 h_{ef}$		for $h / h_{ef} \leq 1,3$						
Critical spacing for concrete cone failure	$s_{cr,N}$ [mm]	$2 C_{cr,N}$						$3 h_{ef}$		
Critical edge distance for concrete cone	$c_{cr,N}$ [mm]	$1,5 h_{ef}$								

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

- a) Max. recommended torque moment to avoid splitting failure during installation with min. spacing and/or edge distance
- b) h : base material thickness ($h \geq h_{min}$)
- c) The critical edge distance for concrete cone failure depends on the embedment depth h_{ef} and the design bond resistance. The simplified formula given in this table is on the safe side.



HAS-U...



Marking:

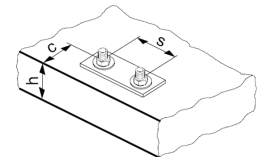
Steel grade number and length identification letter: e.g. 8L

Setting details for HIS-N

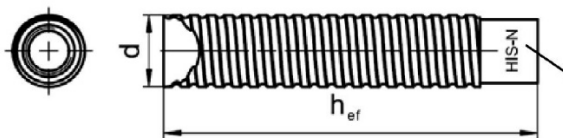
Anchor size		M8	M10	M12	M16	M20
Foil capsule HVU2		10x90	12x110	16x125	20x170	24x210
Diameter of element	$d_1=d_{nom}$ [mm]	12,5	16,5	20,5	25,4	27,8
Nominal diameter of drill bit	d_0 [mm]	14	18	22	28	32
Eff. Embedment depth and drill hole in fixture	$h_{ef}=h_0$ [mm]	90	110	125	170	205
Max. diameter of clearance hole in the	d_f [mm]	9	12	14	18	22
Min. thickness of concrete member	h_{min} [mm]	120	150	170	230	270
Max. torque moment ^{a)}	T_{max} [Nm]	10	20	40	80	150
Thread engagement	h_s [mm]	8-20	10-25	12-30	16-40	20-50
Min. spacing	s_{min} [mm]	60	75	90	115	130
Min. edge distance	c_{min} [mm]	40	45	55	65	90
Critical spacing for	$s_{cr,sp}$	$2 c_{cr,sp}$				
Critical edge distance for splitting failure ^{b)}	$c_{cr,sp}$ [mm]	$1,0 \cdot h_{ef}$		for $h / h_{ef} \geq 2,0$		
		$4,6 h_{ef} - 1,8 h$		for $2,0 > h/h_{ef} > 1,3$		
		$2,26 h_{ef}$		for $h / h_{ef} \leq 1,3$		
Critical spacing for concrete cone failure	$s_{cr,N}$ [mm]	$2 c_{cr,N}$				$1,5 h_{ef}$
Critical edge distance for concrete cone	$c_{cr,N}$ [mm]	$1,5 h_{ef}$				

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

- a) Max. recommended torque moment to avoid splitting failure during installation with min. spacing and/or edge distance
- b) h : base material thickness ($h \geq h_{min}$)
- c) The critical edge distance for concrete cone failure depends on the embedment depth h_{ef} and the design bond resistance. The simplified formula given in this table is on the safe side.



Internally threaded sleeve HIS-(R)N...



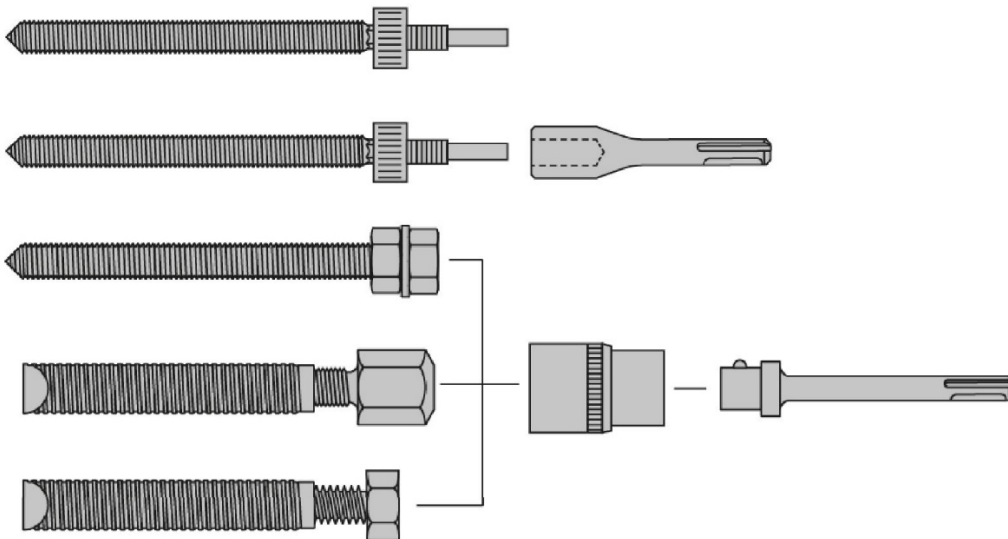
Marking:
 Identifying mark - HILTI and embossing "HIS-N" (for zinc coated steel)
 embossing "HIS-RN" (for stainless steel)

Drilling and cleaning parameters

HAS-U	HIS-N	Hammer drilling	Hollow Drill Bit	Diamond coring	Brush HIT-RB
		d ₀ [mm]			
M8	-	10	-	-	-
M10	-	12	-	12	12
M12	M8	14	14	14	14
M16	M10	18	18	18	18
M20	M12	22	22	22	22
M24	M16	28	28	28	28
M27	-	30	-	30	30
-	M20	32	32	32	32
M30	-	35	35	35	35

Setting tools parameters

HAS	HIS-N	TE (A)	SID 4 A-22	SIW 22T-A	SF(H)	RPM
M8	-	1...7	+	+	2, 6, 8, 10, 14, 22	450...1300
M10	M8	1...7	+	+	6, 8, 10, 14, 22	450...1300
M12	M10	1...40	+	+	6, 8, 10, 14, 22	450...1300
M16	M12	1...40	+	-	6, 8, 10, 14, 22	450...1300
M20	-	50...60	-	-	-	-
-	M16	40...80	-	-	-	-
M24	-	50...80	-	-	-	-
-	M20	40...80	-	-	-	-
M27	-	60...80	-	-	-	-
M30	-	60...80	-	-	-	-



Setting tool		Article number	TE (A) 1...40	TE 50...80	SF (H)	SID 4-A22	HIS-S
-		-	-	-	+	-	-
TE-C HVU2		#2181356	+	-	-	-	-
TE-Y HVU2		#2230162...5	-	+	-	-	-
TE-C 1/2"		#32220	+	-	-	-	+
TE-Y 3/4"		#32221	-	+	-	-	+
SI-SA 1/4"-1/2"		#2077174	-	-	+	+	+
SI-SA 7/16"		#2134075	-	-	+	-	+

Setting instructions

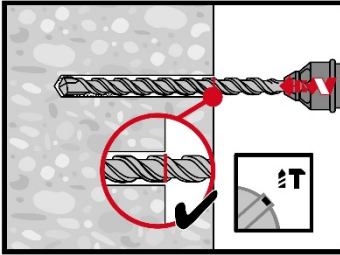
*For detailed information on installation see instruction for use given with the package of the product.



Safety regulations.

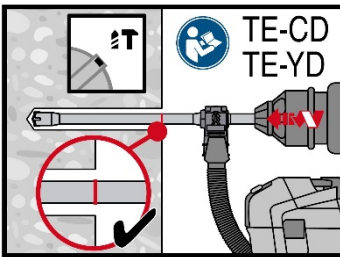
Review the Material Safety Data Sheet (MSDS) before use for proper and safe handling! Wear well-fitting protective goggles and protective gloves when working with Hilti HVU2.

Hole drilling



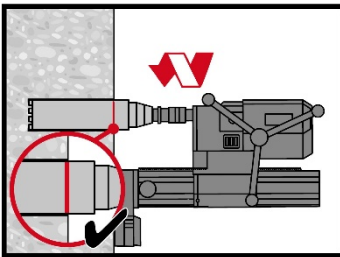
Hammer drilled hole

For dry or wet concrete and installation in flooded holes (no sea water).



Hammer drilled hole with Hollow drill bit

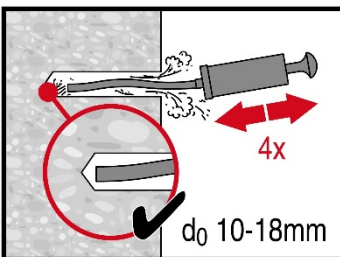
For dry and wet concrete, only.
No cleaning required.



Diamond Coring

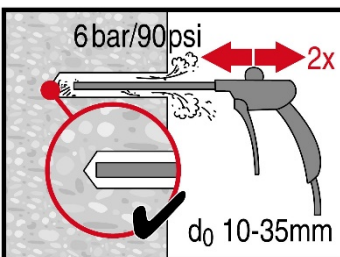
For dry or wet concrete only.

Hole cleaning



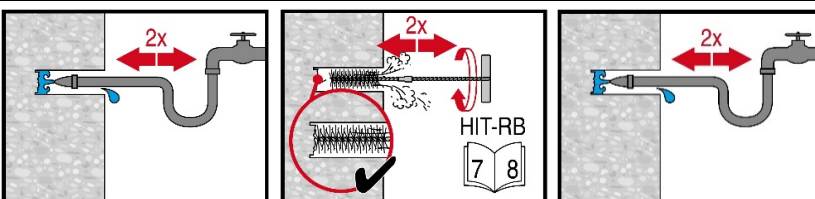
Manual cleaning for hammer drilled hole

for drill hole diameters $d_0 \leq 18$ mm and drill hole depths $h_0 \leq 10 \cdot d_0$.



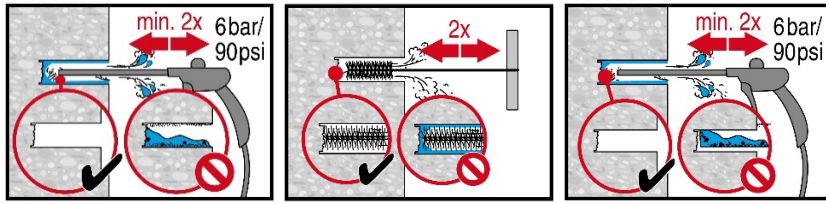
Compressed air cleaning (CAC) for hammer drilled hole

for all drill hole diameters d_0 and all drill hole depths h_0 .

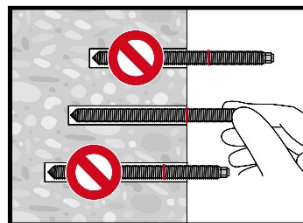
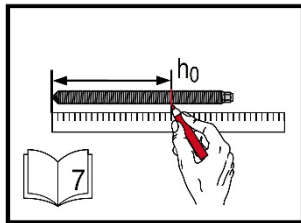


Hammer drilled flooded holes and diamond cored holes:

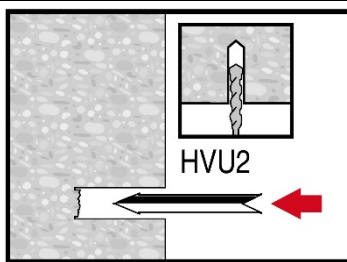
for all drill hole diameters d_0 and all drill hole depths h_0 .



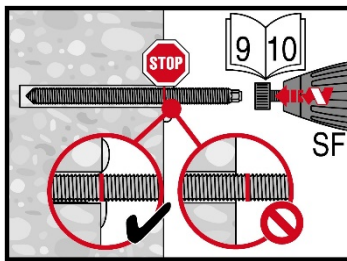
Setting the element



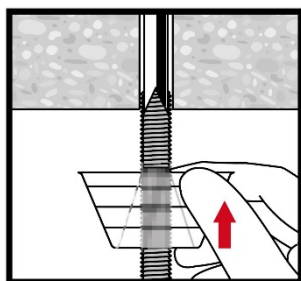
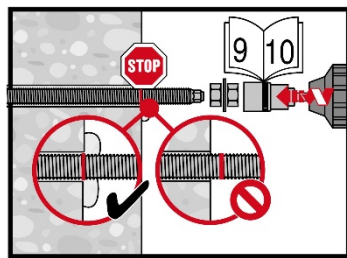
Check setting depth.



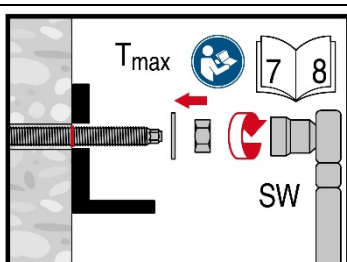
Insert the foil capsule with the peak ahead to the back of the hole.



Drive the anchor rod with the plugged tool into the hole.



Overhead installation
For HVU2 M8 to M24.



Loading the anchor after required curing time t_{cure} .

Attn. : To whom it may concern

Date : 26 September 2023
Ref. : 133/AM/DY/23

Subject : Country of Origin- Hilti HVU2 Anchor Capsule

Dear Sir / Madam,

Enclosed please find the information of Hilti HVU2 Anchor Capsule.

Brand Name : Hilti

Model Name : Hilti HVU2 Anchor Capsule

Manufacturer : Hilti Corporation

Address of Manufacturer : FL-9494, Principality of Liechtenstein.

Manufacturer Contact Person : Dennis Yeung

Supplier : Hilti (Hong Kong) Ltd

Address of Supplier : 701-704, 7/F, Tower A, Manulife Financial Centre,
223 Wai Yip Street, Kwun Tong, Kowloon, Hong Kong

Supplier Contact Person : Dennis Yeung (+852 9723 4621)

Country of Origin : Germany

Should you have further questions, please do not hesitate to contact our Technical Representatives, Customer Service Hotline at 8228-8118, or email us at hksales@hilti.com.

Yours faithfully,



Dennis Yeung
Head of Product Leadership Strategy, F&P

Item number	Model name	Country of Origin
2223936	HAS-U 5.8 M6x75	China
2223704	HAS-U 5.8 M6x105	China
2223852	HAS-U 5.8 M8x80	China
2223853	HAS-U 5.8 M8x110	China
2223854	HAS-U 5.8 M8x150	China
2223705	HAS-U 5.8 M10x95	China
2223706	HAS-U 5.8 M10x115	China
2223707	HAS-U 5.8 M10x130	China
2223709	HAS-U 5.8 M10x170	China
2223820	HAS-U 5.8 M10x190	China
2223821	HAS-U 5.8 M12x110	China
2223822	HAS-U 5.8 M12x120	China
2223823	HAS-U 5.8 M12x160	China
2223825	HAS-U 5.8 M12x180	China
2223826	HAS-U 5.8 M12x200	China
2223827	HAS-U 5.8 M12x220	China
2223867	HAS-U 5.8 M12x260	China
2223868	HAS-U 5.8 M12x300	China
2223828	HAS-U 5.8 M16x150	China
2223829	HAS-U 5.8 M16x165	China
2223830	HAS-U 5.8 M16x190	China
2223869	HAS-U 5.8 M16x220	China
2223832	HAS-U 5.8 M16x260	China
2223870	HAS-U 5.8 M16x300	China
2223871	HAS-U 5.8 M16x350	China
2223872	HAS-U 5.8 M16x500	China
2223873	HAS-U 5.8 M20x180	China
2223874	HAS-U 5.8 M20x240	China
2223876	HAS-U 5.8 M20x260	China
2223877	HAS-U 5.8 M20x300	China
2223878	HAS-U 5.8 M20x350	China
2223879	HAS-U 5.8 M20x400	China
2223880	HAS-U 5.8 M20x480	China
2223881	HAS-U 5.8 M24x300	China
2223882	HAS-U 5.8 M24x450	China
2223856	HAS-U 5.8 HDG M8x80	China
2223857	HAS-U 5.8 HDG M8x110	China
2223858	HAS-U 5.8 HDG M8x150	China
2223859	HAS-U 5.8 HDG M10x95	China
2223860	HAS-U 5.8 HDG M10x115	China
2223861	HAS-U 5.8 HDG M10x130	China
2223862	HAS-U 5.8 HDG M10x170	China
2223863	HAS-U 5.8 HDG M10x190	China
2223937	HAS-U 5.8 HDG M12x110	China
2223938	HAS-U 5.8 HDG M12x120	China
2223939	HAS-U 5.8 HDG M12x160	China
2223940	HAS-U 5.8 HDG M12x180	China

2223941	HAS-U 5.8 HDG M12x200	China
2223942	HAS-U 5.8 HDG M12x220	China
2223895	HAS-U 5.8 HDG M12x260	China
2223896	HAS-U 5.8 HDG M12x300	China
2223943	HAS-U 5.8 HDG M16x150	China
2223944	HAS-U 5.8 HDG M16x165	China
2223945	HAS-U 5.8 HDG M16x190	China
2223946	HAS-U 5.8 HDG M16x220	China
2223897	HAS-U 5.8 HDG M16x260	China
2223898	HAS-U 5.8 HDG M16x300	China
2223899	HAS-U 5.8 HDG M16x350	China
2223900	HAS-U 5.8 HDG M16x500	China
2223901	HAS-U 5.8 HDG M20x180	China
2223902	HAS-U 5.8 HDG M20x240	China
2223903	HAS-U 5.8 HDG M20x260	China
2223904	HAS-U 5.8 HDG M20x300	China
2223905	HAS-U 5.8 HDG M20x350	China
2223906	HAS-U 5.8 HDG M20x400	China
2223907	HAS-U 5.8 HDG M20x480	China
2223908	HAS-U 5.8 HDG M24x300	China
2223909	HAS-U 5.8 HDG M24x450	China
2223855	HAS-U 8.8 M8x150	China
2223833	HAS-U 8.8 M10x190	China
2223834	HAS-U 8.8 M12x220	China
2223883	HAS-U 8.8 M12x300	China
2223835	HAS-U 8.8 M16x190	China
2223884	HAS-U 8.8 M16x300	China
2223885	HAS-U 8.8 M16x380	China
2223886	HAS-U 8.8 M20x180	China
2223887	HAS-U 8.8 M20x260	China
2223888	HAS-U 8.8 M20x400	China
2223889	HAS-U 8.8 M24x300	China
2223890	HAS-U 8.8 M27x340	China
2223891	HAS-U 8.8 M30x380	China
2223892	HAS-U 8.8 M33x420	China
2223893	HAS-U 8.8 M36x460	China
2223894	HAS-U 8.8 M39x510	China
2223947	HAS-U 8.8 HDG M8x150	China
2223948	HAS-U 8.8 HDG M10x190	China
2223949	HAS-U 8.8 HDG M12x220	China
2223910	HAS-U 8.8 HDG M12x300	China
2223703	HAS-U 8.8 HDG M16x190	China
2223911	HAS-U 8.8 HDG M16x300	China
2223912	HAS-U 8.8 HDG M16x380	China
2223913	HAS-U 8.8 HDG M20x180	China
2223914	HAS-U 8.8 HDG M20x260	China
2223915	HAS-U 8.8 HDG M20x400	China
2223916	HAS-U 8.8 HDG M24x300	China
2223917	HAS-U 8.8 HDG M27x340	China

2223918	HAS-U 8.8 HDG M30x380	China
2223864	HAS-U A4 M8x80	China
2223865	HAS-U A4 M8x110	China
2223866	HAS-U A4 M8x150	China
2223836	HAS-U A4 M10x95	China
2223837	HAS-U A4 M10x115	China
2223838	HAS-U A4 M10x130	China
2223839	HAS-U A4 M10x170	China
2223840	HAS-U A4 M10x190	China
2223841	HAS-U A4 M10x220	China
2223842	HAS-U A4 M12x110	China
2223843	HAS-U A4 M12x120	China
2223844	HAS-U A4 M12x160	China
2223845	HAS-U A4 M12x180	China
2223846	HAS-U A4 M12x200	China
2223847	HAS-U A4 M12x220	China
2223919	HAS-U A4 M12x260	China
2223920	HAS-U A4 M12x300	China
2223848	HAS-U A4 M16x150	China
2223849	HAS-U A4 M16x165	China
2223850	HAS-U A4 M16x190	China
2223851	HAS-U A4 M16x220	China
2223921	HAS-U A4 M16x260	Denmark
2223922	HAS-U A4 M16x300	China
2223923	HAS-U A4 M16x350	China
2223924	HAS-U A4 M16x380	China
2223925	HAS-U A4 M20x180	China
2223926	HAS-U A4 M20x240	China
2223927	HAS-U A4 M20x260	China
2223928	HAS-U A4 M20x300	China
2223929	HAS-U A4 M20x350	China
2223930	HAS-U A4 M20x400	China
2223931	HAS-U A4 M20x480	China
2223932	HAS-U A4 M24x300	China
2223933	HAS-U A4 M24x450	China
2223934	HAS-U A4 M27x340	China
2223935	HAS-U A4 M30x380	China
258015	HIS-N M8x90	China
258016	HIS-N M10x110	China
258017	HIS-N M12x125	China
258018	HIS-N M16x170	China
258019	HIS-N M20x205	China
258024	HIS-RN M8x90 A4	China
258025	HIS-RN M10x110 A4	China
258026	HIS-RN M12x125 A4	China
258027	HIS-RN M16x170 A4	China
258028	HIS-RN M20x205 A4	China
2018364	HIT-Z M8x80	Liechtenstein
2018365	HIT-Z M8x100	Liechtenstein

2018366	HIT-Z M8x120	Liechtenstein
2018367	HIT-Z M10x95	Liechtenstein
2018369	HIT-Z M10x135	Liechtenstein
2018410	HIT-Z M10x160	Liechtenstein
2018411	HIT-Z M12x105	Liechtenstein
2018412	HIT-Z M12x140	Liechtenstein
2018413	HIT-Z M12x155	Liechtenstein
2018415	HIT-Z M12x196	Liechtenstein
2018416	HIT-Z M16x155	Liechtenstein
2018418	HIT-Z M16x205	Liechtenstein
2018419	HIT-Z M16x240	Liechtenstein
2018420	HIT-Z M20x215	Liechtenstein
2018421	HIT-Z M20x250	Liechtenstein
2018422	HIT-Z-R M8x80	Liechtenstein
2018423	HIT-Z-R M8x100	Liechtenstein
2018424	HIT-Z-R M8x120	Liechtenstein
2018425	HIT-Z-R M10x95	Liechtenstein
2018426	HIT-Z-R M10x115	Liechtenstein
2018427	HIT-Z-R M10x135	Liechtenstein
2018428	HIT-Z-R M10x160	Liechtenstein
2018429	HIT-Z-R M12x105	Liechtenstein
2018430	HIT-Z-R M12x140	Liechtenstein
2018431	HIT-Z-R M12x155	Liechtenstein
2018433	HIT-Z-R M12x196	Liechtenstein
2018434	HIT-Z-R M16x155	Liechtenstein
2018435	HIT-Z-R M16x175	Liechtenstein
2018436	HIT-Z-R M16x205	Liechtenstein
2018437	HIT-Z-R M16x240	Liechtenstein
2018438	HIT-Z-R M20x215	Liechtenstein
2018439	HIT-Z-R M20x250	Liechtenstein

Attn. : To whom it may concern

Date : 18 October 2023
Ref. : 162/AN/RV/23

Subject : Country of Origin - Hilti Meter Rod Portfolio

Dear Sir / Madam,

Enclosed please find the information of Hilti meter rod portfolio.

Brand Name : Hilti

Manufacturer : Hilti Corporation

Address of Manufacturer : FL-9494, Principality of Liechtenstein.

Manufacturer Contact Person : Dennis Yeung

Supplier : Hilti (Hong Kong) Ltd

Address of Supplier : 701-704, 7/F, Tower A, Manulife Financial Centre,
223 Wai Yip Street, Kwun Tong, Kowloon, Hong Kong

Supplier Contact Person : Dennis Yeung (+852 9723 4621)

Country of Origin : *(Attached)*

Should you have further questions, please do not hesitate to contact our Technical Representatives, Customer Service Hotline at 8228-8118, or email us at hksales@hilti.com.

Yours faithfully,



Dennis Yeung
Head of Product Leadership Strategy, F&P

Hilti (Hong Kong) Ltd.
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223 Wai Yip Street | Kwun Tong
Kowloon | Hong Kong
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www.hilti.com.hk

Item number	Model name	Country of Origin
2184473	Hexagon nut M8 DIN 934 A4-70	Malaysia
2184474	Hexagon nut M10 DIN 934 A4-70	Philippines
2184475	Hexagon nut M12 DIN 934 A4-70	Malaysia
2184476	Hexagon nut M16 DIN 934 A4-70	China
2184536	Hexagon nut M20 DIN 934 A4-70	Malaysia
387993	Hexagon nut M24 A4-70	India
2184478	Flat washer 8 8,4x16x1,6 ISO 7089 A4 200	China
2184477	Flat washer 10 10,5x20x2 ISO 7089 A4 200	China
2184549	Flat washer 12 13x24x2,5 ISO 7089 A4 200	China
2184535	Flat washer 16 17x30x3 ISO 7089 A4 200 H	India
387990	Flat washer A 21/37 A4	India
387991	Flat washer A 25/44 A4	China
58666	Threaded rod AM8x1000 A4-70	Italy
58670	Threaded rod AM10x1000 A4-70	Italy
58671	Threaded rod AM12x1000 A4-70	Italy
58683	Threaded rod AM16x1000 A4-70	Italy
58688	Threaded rod AM20x1000 A4-70	Italy
58689	Threaded rod AM24x1000 A4-70	Italy
2184525	Hexagon nut M10-F DIN 934 8	China
2184526	Hexagon nut M12-F DIN 934 8	China
2184527	Hexagon nut M16-F DIN 934 8	China
2184528	Hexagon nut M20-F DIN 934 8	China
2008236	Hexagon nut M24-F	China
2008237	Hexagon nut M27-F	China
2008238	Hexagon nut M30-F	Germany
2008239	Hexagon nut M33-F	China
2008290	Hexagon nut M36-F	China
2184530	Flat washer 10 10,5x20x2-F ISO 7089 200	Germany
2184531	Flat washer 12 13x24x2,5-F ISO 7089 200	China
2184532	Flat washer 16 17x30x3-F ISO 7089 200 HV	Germany
2008399	Flat washer A 21/37-F	Germany
2008287	Flat washer A 25/44-F	Germany
2008288	Flat washer A 28/50-F	Germany
2008289	Flat washer A 31/56-F	Germany
2008360	Flat washer A 34/60-F	Germany
419102	Threaded rod AM 8.8 M10x1000 HDG	China
419103	Threaded rod AM 8.8 M12x1000 HDG	China
419104	Threaded rod AM 8.8 M16x1000 HDG	China
2232592	Threaded rod M20x1000 8.8 HDG	China
2232593	Threaded rod M24x1000 8.8 HDG	China
2008338	Threaded rod AM 8.8 M27x1000 HDG	China
2008339	Threaded rod AM 8.8 M30x1000 HDG	China
2008340	Threaded rod AM 8.8 M33x1000 HDG	China
2008341	Threaded rod AM 8.8 M36x1000 HDG	China
2184504	Hexagon nut M8 Zn DIN 934 8	Taiwan
2184505	Hexagon nut M10 Zn DIN 934 8	Taiwan
2184554	Hexagon nut M12 Zn DIN 934 8	China

2184506	Hexagon nut M16 Zn DIN 934 8	China
2184507	Hexagon nut M20 Zn DIN 934 8	China
2184508	Hexagon nut M24 Zn DIN 934 8	Malaysia
362307	Hexagon nut M27 zincd	China
362309	Hexagon nut M30 zincd	Germany
362134	Hexagon nut M33 zincd	Germany
362135	Hexagon nut M36 zincd	China
362136	Hexagon nut M39 zincd	Germany
2184556	Flat washer 8 8,4x16x1,6 Zn ISO7089 200H	Germany
2184511	Flat washer 10 10,5x20x2 Zn ISO7089 200H	Germany
2184512	Flat washer 12 13x24x2,5 Zn ISO7089 200H	Germany
2184513	Flat washer 16 17x30x3 Zn ISO7089 200HV	Germany
2184514	Flat washer 20 21x37x3 Zn ISO7089 200HV	Germany
2184515	Flat washer 24 25x44x4 Zn ISO7089 200HV	Germany
2008282	Flat washer A 28/50 zincd	Germany
2008283	Flat washer A 31/56 zincd	China
2048043	Flat washer A 34/60 zincd	Germany
2048044	Flat washer A 37/66 zincd	China
2008286	Flat washer A 42/72 zincd	Germany
407496	Threaded rod AM 8.8 M8x1000 zincd	China
407497	Threaded rod AM 8.8 M10x1000 zincd	China
407498	Threaded rod AM 8.8 M12x1000 zincd	China
407499	Threaded rod AM 8.8 M16x1000 zincd	China
407500	Threaded rod AM 8.8 M20x1000 zincd	China
407501	Threaded rod AM 8.8 M24x1000 zincd	China
2008138	Threaded rod AM 8.8 M27x1000 zincd	China
2008139	Threaded rod AM 8.8 M30x1000 zincd	China
2008330	Threaded rod AM 8.8 M33x1000 zincd	China
2008331	Threaded rod AM 8.8 M36x1000 zincd	China
2008332	Threaded rod AM 8.8 M39x1000 zincd	China



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D July 8, 2019

Confirmation of performance equivalence for replacing HILTI HAS(-E) anchor rod with HILTI HAS-U

To whom it may concern,

Hilti has launched HAS-U anchor rods to replace both HAS and HAS-E to better serve the customer needs and simplify the product portfolio. HAS-U anchor rod was tested according to European Assessment Document: EAD 330499 to take ETA approval and fully complies with the ISO 898 standard.

HAS-U includes the chiseling tip like HAS (-E) rods which makes it suitable for Hilti HVU2 capsule anchor system.

HAS-U has hex head (like HAS rod) is designed to provide an easy installation to the user. Hex head should not be included in the anchor length therefore it is strongly recommended to take only threaded part into consideration.

HAS-U shows the same performance with HAS (-E) for post-installed anchor applications in concrete as long as same embedment depth and same anchor plate width remains. **HAS-U's embedment depth must comply with design specification parameters.**

HAS-U has the same steel strength with the other anchor rods based on 5.8 and 8.8 steel grades. HAS-U (-R, -HDG)'s corrosion resistance is the same with HAS(-E) (-R, -HDG)'s.

The installation procedure does not need to be changed with the replacement of HAS-U. ETA document of HAS-U shows the same installation parameters with HAS(-E).

Profis Engineering will be updated with HAS-U and you will be able to perform necessary calculations and explore all the potential applications for the new anchor rod.

In case of questions, please do not hesitate to contact one of our technical experts or sales representatives.

Yours sincerely,


Andrea Copponi

Global Product Manager
BU Anchors, Schaan


Emrecan Turkes

Global Technical Marketing Manager
BU Anchors, Schaan

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Rechtsform: Aktiengesellschaft | Sitz: 9494 Schaan
HR-Nr.: FL-1.011.557-0 | MWST-Nr.: 50 555

HVU2 M8 - M30

Safety Data Sheet

according to the United Nations GHS (Rev. 4, 2011)

Date of issue: 15/01/2019

Version: 1.1

Revision date: 15/01/2019

Supersedes: 15/06/2018

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form	Mixture
Generic name	HVU2 M8 - M30
Product code	BU Anchor

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture	Adhesive anchor capsule for anchor fastening in concrete
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1.3. Details of the supplier of the safety data sheet

Supplier

Hilti (Hong Kong) Ltd.
701-704, 7/F, Tower A, Manulife Financial Centre
223 Wai Yip Street, Kwun Tong
Kowloon - Hong Kong
T +852 27734 700
hksales@hilti.com

Department issuing data specification sheet

Hilti Entwicklungsgesellschaft mbH
Hiltistraße 6
86916 Kaufering - Deutschland
T +49 8191 906310 - F +49 8191 90176310
anchor.hse@hilti.com

1.4. Emergency telephone number

Emergency number	Schweizerisches Toxikologisches Informationszentrum – 24h Service +41 44 251 51 51 (international) +852 27734 700
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SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to the United Nations GHS (Rev. 4, 2011)

Org. Perox.	Not classified
Skin Sens.	1
Repr.	1B
Aquatic Acute	2
Aquatic Chronic	2
Full text of H statements	: see section 16
	H317
	H360
	H401
	H411

2.2. Label elements

Labelling according to the United Nations GHS (Rev. 4, 2011)

Hazard pictograms (GHS UN)



GHS07

GHS08

GHS09

Signal word (GHS UN)

Danger

Hazardous ingredients

dibenzoyl peroxide; dicyclohexyl phthalate; 2-Propenoic acid, 2-methyl-, monoester with 1,2-propanediol; 2-Propenoic acid, 2-methyl-, 1,4-butanediyl ester

Hazard statements (GHS UN)

H317 - May cause an allergic skin reaction.
H360 - May damage the unborn child..
H411 - Toxic to aquatic life with long lasting effects.

Precautionary statements (GHS UN)

P280 - Wear eye protection, protective clothing, protective gloves.
P262 - Do not get in eyes, on skin, or on clothing.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P333+P313 - If skin irritation or rash occurs: Get medical advice, medical attention.

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P337+P313 - If eye irritation persists: Get medical advice, medical attention.
P302+P352 - IF ON SKIN: Wash with plenty of water.

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	Classification according to the United Nations GHS
2-Propenoic acid, 2-methyl-, monoester with 1,2-propanediol	(CAS-No.) 27813-02-1	5 - 10	Flammable liquids Not classified Acute toxicity (oral) Not classified Serious eye damage/eye irritation, Category 2A, H319 Skin sensitisation, Category 1, H317 Hazardous to the aquatic environment - Acute Hazard Not classified Hazardous to the aquatic environment - Chronic Hazard Not classified
2-Propenoic acid, 2-methyl-, 1,4-butanediyl ester	(CAS-No.) 2082-81-7	2.5 - 5	Acute toxicity (oral) Not classified Skin sensitisation, category 1B, H317 Hazardous to the aquatic environment — Acute Hazard, Category 3, H402 Hazardous to the aquatic environment — Chronic Hazard, Category 3, H412
dibenzoyl peroxide	(CAS-No.) 94-36-0	1 - 2.5	Organic Peroxides, Type B, H241 Serious eye damage/eye irritation, Category 2A, H319 Skin sensitisation, Category 1, H317 Hazardous to the aquatic environment — Acute Hazard, Category 1, H400 (M=10) Hazardous to the aquatic environment — Chronic Hazard, Category 1, H410 (M=10)
dicyclohexyl phthalate	(CAS-No.) 84-61-7	1 - 2.5	Acute toxicity (oral) Not classified Acute toxicity (dermal) Not classified Skin sensitisation, Category 1, H317 Reproductive toxicity, Category 1B, H360 Hazardous to the aquatic environment - Acute Hazard Not classified Hazardous to the aquatic environment — Chronic Hazard, Category 3, H412
1,1'-(p-tolylimino)dipropan-2-ol	(CAS-No.) 38668-48-3	0.1 - 1	Acute toxicity (oral), Category 2, H300 Serious eye damage/eye irritation, Category 2A, H319 Hazardous to the aquatic environment — Acute Hazard, Category 3, H402 Hazardous to the aquatic environment — Chronic Hazard, Category 3, H412

Full text of H-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general

Take off immediately all contaminated clothing. Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

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according to the United Nations GHS (Rev. 4, 2011)

First-aid measures after inhalation	Remove person to fresh air and keep comfortable for breathing. Assure fresh air breathing. Allow the victim to rest.
First-aid measures after skin contact	Wash contaminated clothing before reuse. Wash with plenty of water/.... If skin irritation or rash occurs: Get medical advice/attention.
First-aid measures after eye contact	Rinse immediately with plenty of water. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention if pain, blinking or redness persists.
First-aid measures after ingestion	Rinse mouth. Drink plenty of water. Get medical advice/attention. Do not induce vomiting. Obtain emergency medical attention.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects after skin contact	May cause an allergic skin reaction.
Symptoms/effects after eye contact	May cause severe irritation.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	Water spray. Carbon dioxide. Dry powder. Foam. Sand.
Unsuitable extinguishing media	Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

No additional information available

5.3. Advice for firefighters

Firefighting instructions	Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire fighting water from entering the environment.
Protection during firefighting	Self-contained breathing apparatus. Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures	Spilled material may present a slipping hazard.
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6.1.1. For non-emergency personnel

Emergency procedures	Evacuate unnecessary personnel.
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6.1.2. For emergency responders

Protective equipment	Use personal protective equipment as required. Equip cleanup crew with proper protection.
Emergency procedures	Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

For containment	Collect spillage.
Methods for cleaning up	This material and its container must be disposed of in a safe way, and as per local legislation. Mechanically recover the product. Store away from other materials.
Other information	Dispose of materials or solid residues at an authorized site.

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according to the United Nations GHS (Rev. 4, 2011)

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling

Wear personal protective equipment. Avoid contact with skin and eyes. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapour.

Hygiene measures

Do not eat, drink or smoke when using this product. Always wash hands after handling the product. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions

Keep cool. Protect from sunlight. Expiry date: See date printed on box and capsule. Do not use if expiry date has been exceeded!

Incompatible products

Strong bases. Strong acids.

Incompatible materials

Sources of ignition. Direct sunlight.

Storage temperature

-20 - 25 °C

Heat and ignition sources

Keep away from heat and direct sunlight.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Appropriate engineering controls

Environmental exposure controls

Avoid release to the environment.

Consumer exposure controls

Avoid contact during pregnancy/while nursing.

Other information

Do not eat, drink or smoke during use.

8.3. Individual protection measures, such as personal protective equipment (PPE)

Hand protection

Wear protective gloves. The permeation time is not the maximum wearing time! Generally speaking, it must be reduced. Contact with either mixtures of substances or different substances may shorten the protective function's effective duration.

Type	Material	Permeation	Thickness (mm)	Penetration	Standard
Disposable gloves	Nitrile rubber (NBR)	6 (> 480 minutes)	0,12		EN 374

Eye protection

Wear security glasses which protect from splashes

Type	Use	Characteristics	Standard
Safety glasses	Droplet	clear	EN 166, EN 170

Skin and body protection

Wear suitable protective clothing



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according to the United Nations GHS (Rev. 4, 2011)

8.4. Exposure limit values for the other components

No additional information available

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Solid
Appearance	foil capsule.
Colour	resin: yellowish liquid hardener: white powder.
Odour	characteristic.
Odour threshold	No data available
pH	No data available
Relative evaporation rate (butylacetate=1)	No data available
Melting point	No data available
Freezing point	No data available
Boiling point	No data available
Flash point	> 101 °C (DIN EN ISO 1523)
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Flammability (solid, gas)	No data available
Vapour pressure	0.1 hPa
Relative vapour density at 20 °C	No data available
Relative density	No data available
Density	2.95 g/cm ³
Solubility	insoluble in water.
Log Pow	No data available
Viscosity, kinematic	20 Seconds (ISO 2431)
Viscosity, dynamic	No data available
Explosive properties	No data available
Oxidising properties	No data available
Explosive limits	No data available

9.2. Other information

SADT	55 °C (Peroxide)
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SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No additional information available.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

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according to the United Nations GHS (Rev. 4, 2011)

10.5. Incompatible materials

Strong acids. Strong bases.

10.6. Hazardous decomposition products

fume. Carbon monoxide. Carbon dioxide. Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	Not classified
Acute toxicity (dermal)	Not classified
Acute toxicity (inhalation)	Not classified

dicyclohexyl phthalate (84-61-7)	
LD50 oral rat	41400 mg/kg (Rat)
LD50 dermal rabbit	> 7940 mg/kg (Rabbit)

2-Propenoic acid, 2-methyl-, monoester with 1,2-propanediol (27813-02-1)	
LD50 oral rat	> 5000 mg/kg (Rat; OECD 401: Acute Oral Toxicity; Literature study; >=2000 mg/kg bodyweight; Rat; Experimental value)
LD50 dermal rabbit	>= 5000 mg/kg bodyweight (Rabbit; Experimental value)

2-Propenoic acid, 2-methyl-, 1,4-butanediyl ester (2082-81-7)	
LD50 oral rat	10066 mg/kg
LD50 dermal rat	> 3000 mg/kg

1,1'-(p-tolylimino)dipropan-2-ol (38668-48-3)	
LD50 oral rat	25 mg/kg
LD50 dermal rat	> 2000 mg/kg

Skin corrosion/irritation	Not classified
Serious eye damage/irritation	Not classified
Respiratory or skin sensitisation	May cause an allergic skin reaction.
Germ cell mutagenicity	Not classified
Carcinogenicity	Not classified
Reproductive toxicity	May damage the unborn child..
STOT-single exposure	Not classified
STOT-repeated exposure	Not classified
Aspiration hazard	Not classified

SECTION 12: Ecological information

12.1. Toxicity

Acute aquatic toxicity	Toxic to aquatic life.
Classification procedure (Acute aquatic toxicity)	Calculation method
Chronic aquatic toxicity	Toxic to aquatic life with long lasting effects.
Classification procedure (Chronic aquatic toxicity)	Calculation method

dibenzoyl peroxide (94-36-0)	
EC50 Daphnia 1	0.11 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Static system, Fresh water, Experimental value)
LC50 fish 2	0.0602 mg/l (96h; Oncorhynchus mykiss; ECHA)
NOEC (acute)	0.0316 mg/l (96h; Oncorhynchus mykiss; ECHA)
NOEC chronic fish	< 0.001

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according to the United Nations GHS (Rev. 4, 2011)

dicyclohexyl phthalate (84-61-7)	
LC50 fish 1	> 10000 mg/l (96 h; Brachydanio rerio; Static system)
LC50 other aquatic organisms 1	1.04 mg/l
NOEC (acute)	> 2 mg/l
NOEC chronic crustacea	0.181 mg/l
2-Propenoic acid, 2-methyl-, monoester with 1,2-propanediol (27813-02-1)	
LC50 fish 1	493 mg/l (48 h; Leuciscus idus; GLP)
EC50 Daphnia 1	> 143 mg/l (48 h; Daphnia magna; GLP)
Threshold limit algae 1	> 97.2 mg/l (72 h; Pseudokirchneriella subcapitata; GLP)
Threshold limit algae 2	> 97.2 mg/l (72 h; Pseudokirchneriella subcapitata; GLP)
2-Propenoic acid, 2-methyl-, 1,4-butanediyl ester (2082-81-7)	
LC50 fish 1	32.5 mg/l
LC50 other aquatic organisms 1	9.79 mg/l
NOEC (acute)	7.51 mg/l
NOEC (chronic)	20 mg/l
1,1'-(p-tolylimino)dipropan-2-ol (38668-48-3)	
LC50 fish 1	≈ 17 mg/l
LC50 other aquatic organisms 1	245 mg/l
EC50 Daphnia 1	28.8 mg/l
NOEC (acute)	57.8 mg/l

12.2. Persistence and degradability

dibenzoyl peroxide (94-36-0)	
Persistence and degradability	Readily biodegradable in water. Not established. May cause long-term adverse effects in the environment.
dicyclohexyl phthalate (84-61-7)	
Persistence and degradability	Readily biodegradable in water. Forming sediments in water.
ThOD	2.376 g O ₂ /g substance
2-Propenoic acid, 2-methyl-, monoester with 1,2-propanediol (27813-02-1)	
Persistence and degradability	Readily biodegradable in water.
2-Propenoic acid, 2-methyl-, 1,4-butanediyl ester (2082-81-7)	
Biodegradation	84 %

12.3. Bioaccumulative potential

dibenzoyl peroxide (94-36-0)	
Log Pow	3.71
Bioaccumulative potential	Low bioaccumulation potential (Log Kow < 4).
dicyclohexyl phthalate (84-61-7)	
BCF fish 1	640 (Pisces)
Log Pow	3 - 6.2
Bioaccumulative potential	High potential for bioaccumulation (Log Kow > 5).
2-Propenoic acid, 2-methyl-, monoester with 1,2-propanediol (27813-02-1)	
BCF fish 1	≤ 100
BCF fish 2	3.2 Quantitative structure-activity relationship (QSAR)
Log Pow	0.97 (OECD 102 method)
Bioaccumulative potential	Low bioaccumulation potential (BCF < 500).
2-Propenoic acid, 2-methyl-, 1,4-butanediyl ester (2082-81-7)	
Log Pow	3.1
1,1'-(p-tolylimino)dipropan-2-ol (38668-48-3)	
BCF fish 1	≈
Log Kow	2.1

12.4. Mobility in soil

dibenzoyl peroxide (94-36-0)	
Log Pow	See section 12.1 on ecotoxicology
Log Koc	See section 12.1 on ecotoxicology
Ecology - soil	Adsorbs into the soil.

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according to the United Nations GHS (Rev. 4, 2011)

dicyclohexyl phthalate (84-61-7)	
Log Pow	See section 12.1 on ecotoxicology
2-Propenoic acid, 2-methyl-, monoester with 1,2-propanediol (27813-02-1)	
Log Pow	See section 12.1 on ecotoxicology
Ecology - soil	Low potential for adsorption in soil.
2-Propenoic acid, 2-methyl-, 1,4-butanediyl ester (2082-81-7)	
Log Pow	See section 12.1 on ecotoxicology
1,1'-(p-tolylimino)dipropan-2-ol (38668-48-3)	
Log Kow	See section 12.1 on ecotoxicology

12.5. Other adverse effects

Ozone	Not classified
Other adverse effects	No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Regional legislation (waste)	Disposal must be done according to official regulations.
Product/Packaging disposal recommendations	After curing, the product can be disposed of with household waste. . Full or only partially emptied cartridges must be disposed of as special waste in accordance with official regulations. Packaging contaminated by the product : Dispose in a safe manner in accordance with local/national regulations.
Ecology - waste materials	Avoid release to the environment.

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

ADR	IMDG	IATA	RID
14.1. UN number			
Not regulated	Not regulated	Not regulated	Not regulated
14.2. UN proper shipping name			
Not regulated	Not regulated	Not regulated	Not regulated
14.3. Transport hazard class(es)			
Not regulated	Not regulated	Not regulated	Not regulated
14.4. Packing group			
Not regulated	Not regulated	Not regulated	Not regulated
14.5. Environmental hazards			
Not regulated	Not regulated	Not regulated	Not regulated
Environmentally hazardous substances derogation applies (quantity of liquids ≤ 5 litres or net mass of solids ≤ 5 kg)			
No supplementary information available			

14.6. Special precautions for user

- Overland transport

- Transport by sea

No data available

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according to the United Nations GHS (Rev. 4, 2011)

- Air transport

No data available

- Rail transport

Carriage prohibited (RID) No

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

No additional information available

SECTION 16: Other information

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Indication of changes:

Section	Changed item	Change	Comments
2.1	Classification (GHS UN)	Modified	
2.2	Hazard pictograms (GHS UN)	Added	
2.2	Hazard statements (GHS UN)	Modified	
3	Composition/information on ingredients	Modified	
7.2	Storage temperature	Modified	

Other information None.

Full text of H-statements:

H241	Heating may cause a fire or explosion.
H300	Fatal if swallowed.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H360	May damage fertility or the unborn child.
H400	Very toxic to aquatic life.
H401	Toxic to aquatic life
H402	Harmful to aquatic life
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

SDS_UN_Hilti

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product

