ENVIRONMENTAL PRODUCT DECLARATION

as per *ISO 14025* and *EN 15804+A2*

Owner of the Declaration	Hilti Aktiengesellschaft
Publisher	Institut Bauen und Umwelt e.V. (IBU)
Programme holder	Institut Bauen und Umwelt e.V. (IBU)
Declaration number	EPD-HIL-20250281-CBN1-EN
Issue date	10.09.2025
Valid to	09.09.2030

HAS-U 5.8, HAS-U 8.8, HAS-U 5.8 (HDG), HAS-U 8.8 (HDG), HAS-U meter

Hilti AG

Institut Bauen und Umwelt e.V.

ECO PLATFORM EPD VERIFIED

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General Information

Hilti AG

Programme holder

IBU – Institut Bauen und Umwelt e.V.
Hegelplatz 1
10117 Berlin
Germany

Declaration number

EPD-HIL-20250281-CBN1-EN

This declaration is based on the product category rules:

Screws, 01.06.2023
(PCR checked and approved by the SVR)

Issue date

10.09.2025

Valid to

09.09.2030

Dipl.-Ing. Hans Peters
(Chairman of Institut Bauen und Umwelt e.V.)

Florian Pronold
(Managing Director Institut Bauen und Umwelt e.V.)

HAS-U 5.8, HAS-U 8.8, HAS-U 5.8 (HDG), HAS-U 8.8 (HDG), HAS-U meter

Owner of the declaration

Hilti Aktiengesellschaft
Feldkircher Strasse 100
9494 Schaan
Liechtenstein

Declared product / declared unit

HAS-U 8.8 (carbon steel) / 1 kg product + packaging

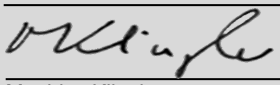
Scope:

This document refers to the anchor rod HAS-U 8.8 M12x220, a representative product from the HAS-U portfolio. The HAS-U 8.8 M12x220 anchor rod was selected as a representative product because it is the best-selling product in the portfolio. Specific data from the HILTI AG production plant in Zhanjiang was collected for the preparation of the LCA. The input and output flows used in this calculation were collected as an annual average consumption for the year 2023. The procedure for assigning the data to the declared unit is described in the Assignment section. The owner of the declaration is responsible for the underlying information and evidence; the IBU accepts no liability for manufacturer information, LCA data and evidence.
The owner of the declaration shall be liable for the underlying information and evidence; the IBU shall not be liable with respect to manufacturer information, life cycle assessment data and evidences.

The EPD was created according to the specifications of EN 15804+A2. In the following, the standard will be simplified as *EN 15804*.

Verification

The standard EN 15804 serves as the core PCR
Independent verification of the declaration and data according to ISO 14025:2011
☐ internally ☒ externally



Matthias Klingler,
(Independent verifier)

Product

Product description/Product definition

HAS-U is a threaded rod used for anchoring applications to resist static and seismic structural loads in the construction industry. This rod has a chisel tip and can be used together with the Hilti Anchor capsule products. The HAS-U rod is used together with Hilti injection mortars or capsules. The carbon steel variant of the HAS-U family is described further in this report.

IT-Number	Product name	Weight total [kg]	Material	Weight rod [kg]	Weight nut [kg]	Weight washer [kg]
2223834	Anchor rod HAS-U 8.8 M12x220	0,20457	8.8			
2223704	Anchor rod HAS-U 5.8 M6x105	0,02670	5.8	0,0231	0,0026	0,0010
2223705	Anchor rod HAS-U 5.8 M10x95	0,06791	5.8	0,0537	0,0107	0,0035
2223706	Anchor rod HAS-U 5.8 M10x115	0,07921	5.8	0,0650	0,0107	0,0035
2223707	Anchor rod HAS-U 5.8 M10x130	0,08768	5.8	0,0735	0,0107	0,0035
2223708	HAS-U 5.8 M10x130 BULK	0,08768	5.8	0,0961	0,0107	0,0035
2223709	Anchor rod HAS-U 5.8 M10x170	0,11028	5.8	0,0735	0,0107	0,0035
2223820	Anchor rod HAS-U 5.8 M10x190	0,12158	5.8	0,1074	0,0107	0,0035
2223821	Anchor rod HAS-U 5.8 M12x110	0,10154	5.8	0,0798	0,0156	0,0062
2223822	Anchor rod HAS-U 5.8 M12x120	0,12019	5.8	0,0984	0,0156	0,0062
2223823	Anchor rod HAS-U 5.8 M12x160	0,15299	5.8	0,1312	0,0156	0,0062
2223824	Anchor rod HAS-U 5.8 M12x160 BULK	0,15299	5.8	0,1312	0,0156	0,0062
2223825	Anchor rod HAS-U 5.8 M12x180	0,16939	5.8	0,1804	0,0156	0,0062
2223826	Anchor rodHAS-U 5.8 M12x200	0,18579	5.8	0,2190	0,0302	0,0113
2223827	Anchor rod HAS-U 5.8 M12x220	0,20219	5.8	0,1476	0,0156	0,0062
2223828	Anchor rod HAS-U 5.8 M16x150	0,26054	5.8	0,1640	0,0156	0,0062
2223829	Anchor rod HAS-U 5.8 M16x165	0,28244	5.8	0,2409	0,0302	0,0113
2223830	Anchor rod HAS-U 5.8 M16x190	0,31894	5.8	0,2774	0,0302	0,0113
2223831	Anchor rod HAS-U 5.8 M16x190 BULK	0,31894	5.8	0,0284	0,0049	0,0018
2223832	Anchr rod HAS-U 5.8 M16x220	0,36274	5.8	0,0391	0,0049	0,0018
2223852	Anchor rod HAS-U 5.8 M8x80	0,03508	5.8	0,0533	0,0049	0,0018
2223853	Anchor rod HAS-U 5.8 M8x110	0,04573	5.8	0,2774	0,0302	0,0113
2223854	Anchor rod HAS-U 5.8 M8x150	0,05993	5.8	0,3212	0,0302	0,0113
2223856	Anchor rod HAS-U 5.8 HDG M8x80	0,03508	5.8	0,0284	0,0049	0,0018
2223857	Anchor rod HAS-U 5.8 HDG M8x110	0,04573	5.8	0,0391	0,0049	0,0018
2223858	Anchor rod HAS-U 5.8 HDG M8x150	0,05993	5.8	0,0533	0,0049	0,0018
2223859	Anchor rod HAS-U 5.8 HDG M10x95	0,06791	5.8	0,0537	0,0107	0,0035
2223860	Anchor rod HAS-U 5.8 HDG M10x115	0,07921	5.8	0,0650	0,0107	0,0035
2223861	Anchor rod HAS-U 5.8 HDG M10x130	0,08768	5.8	0,0735	0,0107	0,0035
2223862	Anchor rod HAS-U 5.8 HDG M10x170	0,11028	5.8	0,0961	0,0107	0,0035
2223863	Anchor rod HAS-U 5.8 HDG M10x190	0,12158	5.8	0,1074	0,0107	0,0035
2223867	Anchor rod HAS-U 5.8 M12x260	0,24150	5.8	0,2197	0,0156	0,0062
2223868	Anchor rod HAS-U 5.8 M12x300	0,27530	5.8	0,2535	0,0156	0,0062
2223869	Anchor rod HAS-U 5.8 M16x260	0,42120	5.8	0,3796	0,0302	0,0114
2223870	Anchor rod HAS-U 5.8 M16x300	0,47960	5.8	0,4380	0,0302	0,0114
2223871	Anchor rod HAS-U 5.8 M16x350	0,55260	5.8	0,5110	0,0302	0,0114
2223872	Anchor rod HAS-U 5.8 M16x500	0,77160	5.8	0,7300	0,0302	0,0114
2223873	Anchor rod HAS-U 5.8 M20x180	0,50386	5.8	0,4189	0,0679	0,0171
2223874	Anchor rod HAS-U 5.8 M20x240	0,64348	5.8	0,5585	0,0679	0,0171
2223875	Anchor rod HAS-U 5.8 M20x240 BULK	0,64348	5.8	0,5585	0,0679	0,0171
2223876	Anchor rod HAS-U 5.8 M20x260	0,69002	5.8	0,6050	0,0679	0,0171
2223877	Anchor rod HAS-U 5.8 M20x300	0,78310	5.8	0,6981	0,0679	0,0171
2223878	Anchor rod HAS-U 5.8 M20x350	0,89945	5.8	0,8145	0,0679	0,0171
2223879	Anchor rod HAS-U 5.8 M20x400	1,01580	5.8	0,9308	0,0679	0,0171
2223880	Anchor rod HAS-U 5.8 M20x480	1,20196	5.8	1,1170	0,0679	0,0171
2223881	Anchor rod HAS-U 5.8 M24x300	1,17083	5.8	1,0224	0,1161	0,0323
2223882	Anchor rod HAS-U 5.8 M24x450	1,68203	5.8	1,5336	0,1161	0,0323
2223895	Anchor rod HAS-U 5.8 HDG M12x260	0,24150	5.8	0,2197	0,0156	0,0062
2223896	Anchor rod HAS-U 5.8 HDG M12x300	0,27530	5.8	0,2535	0,0156	0,0062
2223897	Anchor rod HAS-U 5.8 HDG M16x260	0,42120	5.8	0,3796	0,0302	0,0114
2223898	Anchor rod HAS-U 5.8 HDG M16x300	0,47960	5.8	0,4380	0,0302	0,0114
2223899	Anchor rod HAS-U 5.8 HDG M16x350	0,55260	5.8	0,5110	0,0302	0,0114
2223900	Anchor rod HAS-U 5.8 HDG M16x500	0,77160	5.8	0,7300	0,0302	0,0114
2223901	Anchor rod HAS-U 5.8 HDG M20x180	0,50386	5.8	0,4189	0,0679	0,0171
2223902	Anchor rod HAS-U 5.8 HDG M20x240	0,64348	5.8	0,5585	0,0679	0,0171
2223903	Anchor rod HAS-U 5.8 HDG M20x260	0,69002	5.8	0,6050	0,0679	0,0171
2223904	Anchor rod HAS-U 5.8 HDG M20x300	0,78310	5.8	0,6981	0,0679	0,0171
2223905	Anchor rod HAS-U 5.8 HDG M20x350	0,89945	5.8	0,8145	0,0679	0,0171
2223906	Anchor rod HAS-U 5.8 HDG M20x400	1,01580	5.8	0,9308	0,0679	0,0171
2223907	Anchor rod HAS-U 5.8 HDG M20x480	1,20196	5.8	1,1170	0,0679	0,0171
2223908	Anchor rod HAS-U 5.8 HDG M24x300	1,17083	5.8	1,0224	0,1161	0,0323
2223909	Anchor rod HAS-U 5.8 HDG M24x450	1,68203	5.8	1,5336	0,1161	0,0323
2223936	Anchor rod HAS-U 5.8 M6x75	0,02010	5.8	0,0165	0,0026	0,0010
2223937	Anchor rod HAS-U 5.8 HDG M12x110	0,11199	5.8	0,0902	0,0156	0,0062
2223938	Anchor rod HAS-U 5.8 HDG M12x120	0,12019	5.8	0,0984	0,0156	0,0062
2223939	Anchor rod HAS-U 5.8 HDG M12x160	0,15299	5.8	0,1312	0,0156	0,0062
2223940	Anchor rod HAS-U 5.8 HDG M12x180	0,16939	5.8	0,1476	0,0156	0,0062
2223941	Anchor rod HAS-U 5.8 HDG M12x200	0,18579	5.8	0,1640	0,0156	0,0062
2223942	Anchor rod HAS-U 5.8 HDG M12x220	0,20219	5.8	0,1804	0,0156	0,0062
2223943	Anchor rod HAS-U 5.8 HDG M16x150	0,26055	5.8	0,2190	0,0303	0,0113
2223944	Anchor rod HAS-U 5.8 HDG M16x165	0,28245	5.8	0,2409	0,0303	0,0113
2223945	Anchor rod HAS-U 5.8 HDG M16x190	0,31895	5.8	0,2774	0,0303	0,0113
2223946	Anchor rod HAS-U 5.8 HDG M16x220	0,36275	5.8	0,3212	0,0303	0,0113
2223703	Anchor rod HAS-U 8.8 HDG M16x190	0,31893	5.8	0,2774	0,0302	0,0113
2223833	Anchor rod HAS-U 8.8 M10x190	0,12348	8.8	0,1093	0,0107	0,0035
2223834	Anchor rod HAS-U 8.8 M12x220	0,20549	8.8	0,1837	0,0156	0,0062
2223835	Anchor rod HAS-U 8.8 M16x190	0,31893	8.8	0,2774	0,0302	0,0113
2223855	Anchor rod HAS-U 8.8 M8x150	0,06070	8.8	0,0533	0,0057	0,0018
2223883	Anchor rod HAS-U 8.8 M12x300	0,27529	8.8	0,2535	0,0156	0,0062
2223884	Anchor rod HAS-U 8.8 M16x300	0,47960	8.8	0,4380	0,0302	0,0114
2223885	Anchor rod HAS-U 8.8 M16x380	0,59640	8.8	0,5548	0,0302	0,0114
2223886	Anchor rod HAS-U 8.8 M20x180	0,50386	8.8	0,4189	0,0679	0,0171
2223887	Anchor rod HAS-U 8.8 M20x260	0,69002	8.8	0,6050	0,0679	0,0171
2223888	Anchor rod HAS-U 8.8 M20x400	1,01580	8.8	0,9308	0,0679	0,0171
2223889	Anchor rod HAS-U 8.8 M24x300	1,17083	8.8	1,0224	0,1161	0,0323
2223890	Anchor rod HAS-U 8.8 M27x340	1,67966	8.8	1,4637	0,1737	0,0423
2223891	Anchor rod HAS-U 8.8 M30x380	2,28620	8.8	2,0216	0,2110	0,0536
2223892	Anchor rod HAS-U 8.8 M33x420	3,14050	8.8	2,7993	0,2659	0,0753
2223893	Anchor rod HAS-U 8.8 M36x460	4,10720	8.8	3,6524	0,3628	0,0920
2223894	Anchor rod HAS-U 8.8 M39x510	5,35546	8.8	4,7573	0,4656	0,1326
2223910	Anchor rod HAS-U 8.8 HDG M12x300	0,27529	8.8	0,2535	0,0156	0,0062
2223911	Anchor rod HAS-U 8.8 HDG M16x300	0,47960	8.8	0,4380	0,0302	0,0114
2223912	Anchor rod HAS-U 8.8 HDG M16x380	0,59640	8.8	0,5548	0,0302	0,0114
2223913	Anchor rod HAS-U 8.8 HDG M20x180	0,50386	8.8	0,4189	0,0679	0,0171
2223914	Anchor rod HAS-U 8.8 HDG M20x260	0,69002	8.8	0,6050	0,0679	0,0171
2223915	Anchor rod HAS-U 8.8 HDG M20x400	1,01580	8.8	0,9308	0,0679	0,0171
2223916	Anchor rod HAS-U 8.8 HDG M24x300	1,17083	8.8	1,0224	0,1161	0,0323
2223917	Anchor rod HAS-U 8.8 HDG M27x340	1,67966	8.8	1,4637	0,1737	0,0423
2223918	Anchor rod HAS-U 8.8 HDG M30x380	2,28620	8.8	2,0216	0,2110	0,0536
2223947	Anchor rod HAS-U 8.8 HDG M8x150	0,05350	8.8	0,0461	0,0057	0,0018

2223948	Anchor rod HAS-U 8.8 HDG M10x190	0,12158	8.8	0,1074	0,0107	0,0035
2223949	Anchor rod HAS-U 8.8 HDG M12x220	0,20439	8.8	0,1826	0,0156	0,0062
2237080	Anchor rod HAS-U 8.8 M20x350	0,89945	8.8	0,8145	0,0679	0,0171
2237081	Anchor rod HAS-U 8.8 M24x450	1,68203	8.8	1,5336	0,1161	0,0323
2237082	Anchor rod HAS-U 8.8 M10x115	0,08036	8.8	0,0661	0,0107	0,0035
2237083	Anchor rod HAS-U 8.8 M10x130	0,08898	8.8	0,0748	0,0107	0,0035
2237084	Anchor rod HAS-U 8.8 M12x120	0,12199	8.8	0,1002	0,0156	0,0062
2237085	Anchor rod HAS-U 8.8 M12x160	0,15539	8.8	0,1336	0,0156	0,0062
2237086	Anchor rod HAS-U 8.8 M12x180	0,17209	8.8	0,1503	0,0156	0,0062
2237087	Anchor rod HAS-U 8.8 M12x200	0,18879	8.8	0,1670	0,0156	0,0062
2237088	Anchor rod HAS-U 8.8 M16x150	0,26053	8.8	0,2190	0,0302	0,0113
2237089	Anchor rod HAS-U 8.8 M16x220	0,36273	8.8	0,3212	0,0302	0,0113
2237090	Anchor rod HAS-U 8.8 M16x260	0,42113	8.8	0,3796	0,0302	0,0113
2237091	Anchor rod HAS-U 8.8 M8x110	0,04650	8.8	0,0391	0,0057	0,0018
2237092	Anchor rod HAS-U 8.8 M20x300	0,78310	8.8	0,6981	0,0679	0,0171
2276982	Anchor rod HAS-U 8.8 nonHDG M39 Frame	5,35546	8.8	2,4510	0,4656	0,1326
2276979	Anchor rod HAS-U 5.8 nonHDG M39 Frame	5,35546	5.8	2,4510	0,4656	0,1326
2276981	Anchor rod HAS-U 8.8 nonHDG M36 Frame	4,10720	8.8	2,0640	0,3628	0,0920
2276978	Anchor rod HAS-U 5.8 nonHDG M36 Frame	4,10720	5.8	2,0640	0,3628	0,0920
2276980	Anchor rod HAS-U 8.8 nonHDG M33 Frame	3,14050	8.8	1,7460	0,2659	0,0753
2276977	Anchor rod HAS-U 5.8 nonHDG M33 Frame	3,14050	5.8	1,7460	0,2659	0,0753
2276939	Anchor rod HAS-U 8.8 nonHDG M30 Frame	2,31036	8.8	1,4220	0,2234	0,0540
2276976	Anchor rod HAS-U 5.8 nonHDG M30 Frame	2,31036	5.8	1,4220	0,2234	0,0540
2276938	Anchor rod HAS-U 8.8 nonHDG M27 Frame	1,67788	8.8	1,1610	0,1617	0,0423
2276975	Anchor rod HAS-U 5.8 nonHDG M27 Frame	1,67788	5.8	1,1610	0,1617	0,0423
2276937	Anchor rod HAS-U 8.8 nonHDG M24 Frame	1,68138	8.8	0,9000	0,1067	0,0325
2276974	Anchor rod HAS-U 5.8 nonHDG M24 Frame	1,68138	5.8	0,9000	0,1067	0,0325
2276936	Anchor rod HAS-U 8.8 nonHDG M20 Frame	1,01561	8.8	0,6150	0,0623	0,0173
2276973	Anchor rod HAS-U 5.8 nonHDG M20 Frame	1,20281	5.8	0,6150	0,0623	0,0173
2276935	Anchor rod HAS-U 8.8 nonHDG M16 Frame	0,43789	8.8	0,3950	0,0339	0,0114
2276972	Anchor rod HAS-U 5.8 nonHDG M16 Frame	0,49829	5.8	0,3950	0,0339	0,0114
2276934	Anchor rod HAS-U 8.8 nonHDG M12 Frame	0,24319	8.8	0,2180	0,0160	0,0062
2276971	Anchor rod HAS-U 5.8 nonHDG M12 Frame	0,27719	5.8	0,2180	0,0160	0,0062
2276933	Anchor rod HAS-U 8.8 nonHDG M10 Frame	0,06914	8.8	0,1502	0,0119	0,0036
2276970	Anchor rod HAS-U 5.8 nonHDG M10 Frame	0,08044	5.8	0,1502	0,0119	0,0036
2276932	Anchor rod HAS-U 8.8 nonHDG M8 Frame	0,05350	8.8	0,0958	0,0057	0,0018
2276559	Anchor rod HAS-U 5.8 nonHDG M8 Frame	0,05350	5.8	0,0958	0,0057	0,0018
2276853	Anchor rod HAS-U 8.8 HDG M39 Frame	5,35546	8.8	2,4510	0,4656	0,1326
2276842	Anchor rod HAS-U 5.8 HDG M39 Frame	5,35546	5.8	2,4510	0,4656	0,1326
2276852	Anchor rod HAS-U 8.8 HDG M36 Frame	4,10720	8.8	2,0640	0,3628	0,0920
2276841	Anchor rod HAS-U 5.8 HDG M36 Frame	4,10720	5.8	2,0640	0,3628	0,0920
2276851	Anchor rod HAS-U 8.8 HDG M33 Frame	3,14050	8.8	1,7460	0,2659	0,0753
2276840	Anchor rod HAS-U 5.8 HDG M33 Frame	3,14050	5.8	1,7460	0,2659	0,0753
2276850	Anchor rod HAS-U 8.8 HDG M30 Frame	2,31036	8.8	1,4220	0,2234	0,0540
2276689	Anchor rod HAS-U 5.8 HDG M30 Frame	2,31036	5.8	1,4220	0,2234	0,0540
2276849	Anchor rod HAS-U 8.8 HDG M27 Frame	1,67788	8.8	1,1610	0,1617	0,0423
2276688	Anchor rod HAS-U 5.8 HDG M27 Frame	1,67788	5.8	1,1610	0,1617	0,0423
2276848	Anchor rod HAS-U 8.8 HDG M24 Frame	1,68138	8.8	0,9000	0,1067	0,0325
2276687	Anchor rod HAS-U 5.8 HDG M24 Frame	1,68138	5.8	0,9000	0,1067	0,0325
2276847	Anchor rod HAS-U 8.8 HDG M20 Frame	1,01561	8.8	0,6150	0,0623	0,0173
2276686	Anchor rod HAS-U 5.8 HDG M20 Frame	1,20281	5.8	0,6150	0,0623	0,0173
2276846	Anchor rod HAS-U 8.8 HDG M16 Frame	0,43789	8.8	0,3950	0,0339	0,0114
2276685	Anchor rod HAS-U 5.8 HDG M16 Frame	0,49829	5.8	0,3950	0,0339	0,0114
2276845	Anchor rod HAS-U 8.8 HDG M12 Frame	0,24319	8.8	0,2180	0,0160	0,0062
2276684	Anchor rod HAS-U 5.8 HDG M12 Frame	0,27719	5.8	0,2180	0,0160	0,0062
2276844	Anchor rod HAS-U 8.8 HDG M10 Frame	0,06914	8.8	0,1502	0,0119	0,0036
2276683	Anchor rod HAS-U 5.8 HDG M10 Frame	0,08044	5.8	0,1502	0,0119	0,0036
2276843	Anchor rod HAS-U 8.8 HDG M8 Frame	0,05350	8.8	0,0958	0,0057	0,0018
2276682	Anchor rod HAS-U 5.8 HDG M8 Frame	0,05350	5.8	0,0958	0,0057	0,0018

For placing the product on the market in the European Union European Free Trade Association EU/EFTA (with the exception of Switzerland) *Regulation (EU) No. 305/2011 (CPR)* applies. The product needs a declaration of performance based of the European Technical Approval. HAS-U rod is present in several ETA approvals of Hilti Injection Mortars. Please see following table for an overview of ETA approvals with HAS-U rods.

Application

The main application of the HAS-U rod is in structural connections of steel to concrete, where the HAS-U rod with appropriate Hilti Injection Mortar or capsule serves as a fastener of steel baseplate into concrete or masonry base material

Technical Data

Performance data of the products are described in related ETA certificates. Hilti technical data for specific Hilti Injection Mortar and hilti anchor capsules used with HAS-U rod. This is also referred in declaration of performance.

Mechanical properties of HAS-U 5.8 (HDG)

fuk = 500 N/mm²

fyk = 400 N/mm²

Elongation at fracture (l0=5d) > 8% ductile

Electroplated zinc coated ≥ 5 µm

(HDG) hot dip galvanized ≥ 45 µm

Mechanical properties of HAS-U 8.8 (HDG)

fuk = 800 N/mm²

fyk = 640 N/mm²

Elongation at fracture (l0=5d) > 12% ductile

Electroplated zinc coated ≥ 5 µm

(HDG) hot dip galvanized ≥ 45 µm

Constructional data

Name	Value	Unit
Screw diameter	12	mm
Plate diameter	-	mm
Usage category as per ETA	-	-
Characteristic tension resistance	-	kN

Base materials/Ancillary materials

Name	Value	Unit
Steel	100	%

Base materials of HAS-U 5.8 (HDG)

HAS-U 5.8 follows ISO 898-1 (grade 5.8)
the nut follows DIN 934 (grade 8)
the washer follows DIN 125-1

Base materials of HAS-U 8.8 (HDG)

HAS-U 8.8 follows ISO 898-1 (grade 8.8)
the nut follows DIN 934 (grade 8)
the washer follows DIN 125-1

Information on furnace route and pre- and post consumer recycled content:

100% of the declared product derives from basic oxygen furnace (BOF) produced steel and carries a secondary material (recycled material) content of 20%. Based on the most comprehensive market information and internal evaluations available, the pre-consumer share is on average approximately 25% (out of 20%), which means a 5% share of the steel components, while the post-consumer share is on average approximately 75% (out of 20%), which means a 15% share of the steel components

Reference service life
The lifetime of the HAS-U rod is defined in EAD 330499-01-0601 and depends on the Hilti Injection Mortar or capsule used.

LCA: Calculation rules

Declared Unit
The product declared here is a screw from HILTI AG with the designation 'HAS-U 8.8', representative of the HAS-U portfolio. The declared unit refers to 1 kg of the fastening system. The packaging, based on 1 kg, is also included in the calculation at 0.016 kg.

Declared unit and mass reference

Name	Value	Unit
Declared unit	1	kg
Gross density	7850	kg/m^3

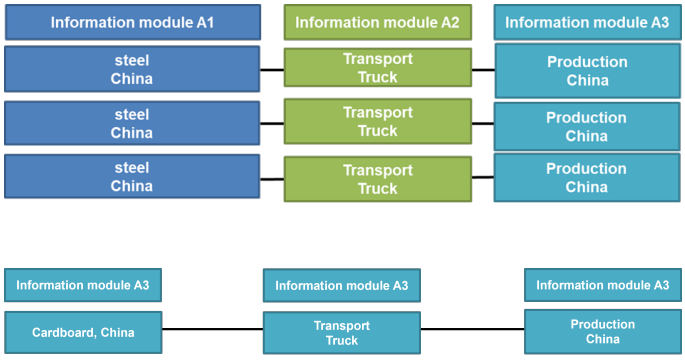
System boundary
Type of EPD: From the cradle to the factory gate with modules C1-C4 and module D. The following information modules are defined as system boundaries in this study:

Production stage (A1- A3):
• A1, Raw material,
• A2, Transport to the manufacturer,
• A3, Production.

End of life (C1- C4):
C1, Dismantling/demolition,
C2, Transport,
C3, Waste treatment,
C4, Disposal.

Reuse, recovery and recycling potential (D)

To accurately record the indicators and environmental impacts of the declared unit, a total of eight information modules are considered. The information modules A1 to A3 cover the material provision, transport to the production site, and the production processes of the product itself.
The intermediate products are sourced from Asia and transported by truck. The following flow charts illustrate the underlying production process.



Information modules C1 to C4 cover the dismantling or demolition of the product from the building, transportation for waste disposal, waste treatment and final disposal of the product. Additionally, reuse, recovery and recycling potentials are adressed in information module D.

Geographic Representativeness
Land or region, in which the declared product system is manufactured, used or handled at the end of the product´s lifespan: Europe

Comparability
Basically, a comparison or an evaluation of EPD data is only possible if all the data sets to be compared were created according to *EN 15804* and the building context, respectively the product-specific characteristics of performance, are taken into account. Sphera LCA for experts

LCA: Scenarios and additional technical information

Characteristic product properties of biogenic carbon
No renewable raw materials are used; therefore, the biogenic carbon is reported as zero. However, the packaging contains the following raw material that includes biogenic carbon.

Information on describing the biogenic carbon content at factory gate

Name	Value	Unit
Biogenic carbon content in product	-	kg C
Biogenic carbon content in accompanying packaging	0.0014	kg C

The values of biogenic carbon are not shown in the results, as A5 is not declared.

Note: 1 kg of biogenic carbon is equivalent to 44/12 kg of CO_2.

End of life (C1-C4)

The removal of the screw from the building is calculated in the information module C1.
The demolition is carried out with an electric screwdriver. The electrical energy consumption for the tool is assumed to be 0.5 MJ for the specified unit. The
electricity consumption is calculated on the basis of a European electricity mix.In the Information Module C3, the waste treatment of the waste from the declared unit, resulting from the demolition of the building, is calculated at the waste treatment plant. The background data sets used are RER: Construction Waste Treatment Plant. The approx. 3% mass loss is process-related from the data set and is deposited in the data set.

Name	Value	Unit
Collected as mixed construction waste	1	kg
Recycling	0.97	kg

Reuse, recovery and/or recycling potentials (D), relevant scenario information

Module D presents the substitution potential of primer steel through a recycling scenario.

Name	Value	Unit
Steel for recycling Net flow	0,773	kg

LCA: Results

The impact assessment of environmental loads is carried out in accordance with EN 15804+A2. The characterisation factors are selected in accordance with PCR (EF3.1).

DESCRIPTION OF THE SYSTEM BOUNDARY (X = INCLUDED IN LCA; MND = MODULE OR INDICATOR NOT DECLARED; MNR = MODULE NOT RELEVANT)

Product stage			Construction process stage		Use stage							End of life stage				Benefits and loads beyond the system boundaries
Raw material supply	Transport	Manufacturing	Transport from the gate to the site	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	MND	MND	MND	MND	MNR	MNR	MNR	MND	MND	X	X	X	X	X

RESULTS OF THE LCA - ENVIRONMENTAL IMPACT according to EN 15804+A2: 1 kg HAS-U 8.8

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
Global Warming Potential total (GWP-total)	kg CO_2 eq	4.71E+00	6.96E-02	4.99E-03	2.72E-03	0	-1.33E+00
Global Warming Potential fossil fuels (GWP-fossil)	kg CO_2 eq	4.71E+00	6.96E-02	4.79E-03	2.68E-03	0	-1.34E+00
Global Warming Potential biogenic (GWP-biogenic)	kg CO_2 eq	2.63E-03	1.57E-05	2.03E-04	0	0	7.92E-03
Global Warming Potential luluc (GWP-luluc)	kg CO_2 eq	2.89E-03	1.04E-05	6.45E-07	3.63E-05	0	-1.79E-04
Depletion potential of the stratospheric ozone layer (ODP)	kg CFC11 eq	1.07E-11	7.65E-13	6.23E-16	4.84E-15	0	1.8E-12
Acidification potential of land and water (AP)	mol H^+ eq	1.37E-02	1.63E-04	2.39E-05	1.34E-05	0	-3.29E-03
Eutrophication potential aquatic freshwater (EP-freshwater)	kg P eq	4.4E-06	3.64E-08	1.31E-09	1.04E-08	0	-3.13E-07
Eutrophication potential aquatic marine (EP-marine)	kg N eq	3.14E-03	2.73E-05	1.17E-05	6.18E-06	0	-5.28E-04
Eutrophication potential terrestrial (EP-terrestrial)	mol N eq	3.42E-02	2.92E-04	1.28E-04	6.83E-05	0	-4.73E-03
Formation potential of tropospheric ozone photochemical oxidants (POCP)	kg NMVOC eq	1.05E-02	8.13E-05	2.4E-05	1.71E-05	0	-2.14E-03
Abiotic depletion potential for non fossil resources (ADPE)	kg Sb eq	3.59E-07	3.29E-09	1.34E-10	2.81E-09	0	-7.6E-06
Abiotic depletion potential for fossil resources (ADPF)	MJ	6.79E+01	1.29E+00	6.64E-02	5.02E-02	0	-1.34E+01
Water use (WDP)	m^3 world eq deprived	6.57E-01	3.98E-03	1.25E-05	5.13E-04	0	-9.06E-02

RESULTS OF THE LCA - INDICATORS TO DESCRIBE RESOURCE USE according to EN 15804+A2: 1 kg HAS-U 8.8

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
Renewable primary energy as energy carrier (PERE)	MJ	6.72E+00	1.84E-01	4.86E-04	5.35E-03	0	5.27E-01
Renewable primary energy resources as material utilization (PERM)	MJ	2.54E-01	0	0	0	0	0
Total use of renewable primary energy resources (PERT)	MJ	6.97E+00	1.84E-01	4.86E-04	5.35E-03	0	5.27E-01
Non renewable primary energy as energy carrier (PENRE)	MJ	6.79E+01	1.29E+00	6.64E-02	5.02E-02	0	-1.34E+01
Non renewable primary energy as material utilization (PENRM)	MJ	0	0	0	0	0	0
Total use of non renewable primary energy resources (PENRT)	MJ	6.79E+01	1.29E+00	6.64E-02	5.02E-02	0	-1.34E+01
Use of secondary material (SM)	kg	2E-01	0	0	0	0	7.73E-01
Use of renewable secondary fuels (RSF)	MJ	0	0	0	0	0	0
Use of non renewable secondary fuels (NRSF)	MJ	0	0	0	0	0	0
Use of net fresh water (FW)	m^3	1.79E-02	2.59E-04	5.31E-07	1.49E-05	0	-1.36E-01

RESULTS OF THE LCA – WASTE CATEGORIES AND OUTPUT FLOWS according to EN 15804+A2: 1 kg HAS-U 8.8

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
Hazardous waste disposed (HWD)	kg	1.49E-08	1.83E-10	2.41E-12	7.26E-12	0	-9.99E-08
Non hazardous waste disposed (NHWD)	kg	3.63E-02	3.2E-04	6.91E-06	1.38E-05	0	1.62E-01
Radioactive waste disposed (RWD)	kg	5.84E-04	1.67E-04	1.06E-07	6.31E-07	0	1.46E-06
Components for re-use (CRU)	kg	0	0	0	0	0	0
Materials for recycling (MFR)	kg	3E-03	0	0	1E+00	0	0
Materials for energy recovery (MER)	kg	0	0	0	0	0	0
Exported electrical energy (EEE)	MJ	0	0	0	0	0	0
Exported thermal energy (EET)	MJ	0	0	0	0	0	0

RESULTS OF THE LCA – additional impact categories according to EN 15804+A2-optional: 1 kg HAS-U 8.8

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
Incidence of disease due to PM emissions (PM)	Disease incidence	ND	ND	ND	ND	ND	ND
Human exposure efficiency relative to U235 (IR)	kBq U235 eq	ND	ND	ND	ND	ND	ND
Comparative toxic unit for ecosystems (ETP-fw)	CTUe	ND	ND	ND	ND	ND	ND

Comparative toxic unit for humans (carcinogenic) (HTP-c)	CTUh	ND	ND	ND	ND	ND	ND
Comparative toxic unit for humans (noncarcinogenic) (HTP-nc)	CTUh	ND	ND	ND	ND	ND	ND
Soil quality index (SQP)	SQP	ND	ND	ND	ND	ND	ND

Disclaimer 1 – for the indicator “Potential Human exposure efficiency relative to U235”. This impact category deals mainly with the eventual impact of low-dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure or radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, radon and from some construction materials is also not measured by this indicator.

Disclaimer 2 – for the indicators “abiotic depletion potential for non-fossil resources”, “abiotic depletion potential for fossil resources”, “water (user) deprivation potential, deprivation-weighted water consumption”, “potential comparative toxic unit for ecosystems”, “potential comparative toxic unit for humans – cancerogenic”, “Potential comparative toxic unit for humans - not cancerogenic”, “potential soil quality index”. The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high as there is limited experience with the indicator.

References

DIN 125-1
Plain washers – Product grade A, up to hardness 250 HV, primarily for hexagon bolts and nuts (Form A).

DIN 934
Hexagon nuts – metric hex nuts (M1–M160), product grades A (≤ M16) and B (> M16); equivalent to ISO 4032.

DIN EN ISO 898-1

DIN EN ISO 14025
DIN EN /ISO 14025:2011-10/, Environmental labels and declarations - Type III Environment
Declarations - Principles and Procedures

DIN EN ISO 14044
DIN EN ISO 14044:2006-10, Environmental management - Life cycle assessment - Requirements and guidance (ISO 14044:2006); German and English version EN ISO 14044:2006

EN 15804+A2
EN 15804:2019-04+A2, Sustainability of construction works – Environmental product declarations – Basic rules for the product category of construction products.

EN/TR 15941
CEN/TR 15941:2010-03: Sustainability of Buildings – Environmental Product Declarations- M
methods for the selection and use of generic data; German version CEN/TR

ETA-11/0354
Injection system Hilti HIT-CT 1 – bonded injection-type anchor for use in non-cracked concrete (M8–M24, rebar 8–25 mm).
Date of issue: 01.09.2020

ETA-11/0493
Injection system Hilti HIT-HY 200-A. Bonded fastener for use in concrete
Date of issue: 10.12.2021

ETA-12/0084
Injection system Hilti HIT-HY 200-R. Bonded fastener for use in concrete
Date of issue: 10.12.2021

ETA-14/0009
Hilti HIT-HY 100. Bonded injection type anchor for use in cracked (threaded rods M10, M12, M16 and rebars Ø10, Ø12, Ø14, Ø16) and non-cracked concrete (sizes M8 to M30)
Date of issue: 24.09.2023

ETA-15/0882
Injection system Hilti HIT-RE 100. Bonded anchor for use in concrete
Date of issue: 06.09.2023

ETA-16/0143
Injection system Hilti HIT-RE 500 V3. Bonded Fastener with threaded rods, rebar, internally sleeve and Hilti tension anchor HZA for use in concrete
Date of issue: 25.09.2023

ETA-16/0239
Hilti HIT-MM Plus. Injection system for use in masonry
Date of issue: 19.10.2023

ETA-16/0515
HVU2. Bonded fasteners and bonded expansion fasteners for use in concrete
Date of issue: 14.09.2023

ETA-17/0005
HIT-1 (CE). Bonded injection type anchor for use in uncracked concrete
Date of issue: 02.07.2023

ETA-17/0199
Injection system Hilti HIT-MM Plus. Bonded anchor for use in non-cracked concrete
Date of issue: 30.08.2019

ETA-19/0148
Injection system Hilti HIT-RE 100-HC. Bonded fasteners for use in concrete
Date of issue: 13.12.2019

ETA-19/0233
Injection system Hilti HIT-RE 500-HC-Rail. Bonded fasteners for use in concrete
Date of issue: 23.03.2020

ETA-19/0465
Hilti HIT-HY 170 with HAS-U. Bonded fasteners and bonded expansion fasteners for use in concrete
Date of issue: 10.09.2024

ETA-19/0160
Hilti HIT-HY 270 with HAS and HAS-U. Injection system for use in masonry
Date of issue: 30.10.2023

ETA-19/0161
Hilti HIT-HY 170 with HAS and HAS-U. Injection system for use in masonry

Date of issue: 19.10.2023

ETA-19/0194
HIT-RE 500 V3. Glued-in rods for timber connections
Date of issue: 11.09.2019

ETA-19/0601
Injection System Hilti HIT-HY 200-A V3 and HIT-HY 200-R V3. Bonded fastener and bonded expansion fasteners for use in concrete
Date of issue: 29.01.2024

ETA-20/0834
HIT-RE 500 V4. Glued-in rods for timber connections
Date of issue: 12.11.2023

ETA-20/0541
Injection system Hilti HIT-RE 500 V4. Bonded fastener with threaded rods, rebar, internally threaded sleeve HIS-(R)N and Hilti Tension anchor HZA(-R) for use in concrete for a working life of 50 and 100 years
Date of issue: 09.06.2023

ETA-20/0697
Connector Hilti HCC-U with Injectionmortar Hilti HIT-HY 200-A V3, Hilti HIT-HY 200-R V3, Hilti HIT-RE 500 V3, Hilti HIT-RE 500 V4 and Hilti HIT-HY 170
Date of issue: 28.08.2023

ETA-23/0277
Hilti HAS-U A4, HIT-HY 200-R/-A V3, HVU2, HIT-RE 500 V4, Hilti Verfüllset. Post-installed fasteners in concrete under fatigue cyclic loading
Date of issue: 07.02.2024

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Product Category Rules for Construction Products and Services - Calculation Rules for Ecology and Requirements for the Background Report V1.4, Institut Bauen und Umwelt e.V., 04.2024.

Product Category Rules Part B
PCR Screws, 01/06/2023

Regulation (EU) No. 305/2011 (Construction Products Regulation – CPR)

Sphera
LCA for Experts: Holistic balancing
Leinfelden-Echterdingen; Sphera Solution GmbH (Hrsg.)
Product Sustainability Data Search | Sphera (GaBi) (4.12.2024)

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