

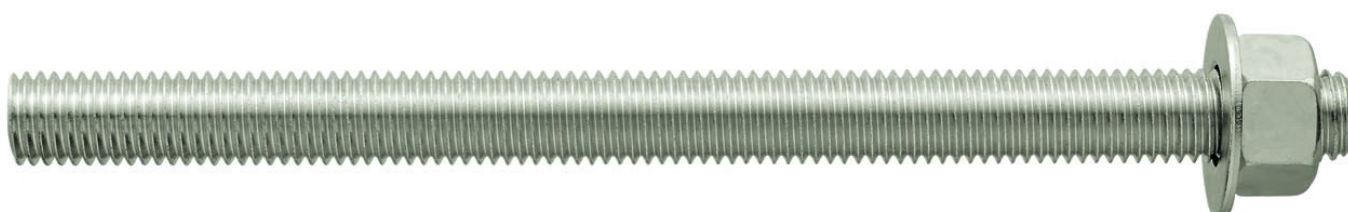
ENVIRONMENTAL PRODUCT DECLARATION

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-20250284-CBN1-EN
Issue date	10.09.2025
Valid to	09.09.2030

HAS A4
Hilti AG

www.ibu-epd.com | <https://epd-online.com>



General Information

Hilti AG

Programme holder

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

Declaration number

EPD-HIL-20250284-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 A4

Owner of the declaration

Hilti Aktiengesellschaft
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9494 Schaan
Liechtenstein

Declared product / declared unit

HAS A4 M12x220

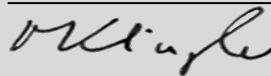
Scope:

This document refers to HAS A4 M12x220 a representative product for the HAS-A4 portfolio. The HAS A4 M12x220 was selected as a representative product because it is the best-selling item in the portfolio. Specific data from the HILTI AG manufacturing plant in Shanghai was collected for the preparation of the LCA. The input and output flows used in this calculation were collected as annual average consumption for the year 2023. The procedure for allocating the data to the declared unit is described in the chapter Allocation. The owner of the declaration is responsible for the underlying information and evidence; any liability of the IBU regarding manufacturer information, eco-balance data and evidence is excluded. 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	
<input type="checkbox"/>	internally
<input checked="" type="checkbox"/>	externally



Matthias Klingler,
(Independent verifier)

Product

Product description/Product definition

HAS A4 is a threaded rod used for anchoring applications to resist static and seismic structural loads in the construction industry. The HAS A4 rod is used together with Hilti injection mortars. The stainless steel variant of the HAS family is described further in this report.

IT- Number	Product name	Weight total [kg]
2390267	Anchor rod HAS 8.8 M12x220	0,1836
2390255	HAS A4 M8x80	0,0325
2390256	HAS A4 M8x110	0,0421
2390257	HAS A4 M8x150	0,0549
2390258	HAS A4 M10x115	0,0727
2390259	HAS A4 M10x130	0,0803
2390260	HAS A4 M10x150	0,0903
2390261	HAS A4 M10x170	0,1002
2390262	HAS A4 M10x190	0,1102
2390263	HAS A4 M12x120	0,1109
2390264	HAS A4 M12x160	0,1406
2390265	HAS A4 M12x180	0,1546
2390266	HAS A4 M12x200	0,1696
2390267	HAS A4 M12x220	0,1836
2390268	HAS A4 M16x150	0,2326
2390269	HAS A4 M16x190	0,2606
2390270	HAS A4 M16x220	0,2446
2390271	HAS A4 M16x260	0,2966
2390272	HAS A4 M20x180	0,3506
2390273	HAS A4 M20x260	0,3356
2434612	HAS A4 M12x260	0,4036
2434613	HAS A4 M12x300	0,3876
2434601	HAS A4 M16x200	0,4816
2434602	HAS A4 M16x240	0,5476
2434586	HAS A4 M16x300	0,5866
2434614	HAS A4 M16x350	0,4566
2434603	HAS A4 M16x380	0,5336
2434615	HAS A4 M20x220	0,6556
2434587	HAS A4 M20x240	0,6166
2434604	HAS A4 M20x300	0,6976
2434616	HAS A4 M20x350	0,8006
2434594	HAS A4 M20x400	0,9026
2434605	HAS A4 M24x240	0,8533
2434588	HAS A4 M24x260	0,9123
2434617	HAS A4 M24x300	1,0313
2434595	HAS A4 M24x450	1,4753
2390278	HAS A4 M8x1000	0,3156
2390279	HAS A4 M10x1000	0,4964
2390280	HAS A4 M12x1000	0,7194
2390281	HAS A4 M16x1000	1,3233
2390282	HAS A4 M20x1000	2,0733
2390283	HAS A4 M24x1000	2,9911
2390284	HAS A4 M8x3000	0,9467
2390285	HAS A4 M10x3000	1,4892
2390286	HAS A4 M12x3000	2,1581
2390193	HAS A4 M16x3000	3,9699
2390287	HAS A4 M20x3000	6,2200
2390288	HAS A4 M24x3000	8,9732

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 off the European Technical Approval. HAS A4 rod is present in several ETA approvals of Hilti Injection Mortars. Example ETA-19/0465 assessed based on EAD 330499-01-0601 'Bonded fasteners for use in concrete'. For each application and use the respective national provisions apply.

The Hilti HAS A4 threaded rod is anchor fastener for use with Hilti Injection Mortars in concrete or masonry which is installed into drilled hole and after curing time of mortar nut and washer is installed and nut is torqued.

Application

The core use of the product is in various construction applications where threaded rods are needed. Including commercial, industrial, residential and infrastructure segments. The main application of the HAS A4 rod is in structural connections of steel to concrete, where the HAS A4 rod with appropriate Hilti Injection Mortar serves as fastener of a steel baseplate into concrete or masonry base material.

Technical Data

Performance data of the product are described in related ETA certificates, Hilti technical data for specific Hilti Injection Mortar used with HAS A4 rod. Example ETA-19/0465. This is also referred in declaration of performance.

For diameters M24 and smaller:

$$f_{uk} = 700 \text{ N/mm}^2$$

$$f_{yk} = 450 \text{ N/mm}^2$$

Elongation at fracture ($l_0=5d$) > 12% ductile

For diameters above M24:

$$f_{uk} = 500 \text{ N/mm}^2$$

$$f_{yk} = 210 \text{ N/mm}^2$$

Elongation at fracture ($l_0=5d$) > 12% ductile

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
Stainless Steel	100	%

HAS A4 follows ISO 3506-1

the nut follows DIN 934 (A4 material)

the washer follows DIN 125-1 (A4 material)

Information on pre- and post consumer recycled content:

100% of the declared product derives from electric arc furnace (ARC) produced steel and carries secondary material (recycled material) content of 75%. Based on the most comprehensive market information and internal evaluations available, the pre-consumer share is on average approximately 25% (out of 75%), which means a 18.75% share of the steel components, while

the post-consumer share is on average approximately 75% (out of 75%), which means a 56.25% share of the steel components.

Reference service life

The lifetime of the HAS-U A4 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 A4 M12x220', representative of the HAS A4 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 0,0019 kg. The following table shows the data for the decarbonized unit.

Declared unit and mass reference

Name	Value	Unit
Declared unit HAS A4 M12x220	1	kg
conversion factor to 1 kg	1	-
Gross density	7900	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.

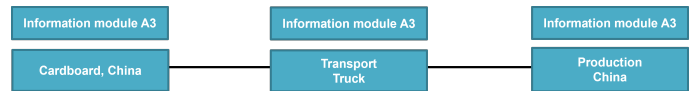
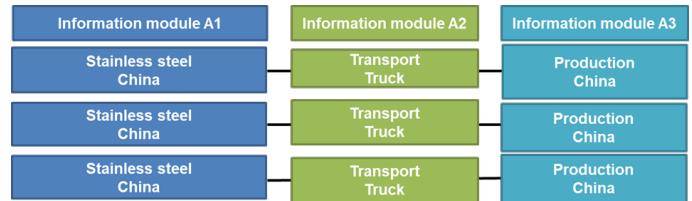
End of life (C1- C4):

- 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.

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 V. 2024.2

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	0.001	kg C

Note: 1 kg of biogenic carbon is equivalent to 44/12 kg of CO₂.

End of life (C1-C4)

In the information module C1, the removal of the screw from the building is calculated. 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 stainless steel through a recycling scenario.

Name	Value	Unit
Stainless steel for recycling Net flow	0,466	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 A4

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
Global Warming Potential total (GWP-total)	kg CO ₂ eq	4.11E+00	6.96E-02	4.99E-03	2.72E-03	0	-1.21E+00
Global Warming Potential fossil fuels (GWP-fossil)	kg CO ₂ eq	4.11E+00	6.96E-02	4.79E-03	2.68E-03	0	-1.21E+00
Global Warming Potential biogenic (GWP-biogenic)	kg CO ₂ eq	9.41E-04	1.57E-05	2.03E-04	0	0	5.82E-03
Global Warming Potential luluc (GWP-luluc)	kg CO ₂ eq	5.15E-03	1.04E-05	6.45E-07	3.63E-05	0	-3.28E-03
Depletion potential of the stratospheric ozone layer (ODP)	kg CFC11 eq	1.64E-11	7.65E-13	6.23E-16	4.84E-15	0	-7.8E-16
Acidification potential of land and water (AP)	mol H ⁺ eq	2.85E-02	1.63E-04	2.39E-05	1.34E-05	0	-7.54E-03
Eutrophication potential aquatic freshwater (EP-freshwater)	kg P eq	4.94E-06	3.64E-08	1.31E-09	1.04E-08	0	-1.77E-06
Eutrophication potential aquatic marine (EP-marine)	kg N eq	3.07E-03	2.73E-05	1.17E-05	6.18E-06	0	-1.08E-03
Eutrophication potential terrestrial (EP-terrestrial)	mol N eq	3.4E-02	2.92E-04	1.28E-04	6.83E-05	0	-1.17E-02
Formation potential of tropospheric ozone photochemical oxidants (POCP)	kg NMVOC eq	9.9E-03	8.13E-05	2.4E-05	1.71E-05	0	-3.3E-03
Abiotic depletion potential for non fossil resources (ADPE)	kg Sb eq	2.18E-04	3.29E-09	1.34E-10	2.81E-09	0	-3.56E-05
Abiotic depletion potential for fossil resources (ADPF)	MJ	5.06E+01	1.29E+00	6.64E-02	5.02E-02	0	-1.5E+01
Water use (WDP)	m ³ world eq deprived	9.3E-01	3.98E-03	1.25E-05	5.13E-04	0	-5.02E-01

RESULTS OF THE LCA - INDICATORS TO DESCRIBE RESOURCE USE according to EN 15804+A2: 1 kg HAS A4

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
Renewable primary energy as energy carrier (PERE)	MJ	1.01E+01	1.84E-01	4.86E-04	5.35E-03	0	-2.82E+00
Renewable primary energy resources as material utilization (PERM)	MJ	2.55E-01	0	0	0	0	0
Total use of renewable primary energy resources (PERT)	MJ	1.04E+01	1.84E-01	4.86E-04	5.35E-03	0	-2.82E+00
Non renewable primary energy as energy carrier (PENRE)	MJ	5.06E+01	1.29E+00	6.64E-02	5.02E-02	0	-1.5E+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	5.06E+01	1.29E+00	6.64E-02	5.02E-02	0	-1.5E+01
Use of secondary material (SM)	kg	7.54E-01	0	0	0	0	2.19E-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	2.41E-02	2.59E-04	5.31E-07	1.49E-05	0	-2.06E-02

RESULTS OF THE LCA – WASTE CATEGORIES AND OUTPUT FLOWS according to EN 15804+A2:

1 kg HAS A4

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
Hazardous waste disposed (HWD)	kg	1.75E-08	1.83E-10	2.41E-12	7.26E-12	0	-1.38E-04
Non hazardous waste disposed (NHWD)	kg	4.87E-01	3.2E-04	6.91E-06	1.38E-05	0	1.35E-02
Radioactive waste disposed (RWD)	kg	8.08E-04	1.67E-04	1.06E-07	6.31E-07	0	-9.81E-05
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 A4

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 (\leq M16) and B ($>$ M16); equivalent to ISO 4032.

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

DIN EN ISO 3506-1

Fasteners – Mechanical properties of corrosion-resistant stainless steel fasteners – Part 1: Bolts, screws and studs with specified grades and property classes.

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-14/0009

Hilti HIT-HY 100. Bonded injection type anchor for use in cracked (threaded rods M10, M12, M16 and rebars \varnothing 10, \varnothing 12, \varnothing 14, \varnothing 16) 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-17/0005

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

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-19/0465

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

ETA-19/0601

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-20/0541

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-20/0834

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

ETA-22/0395

Injection system Hilti HIT-HY 270 in solid bricks. Metal injection anchors for use in masonry under seismic actions.
Date of issue: 25.09.2023

IBU 2021

Institut Bauen und Umwelt e.V.: General instructions for the



EPD program of the Institut Bauen und Umwelt e.V., Version 2.1, Berlin: Institut Bauen und Umwelt e.V., 2022 www.ibu-epd.com

Product Category Rules Construction Products Part A

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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