

ENVIRONMENTAL PRODUCT DECLARATION

as per ISO 14025 and EN 15804+A2

**Preliminary – EPD
still in verification**

Owner of the Declaration	Busch + Kunz GmbH & Co. KG
Publisher	Institut Bauen und Umwelt e.V. (IBU)
Programme holder	Institut Bauen und Umwelt e.V. (IBU)
Declaration number	
Issue date	EPD in verification, issuance expected for December 2024
Valid to	

Steel Pipe Fitting Busch + Kunz GmbH & Co. KG

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ECO PLATFORM
EPD
VERIFIED



1. General Information

Busch + Kunz GmbH & Co. KG

Programme holder

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

Declaration number

This declaration is based on the product category rules:

Steel pipes for pressure applications, 01.08.2021
(PCR checked and approved by the SVR)

Issue date

EPD in verification, issuance expected for December 2024

Valid to

EPD in verification

Name of Chairman
(Chairman of Institut Bauen und Umwelt e.V.)

EPD in verification

Name of Managing Director
(Managing Director Institut Bauen und Umwelt e.V.)

Steel Pipe Fitting

Owner of the declaration

Busch + Kunz GmbH & Co. KG
Cark-Benz-Straße 17-19
57299 Burbach
Germany

Declared product / declared unit

1 metric tonne of average Steel Pipe Fitting

Scope:

A life cycle assessment according to ISO 14040/44 has been performed to calculate the environmental impact of 1 metric tonne of steel pipe fitting manufactured by Busch + Kunz GmbH & Co. KG at the production plants in Burbach and Torgelow, Germany. The product groups under study are:

- Butt welded fittings in carbon steel
- Butt welded fittings in stainless steel

The manufacturing process for both groups are similar with the only major differing factor being the type of steel used. Stainless steel represents the majority in the produced final products as well as in the data sets. A worst-case approach was taken when assumptions were made to take into account the variability in data.

For data under control by Busch + Kunz, primary data was used for the material and energy used. Supplier specific data was used where available, which is the case for the majority of supplied steel. On site consumed electricity is modelled using the German energy mix. 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

EPD in verification

Name of verifier,
(Independent verifier)

2. Product

2.1 Product description/Product definition

This EPD includes the following products:

- Butt welded fittings in carbon steel
- Butt welded fittings in stainless steel

Of the abovementioned categories, only tees, concentric reducers and excentric reducers are covered in this EPD.

For the placing on the market in the European Union/European Free Trade Association (EU/EFTA) (with the exception of Switzerland) the following legal provisions apply: 2014/68/EU of the European Parliament and of the Council of 15 May 2014 on the harmonization of the laws of the Member States relating to the making available on the market of pressure equipment and the harmonized standards based on these provisions:

- EN 10253-1:2000, Butt-welding pipe fittings – Part 1: Wrought carbon steel for general use and without specific inspection requirements
- EN 10253-2:2021, Butt-welding pipe fittings – Part 2: Non alloy and ferritic alloy steels with specific inspection requirements
- EN 10253-3:2009, Butt-welding pipe fittings - Part 3: Wrought austenitic and austenitic-ferritic (duplex) stainless steels without specific inspection requirements
- EN 10253-4:2008, Butt-welding pipe fittings - Part 4: Wrought austenitic and austenitic-ferritic (duplex) stainless steels with specific inspection requirements

The CE-marking takes into account the proof of conformity with the respective harmonized standards based on the legal provisions above. For the application and use the respective national provisions apply.

2.2 Application

Butt welded fittings are used to join different pipes together and can be used for oil, water or gas applications, depending on the material used. Butt welded fittings are designed to be joined by a weld and therefore do not feature threaded ends. Butt welded fittings include different types of fittings in various shapes and dimensions, such as tees, concentric reducers, and excentric reducers. Pipe bends, crosses, welded elbows and saddle elbows can also fall into the category of butt-welded fittings, however, only the types listed in the Product description above are covered in this EPD.

2.3 Technical Data

The assessed products follow a range of standards in relation to materials, production and technical properties, depending on the type of flanges. The following standards are relevant for Busch + Kunz's fittings:

- EN 10253-1
- EN 10253-2
- EN 10253-3
- EN 10253-4
- EN 10216-1
- EN 10216-2
- EN 10216-3
- EN 10216-4
- EN 10216-5
- EN 10216-7
- ASTM A106
- ASTM A234
- ASTM A333
- ASTM A420
- ASTM A860
- ASTM A960
- ASME B16.9
- API SPEC 5L

- AD2000 HP 8/3
- AD2000 W2/4/10

Constructional data

These values are attributed to fittings made of carbon steel.

Name	Value	Unit
Yield strength pipe [ASTM A370]	235 - 355	N/mm ²
Tensile strength pipe [ASTM A370]	360 - 650	N/mm ²
Hardness [ASTM E110]	170	HV 10
Notched-bar impact value [ASTM A370]	27 - 40	Joule
Ductility [API RP 5L3]	20 - 25	%

The ranges of values for stainless steel are as follows:

Yield Strength: 180 - 210 N/mm²
 Tensile Strength: 470 - 730 N/mm²
 Hardness: 200 - 210 HV 10
 Notched-bar impact value: 60 - 100 J
 Ductility: 30 - 40 %

The customs tariff numbers of the products are as follows:

- Carbon Steel: 73079980
- Stainless Steel: 73072980

2.4 Delivery status

The measurements of the products can vary between different lengths, thicknesses and diameters depending on the intended use and demand.

2.5 Base materials/Ancillary materials

Name	Value	Unit
Steel (Carbon or Stainless)	100	%

1) This product contains substances listed in the candidate list (date: 21.06.2024) exceeding 0.1 percentage by mass: **no**

2) This product contains other CMR substances in categories 1A or 1B which are not on the candidate list, exceeding 0.1 percentage by mass: **no**

3) Biocide products were added to this construction product or it has been treated with biocide products (this then concerns a treated product as defined by the (EU) Ordinance on Biocide Products No. 528/2012): **no**

2.6 Manufacture

The manufacturing on site includes the following processes:

- Cutting of steel pipes
- Blasting for surface treatment
- Hydroforming under pressure
- Heat treatment to achieve material requirements
- Turning / milling of ends

Busch + Kunz is operating under a certified DIN EN ISO 9001 Quality Management System which covers all manufacturing sites.

2.7 Environment and health during manufacturing

During the entire manufacturing process, no other health protection measures are required extending beyond the legally specified industrial protection measures for commercial enterprises.

2.8 Product processing/Installation

Steels can be welded manually or automatically. Industrial safety measures are required during processing/installation. No significant environmental pollution is triggered by

processing/assembling these products. No special measures are required to protect the environment. Residue and packaging materials must be collected separately in the construction site. The specifications of local waste authorities must be followed during processing.

2.9 Packaging

A worst case amount of cardboard packaging was assumed for the auxiliary materials. The product itself is not shipped in specific packaging and is therefore omitted for this EPD.

2.10 Condition of use

Environmental effects of usage stage are not considered in the scope of this study. Nevertheless, the product does not require any maintenance, repair or renewal during usage. As a general rule, the material composition of the product does not change over its lifetime.

2.11 Environment and health during use

There are no health risks for users of steel pipes or for persons manufacturing or processing steel pipes. From an environmental perspective, there are no restrictions governing the use of steel pipes.

2.12 Reference service life

The life cycle of steel pipe is dependent on the respective structural design, use and maintenance. The use phase for steel pipe is not depicted as they involve maintenance-free and generally durable products.

2.13 Extraordinary effects

Fire

Steel pipe fittings comply with the requirements of construction product class A1 'nonflammable' in accordance with DIN 4102, Part 1 and EN 13501-1. No smoke gas develops.

Water

Influence of water on the steel pipe fittings does not cause any negative environmental effects.

Mechanical destruction

High mechanical durability prevents the steel pipe fittings from any major damages due to most mechanical impacts.

2.14 Re-use phase

Theoretically, steel is 100 % recyclable. For this EPD, a recycling quota of 95 % is assumed.

2.15 Disposal

At most, 5 % of steel is assumed to be disposed in landfills due to recycling losses. Waste code in accordance with the European List of Wastes (EWC), as per the European List of Wastes Ordinance is "17 04 05 Iron and Steel".

2.16 Further information

More information can be found at:
<https://www.busch-kunz.de/>

3. LCA: Calculation rules

3.1 Declared Unit

The declared unit is 1 metric tonne of average Steel Pipe Fitting (average product from two manufacturing plants)

Declared unit and mass reference

Name	Value	Unit
Declared unit	1	t
Density	-	kg/m ³

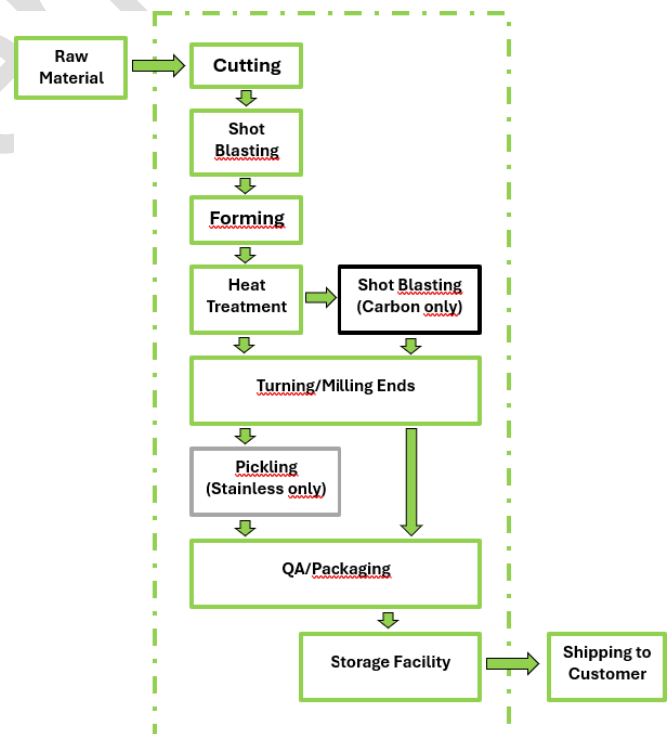
Other declared units are allowed if the conversion is shown transparently.

The production process is similar for all products for which this average EPD is applicable. Therefore, all primary data is highly representative in regards to process and geographic as well as temporal correlation.

3.2 System boundary

Type of the EPD: cradle to gate with Modules C1–C4 and Module D

The fore- and background processes of the manufacturing process are displayed in the following graphic with foreground processes inside of the green box. Beyond that, the end-of-life is modelled including the transportation to waste handling, waste processing and disposal. Further, the benefits and loads due to recycling and reuse potentials are included in the EPD.



The module A1-A3 includes the production of raw materials, auxiliary materials and packaging materials, transportation, the energy demand and takes into account any losses during manufacture.

Manual deconstruction was assumed at the end of life, therefore C1 was set to 0 for all impact categories.

Module C2 includes the transport to waste handling.

The preparation for recycling of steel is included in C3 and minor disposals are modelled in C4.

Module D includes the recycling potential from steel.

3.3 Estimates and assumptions

The raw material for the product under assessment is either stainless steel, modelled as chromium steel 18/8, and carbon steel, modelled as low-alloyed steel using the generic ecoinvent 3.9.1 data set.

- steel production, chromium steel 18/8, hot rolled | steel, chromium steel 18/8, hot rolled | EN15804, U - RER
- steel production, low-alloyed, hot rolled | steel, low-alloyed, hot rolled | EN15804, U - RER

A majority of carbon steel is derived from a manufacturer with an up to date EPD, so only 22,5 % of the carbon steel data was generic. 77,5% of carbon steel data is supplier specific.

In module A2, generous transportation distances were assumed. The transportation distance for the majority of steel from supplier to Busch + Kunz is known and the transportation distances for auxiliary products were calculated from average transportation data sets in ecoinvent.

The transport to waste handling was generously assumed to be 500km.

In Module D, for the end-of-life, steel is assumed to be recycled by 95% even if it is 100% recyclable. Because collecting and melting loss is assumed to be 5% in total. Therefore, 5% of steel is assumed to be disposed of in landfill at module C4.

3.4 Cut-off criteria

All inputs and outputs to a (unit) process are included in the calculation, for which data were available. The applied cut off criteria is 1% of the total mass input of that unit process in case of insufficient input data or data gaps for a unit process. The total of

neglected input flows is a maximum of 5% mass.

3.5 Background data

The background data base is ecoinvent, Allocation, cut-off by classification, ecoinvent database version 3.9.1 (2022)

3.6 Data quality

For foreground data, site specific data is used with high geographical, temporal and technical correlation. Data from the year 2023 and from manufacturing processes on site are used. For background data, the data quality varies depending on the datasets in the ecoinvent 3.9.1 database.

3.7 Period under review

For manufacturing data, the energy and material used in the year 2023 was assessed.

3.8 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

3.9 Allocation

For background data, allocation is performed according to the data set.

Waste material to recycling is allocated as open loop recycling with the avoided burden of production being modelled in life cycle stage D.

3.10 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. The used background database was ecoinvent, Allocation, cut-off by classification, ecoinvent database version 3.9.1 (2022)

4. LCA: Scenarios and additional technical information

Characteristic product properties of biogenic carbon

No biogenic carbon is included in the product. The following assumptions are the basis for the calculated scenarios of included modules.

End of life (C1-C4)

Name	Value	Unit
Recycling	950	kg
Landfilling	50	kg

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

Name	Value	Unit
Collection Rate	95	%

5. LCA: Results Please note – EPD in verification

The declared unit of this LCA study is 1 metric tonne of average Steel Pipe Fitting.

The impact estimate results are relative expressions and do not predict impacts on category endpoints, the exceeding of thresholds and safety margins or risks.

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 tonne Steel Pipe Fitting

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
Global Warming Potential total (GWP-total)	kg CO ₂ eq	2.25E+03	0	7.44E+01	9.29E-01	3.04E-01	-1.47E+03
Global Warming Potential fossil fuels (GWP-fossil)	kg CO ₂ eq	2.31E+03	0	7.43E+01	9E-01	3.04E-01	-1.46E+03
Global Warming Potential biogenic (GWP-biogenic)	kg CO ₂ eq	-5.94E+01	0	6E-02	2.65E-02	1.62E-04	-2.46E+00
Global Warming Potential luluc (GWP-luluc)	kg CO ₂ eq	1.31E+00	0	3.63E-02	2E-03	1.83E-04	-7.58E-01
Depletion potential of the stratospheric ozone layer (ODP)	kg CFC11 eq	1.74E-04	0	1.63E-06	1.72E-08	8.8E-09	-3.45E-05
Acidification potential of land and water (AP)	mol H ⁺ eq	9.12E+00	0	3.47E-01	5.41E-03	2.29E-03	-5.83E+00
Eutrophication potential aquatic freshwater (EP-freshwater)	kg P eq	2.02E+00	0	5.36E-03	7.67E-04	2.53E-05	-6.59E-01
Eutrophication potential aquatic marine (EP-marine)	kg N eq	5.5E-01	0	1.38E-01	1.1E-03	8.79E-04	-1.39E+00
Eutrophication potential terrestrial (EP-terrestrial)	mol N eq	6.69E+00	0	1.47E+00	1.06E-02	9.42E-03	-1.46E+01
Formation potential of tropospheric ozone photochemical oxidants (POCP)	kg NMVOC eq	3.46E+00	0	5.15E-01	3.38E-03	3.28E-03	-7.35E+00
Abiotic depletion potential for non fossil resources (ADPE)	kg Sb eq	2.05E-02	0	2.37E-04	1.01E-05	4.3E-07	-2.09E-03
Abiotic depletion potential for fossil resources (ADPF)	MJ	3.38E+04	0	1.08E+03	1.96E+01	7.63E+00	-1.82E+04
Water use (WDP)	m ³ world eq deprived	9.92E+01	0	5.47E+00	4.47E-01	2.37E-02	-3.1E+02

RESULTS OF THE LCA - INDICATORS TO DESCRIBE RESOURCE USE according to EN 15804+A2: 1 tonne Steel Pipe Fitting

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
Renewable primary energy as energy carrier (PERE)	MJ	3.51E+03	0	1.7E+01	3.94E+00	6.41E-02	-1.05E+03
Renewable primary energy resources as material utilization (PERM)	MJ	0	0	0	0	0	0
Total use of renewable primary energy resources (PERT)	MJ	3.51E+03	0	1.7E+01	3.94E+00	6.41E-02	-1.05E+03
Non renewable primary energy as energy carrier (PENRE)	MJ	4.32E+02	0	9.36E+01	3.66E-01	6.88E-01	-3.4E+02
Non renewable primary energy as material utilization (PENRM)	MJ	3.39E+04	0	9.87E+02	1.92E+01	6.94E+00	-1.78E+04
Total use of non renewable primary energy resources (PENRT)	MJ	3.44E+04	0	1.08E+03	1.96E+01	7.63E+00	-1.82E+04
Use of secondary material (SM)	kg	9.21E+02	0	1.18E+00	2.35E-01	3.37E-03	-4.54E+02
Use of renewable secondary fuels (RSF)	MJ	2.57E+02	0	3.22E-01	1.34E-01	6.55E-04	-3.35E+01
Use of non renewable secondary fuels (NRSF)	MJ	7.41E+01	0	8.4E-01	1.36E-01	1.68E-03	-4.01E+01
Use of net fresh water (FW)	m ³	1.34E+01	0	1.38E-01	1.43E-02	7.88E-03	-8.11E+00

RESULTS OF THE LCA – WASTE CATEGORIES AND OUTPUT FLOWS according to EN 15804+A2: 1 tonne Steel Pipe Fitting

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
Hazardous waste disposed (HWD)	kg	4.31E+02	0	1E+00	2.57E-02	5.24E-03	-1.99E+02
Non hazardous waste disposed (NHWD)	kg	9E+01	0	6.69E+01	5.81E-02	5E+01	-7.2E+01
Radioactive waste disposed (RWD)	kg	6.29E-02	0	3.61E-04	1.29E-04	1.12E-06	-3.19E-02
Components for re-use (CRU)	kg	1.03E-18	0	-1.25E-19	0	-1.22E-22	-1.42E-18
Materials for recycling (MFR)	kg	6.45E+02	0	1.05E+00	2.28E-01	2.76E-03	6.9E+02
Materials for energy recovery (MER)	kg	1.06E+01	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 tonne Steel Pipe Fitting

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
Incidence of disease due to PM emissions (PM)	Disease incidence	3.58E-05	0	7.32E-06	3.91E-08	5.01E-08	-1.38E-04

Human exposure efficiency relative to U235 (IR)	kBq U235 eq	1.16E+02	0	1.48E+00	5.02E-01	4.8E-03	-1.25E+02
Comparative toxic unit for ecosystems (ETP-fw)	CTUe	1.61E+03	0	5.28E+02	3.66E+00	3.55E+00	-6.52E+03
Comparative toxic unit for humans (carcinogenic) (HTP-c)	CTUh	3.03E-06	0	4.01E-08	8.76E-10	1.3E-10	-2.33E-05
Comparative toxic unit for humans (noncarcinogenic) (HTP-nc)	CTUh	1.66E-05	0	8.38E-07	1.67E-08	1.64E-09	-2.87E-04
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.

6. LCA: Interpretation

For most environmental impacts, the life cycle stage A1 Raw Material Supply is responsible for 80 - 90 % of impacts. When considering the whole product stage A1 - A3, the share of impacts is even greater and lies between 90 - 99 % for most categories. This is to be expected, since not much energy and material is needed to recycle or dispose of the product compared to its production. A major improvement in environmental impact can be therefore identified in the purchased steel pipes.

The recycled content of the main steel supplier is comparatively high, which is reflected in the results of this EPD. Further

improving the content of secondary steel or increasing the use of renewable energy in steel production would have a noticeable effect on the impacts of the whole EPD.

The recycling potential modelled in stage D is quite sizable compared to the production impact due to the use of environmentally favourable steel. A generic data set for avoided product in stage D is used to calculate these avoided burdens. Further evaluation of recycling pathways and actual avoided impacts would be needed to improve the full picture of circular steel.

7. Requisite evidence

This EPD concerns steel pipes for oil/gas and water pipelines made from structural steel. Further processing depends on the respective application.

Evidence of tests in line with the technical conditions governing delivery is provided by works test certificates. **7.1 Evidence for drinking water installations (where relevant):**

Further hygienic evidence may be required for drinking water installations. Steel pipes for drinking water installations must be lined with cement mortar. Suitability as drinking water is verified in accordance with the DVGW worksheet W 347.

8. References

Standards

ASTM A 106

ASTM A 106:2019, Standard Specification for Seamless Carbon Steel Pipe for High-Temperature Service

ASTM A 234

ASTM A 234:2024, Standard Specification for Piping Fittings of Wrought Carbon Steel and Alloy Steel for Moderate and High Temperature Service

ASTM A 333

ASTM A 333:2024, Standard Specification for Seamless and Welded Steel Pipe for Low-Temperature Service and Other Applications with Required Notch Toughness

ASTM A 420

ASTM A 420:2024, Standard Specification for Piping Fittings of Wrought Carbon Steel and Alloy Steel for Low-Temperature Service

ASTM A 860

ASTM A 860:2022, Standard Specification for Wrought High-Strength Ferritic Steel Butt-Welding Fittings

ASTM A 960

ASTM A 960:2024, Standard Specification for Common Requirements for Wrought Steel Piping Fittings

ASME B 16.9

ASME B16.9:2018, Factory-Made Wrought Butt-welding Fittings

API SPEC 5L

API SPEC 5L:2018-05, Line Pipe

AD2000 HP 8/3

AD 2000-Merkblatt HP 8/3:2022-03, Manufacture and testing of pressure vessels - Manufacture and testing of fittings made of unalloyed and alloyed steels

AD2000 W2/4/10

AD 2000-Merkblatt A 2:2020-01, Safety devices against excess pressure - Safety valves

EN 10253-1

DIN EN 10253-1:1999-11, Butt-welding pipe fittings - Part 1: Wrought carbon steel for general use and without specific inspection requirements

EN 10253-2

DIN EN 10253-2:2021-11, Butt-welding pipe fittings - Part 2: Non alloy and ferritic alloy steels with specific inspection requirements

EN 10253-3

DIN EN 10253-3:2009-02, Butt-welding pipe fittings - Part 3:

Wrought austenitic and austenitic-ferritic (duplex) stainless steels without specific inspection requirements

EN 10253-4

DIN EN 10253-4:2017-11, Butt-welding pipe fittings - Part 4: Wrought austenitic and austenitic-ferritic (duplex) stainless steels with specific inspection requirements

EN 10216-1

DIN EN 10216-1:2014-03, Seamless steel tubes for pressure purposes - Technical delivery conditions - Part 1: Non-alloy steel tubes with specified room temperature properties

EN 10216-2

DIN EN 10216-2:2023-05, Seamless steel tubes for pressure purposes - Technical delivery conditions - Part 2: Non-alloy and alloy steel tubes with specified elevated temperature properties

EN 10216-3

DIN EN 10216-3:2014-03, Seamless steel tubes for pressure purposes - Technical delivery conditions - Part 3: Alloy fine grain steel tubes

EN 10216-4

DIN EN 10216-4:2014-03, Seamless steel tubes for pressure purposes - Technical delivery conditions - Part 4: Non-alloy and alloy steel tubes with specified low temperature properties

EN 10216-5

DIN EN 10216-4:2014-03, Seamless steel tubes for pressure purposes - Technical delivery conditions - Part 4: Non-alloy and alloy steel tubes with specified low temperature properties

EN 10216-7

DIN EN 10216-4:2014-03, Seamless steel tubes for pressure

purposes - Technical delivery conditions - Part 4: Non-alloy and alloy steel tubes with specified low temperature properties

EN 15804

EN 15804:2012+A2:2019+AC:2021, Sustainability of construction works — Environmental Product Declarations — Core rules for the product category of construction products.

EN ISO 14025

EN ISO 14025:2011, Environmental labels and declarations — Type III environmental declarations — Principles and procedures.

EN ISO 14040/44

EN ISO 14040:2006, Environmental Management – Life Cycle Assessment - Principles and Framework; English version EN ISO 14040:2006

EN ISO 14044:2006, Environment Management – Life Cycle Assessment – Requirements and Instructions; English version EN ISO 14044:2006.

PCR

Steel pipes for pressure applications, 01.08.2021

Further References

Ecoinvent 3.9.1

ecoinvent, Allocation, cut-off by classification, ecoinvent database version 3.9.1 (2022)

IBU 2021

Institut Bauen und Umwelt e.V.: General Instructions for the EPD programme of Institut Bauen und Umwelt e.V., Version 2.0, Berlin: Institut Bauen und Umwelt e.V., 2021
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EPD in Verification