

Angel Hair® Stainless Steel

GB-60™ Stainless Steel

Zahner Materials: Architectural Metal Finishes

Environmental Product Declaration

Date of Issue: 09/12/2025

Date of Expiration: 09/12/2030

PRODUCT CATEGORY RULE

UL Part A: Life Cycle Assessment Calculation Rules and Report Requirements, UL 10010, V4.0

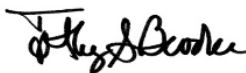

UL Part B: Insulated Metal Panels, Metal Composition Panels, and Metal Cladding: Rood and Wall Panels, UL 10010-5, V2.0

DECLARED UNIT

Coverage of 100 m² (1,076.4 ft²) of building area



ASTM INTERNATIONAL

Program Operator	ASTM International 100 Barr Harbor Dr., West Conshohocken, PA 19428 cert@astm.org	
General Program Instructions and Version Number	ASTM Program Operator Rules. Version: 8.0, Revised 04/29/20	
Manufacturer Name and Address	A. Zahner Company 1400 East 9th Street, Kansas City, MO 64106 info@azahner.com	
Declaration Number	ASTM-EPD1064	
Declared Product and Functional Unit	Steel Wall Panels Declared Unit: Coverage of 100 m ² (1,076.4 ft ²) of building area	
Reference PCR and Version Number	ISO 21930:2017 UL Part A: Part A: Life Cycle Assessment Calculation Rules and Report Requirements, UL 10010, V4.0 UL Part B: Insulated Metal Panels, Metal Composition Panels, and Metal Cladding: Roof and Wall Panels, UL 10010-5, V2.0	
Product's intended Application and Use	Commercial	
Intended Audience	Business-to-Business	
Product RSL	n/a	
Markets of Applicability	North America	
Date of Issue	09/12/2025	
Period of Validity	5 years from date of issue	
EPD Type	Manufacturer Specific	
EPD Scope	Cradle-to-Gate with Options (A1-A3, C1-C4, and D modules)	
Year of reported manufacturer primary data	August 2023 to July 2024	
LCA Software and Version Number	Sphera LCA for Experts 10.9	
LCI Database and Version Number	Sphera MLC 2025.1	
LCIA Methodology and Version Number	TRACI 2.1, CML v4.7 (Aug 2016) and IPCC AR5	
LCIA Results Overview per 100 m² (A1 to A3 modules)		
	Angel Hair® Stainless Steel	GB-60™ Stainless Steel
GWP excluding biogenic carbon [kg CO₂ eq]	3.79E+03	8.63E+04
ODP [kg CFC 11 eq]	3.07E-09	1.97E-08
AP [kg SO₂ eq]	1.82E+01	8.59E+01
EP [kg N eq]	6.21E-01	6.62E+00
SFP [kg O₃ eq]	1.99E+02	1.59E+03
ADP_r [MJ surplus]	4.49E+04	1.06E+06
The sub-category PCR review was conducted by:	Thomas Gloria, PhD (Chair) Lindita Bushi, PhD Bob Zabcik, P.E., LEED AP BD+C	
Independent verification of the declaration and data, according to ISO 21930:2017, UL Part A, ISO 14025:2006, and UL Part B sub-category. <input type="checkbox"/> Internal <input checked="" type="checkbox"/> External	 Tim Brooke, ASTM International	
This life cycle assessment was conducted in accordance with ISO 14044 and the reference PCR by:	WAP Sustainability Consulting	
This life cycle assessment was independently verified in accordance with ISO 14044 and the reference PCR by:	 Thomas Gloria, Ph.D., Industrial Ecology Consultants	
Limitations: <ul style="list-style-type: none"> Environmental declarations from different programs (ISO 14025) may not be comparable. Full conformance with this PCR allows EPD comparability only when all stages of a life cycle have been considered. However, variations and deviations are possible. Example of variations: Different LCA software and background LCI datasets may lead to differences results for upstream or downstream of the life cycle stages declared. 		

General Information

Company Description

Since 1897 and across four generations, the family-owned business of A. Zahner Company produces highly crafted architectural metalwork for artists and architects around the globe. Throughout the company's history, employees at Zahner have developed advanced metal surfaces and systems for both functional and ornamental architectural forms. We enhance the world around us by building on generations of innovation to turn imaginative ideas into incredible realities through the mindful use of crafted metals.

Zahner is committed to protecting the environment and providing a safe and healthy environment for employees, family, and the community at large. The company maintains ecological practices at a local, regional, and national level, and works to protect the planet that we all inhabit.

All products are manufactured at Zahner's Grand Prairie factory in Texas.

Product Descriptions



The **Angel Hair®** Stainless Steel utilizes a patented process for creating a soft, diffuse finish on stainless steel. By etching the metal with precision-controlled techniques, Angel Hair reduces the intense reflectivity of standard finishes while maintaining a refined, lustrous appearance.

This surface is available in sheet and plate in any thickness. The sheet materials come in 48" and 60" typical maximum widths and are available in several alloys based on performance in different environments. Custom shapes and three-dimensional forms are possible with the material.

CSI: 05 70 00; UNSPSC: 30151800, 30151900, 30161500, 30161600



GB-60™ Stainless Steel is Zahner's innovative stainless steel product featuring a non-directional, mechanically achieved finish with ambient reflectivity. Created through precision glass bead blasting, GB-60 produces a soft, satin-like appearance that shifts subtly with light.

Its crystalline surface offers a modern alternative to highly reflective finishes, making it ideal for architectural applications that balance aesthetics and functionality. It is available as a flat sheet good or for specification within a Zahner project.

CSI: 05 70 00; UNSPSC: 30151800, 30151900, 30161500, 30161600

Product Application

Angel Hair Stainless Steel can be used in most exterior applications. Certain horizontal applications, such as exterior counters or seating, are discouraged due to the potential for water to pool and create spotting or other staining effects.

GB-60 Stainless Steel is recommended for interior uses only.

Product Composition

Table 1: Product compositions

Mass %	Angel Hair Stainless Steel	GB-60 Stainless Steel
Stainless steel	100%	100%
Recycled Content ¹	73.8%	73.8%

Technical Requirements

Reference Standard: ASTM A480: Standard Specification for General Requirements for Flat Rolled Stainless and Heat-Resisting Steel Plate, Sheet, and Strip.

Table 2: Technical requirements

Name	Unit	Angel Hair Stainless Steel	GB-60 Stainless Steel
Metal Alloy	-	SS304 or SS316	SS304 or SS316
Length	in	≤ 144	≤ 144
Width	in	≤ 60	≤ 60
Thickness	in	0.075	0.075
Density	kg/m ³	7,689	7,689
Tensile Strength	MPa	515 to 700	515 to 700
Modulus of Elasticity	GPa	200	200

LCA Methodology

Declared Unit

Table 3: Declared unit details

	Unit	Angel Hair Stainless Steel	GB-60 Stainless Steel
Declared unit	m ²	1.00E+02	1.00E+02
Weight	kg	9.76E+02	9.76E+02
Conversion to 1 kg	-	1.02E-03	1.02E-03
Product thickness	in	7.50E-02	7.50E-02

System Boundary

Table 4. Description of the system boundary modules

Production			Construction		Use							End of Life				Benefits & Loads Beyond System Boundary
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Raw Material Supply	Transport	Manufacturing	Transport to Site	Assembly/Install	Use	Maintenance	Repair	Replacement	Refurbishment	Operational Energy Use	Operational Water Use	Deconstruction	Transport	Waste Processing	Disposal	Reuse, Recovery, Recycling Potential
X	X	X	MND	MND	MND	MND	MND	MND	MND	MND	MND	X	X	X	X	X

*MND = not declared

¹ The recycled content amount is based on the average scrap content indicated in the Sphera MLC background datasets and does not represent the actual amount expected in the products.

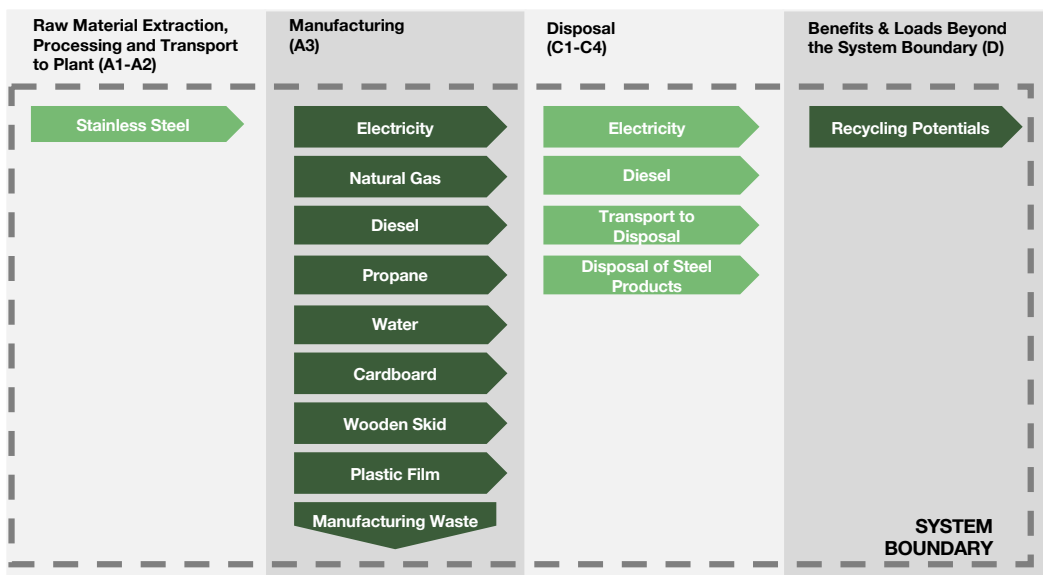


Figure 1: System boundary diagram

Allocation

General principles of allocation were based on ISO 14040/44. To derive a per-unit value for manufacturing inputs such as electricity, thermal energy and water, allocation based on total production by area was adopted, as this is the basis on which products are processed and sold, regardless of product weight. As a default, secondary GaBi datasets use a physical basis for allocation.

Cut-off Rules

Material inputs greater than 1% (based on total mass of the final product) were included within the scope of analysis. Material inputs less than 1% were included if sufficient data was available to warrant inclusion and/or the material input was thought to have significant environmental impact. Cumulative excluded material inputs and environmental impacts are less than 5% based on total weight of the functional unit. No known flows are deliberately excluded from this EPD.

Period Under Review

Data were obtained from Zahner for the period between August 2023 and July 2024.

Technical Information and Scenarios

A3 – Manufacturing

Zahner's Angel Hair® Stainless Steel and GB-60™ Stainless Steel products are manufactured from stainless steel that undergo different metal finishing processes. In the case of Angel Hair, the stainless steel is received in sheet form and go through a sanding process in a CNC machine that applies a non-directional brushed-like finish to the surface. In the case of GB-60, the stainless steel is received in sheet form and go through a blasting process, where compressed-air driven blast media removes surface scale and leaves a non-directional sating finish to the surface. These metal sheets can also be bent into shape for special orders. The products then are packaged and then shipped to the customers.

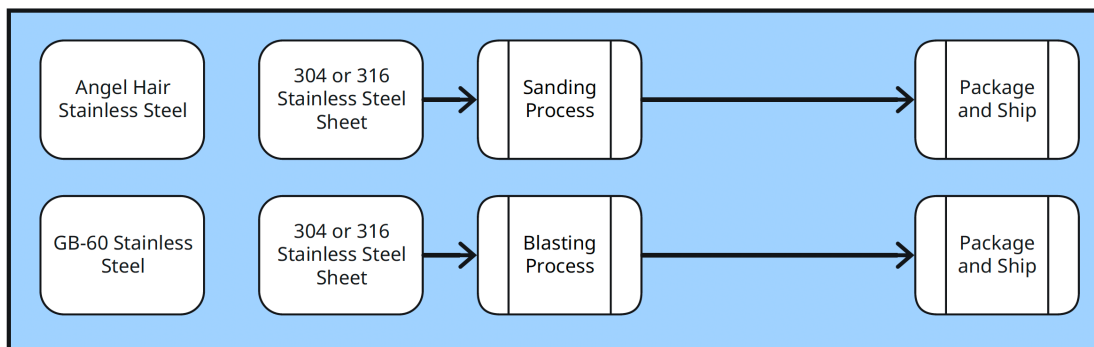


Figure 2: Zahner Stainless Steel Product Manufacturing Process

A3 – Packaging

Packaging requirements are presented in Table 5, per declared unit.

Table 5: Packaging per 100 m²

	Angel Hair Stainless Steel	GB-60 Stainless Steel	Unit
Cardboard	1.59E+01	1.59E+01	kg
Wood Skid	1.40E+02	1.40E+02	kg
Polyethylene Film	8.44E+00	8.44E+00	kg

C1-C4 – End-of-Life

In this stage, the product is deconstructed from the building, which requires an input of 1 gallon of diesel and 2 kWh of electricity as per the PCR default (UL, 2018). The product is then transported to the end-of-life facility and disposed. The transportation to disposal was assumed to be 100 km by truck as per PCR (UL, 2018). The disposal channels for the products are in accordance with disposal routes for “other metals” as referenced in Part A, Section 2.8.5 and 2.8.6 of the PCR (UL, 2018). Specific information related to the disposal of the product at its end of life is reported in Table 6, per declared unit.

Table 6. End-of-life (C1-C4) per 100 m²

Name		Angel Hair Stainless Steel	GB-60 Stainless Steel	Unit
Assumptions for scenario development	Disposal rates as per UL Part A PCR (UL, 2018)	74% recycling, 26% landfill		
Collection process (specified by type)	Collected separately	9.76E+02	9.76E+02	kg
	Collected with mixed construction waste	0.00E+00	0.00E+00	kg
Recovery (specified by type)	Reuse	0.00E+00	0.00E+00	kg
	Recycling	7.23E+02	7.23E+02	kg
	Landfill	2.54E+02	2.54E+02	kg
	Incineration	0.00E+00	0.00E+00	kg
Disposal	Product or material for final deposition	2.54E+02	2.54E+02	kg

Name		Angel Hair Stainless Steel	GB-60 Stainless Steel	Unit
Removals of biogenic carbon (excluding packaging)		0.00E+00	0.00E+00	kg CO ₂

Table 7. Reuse, recovery and/or recycling potentials (D) per 100 m²

Name	Angel Hair Stainless Steel	GB-60 Stainless Steel	Unit
Net energy benefit from energy recovery from waste treatment declared as exported energy in C3 (R>0.6)	0.00E+00	0.00E+00	MJ
Net energy benefit from thermal energy due to treatment of waste declared as exported energy in C4 (R<0.6)	0.00E+00	0.00E+00	MJ
Net energy benefit from material flow declared in C3 for energy recovery	0.00E+00	0.00E+00	MJ
Process and conversion efficiencies	n/a	n/a	-
Further assumptions for scenario development	Recycling credits based on a net scrap approach		

Results

Environmental impacts were calculated using the Sphera LCA for Experts software platform. Impact results have been calculated using IPCC AR5, TRACI 2.1 and CML-baseline, v4.7 August 2016 characterization factors. Results presented in this report are relative expressions and do not predict impacts on category endpoints, the exceeding of thresholds, safety margins, or risks.

Acronym [Unit]	Environmental Indicators	Methodology
GWPe [kg CO ₂ eq]	Global Warming Potential, excl biogenic carbon	IPCC AR5
GWPI [kg CO ₂ eq]	Global Warming Potential, incl biogenic carbon	IPCC AR5
ODP [kg CFC-11 eq]	Ozone Depletion Potential	TRACI 2.1
AP [kg SO ₂ eq]	Acidification Potential	TRACI 2.1
EP [kg N eq]	Eutrophication Potential	TRACI 2.1
SFP [kg O ₃ eq]	Smog Formation Potential	TRACI 2.1
ADP _f [MJ, Surplus]	Abiotic Depletion Potential, Fossil fuels	CML v4.7
Resource Use Indicators		
RPRE [MJ]	Use of renewable primary energy	
RPRM [MJ]	Renewable primary energy resources used as raw materials	
RPRT [MJ]	Total use of renewable primary energy resources	
NRPRE [MJ]	Use of non-renewable primary energy	
NRPRM [MJ]	Non-renewable primary energy resources used as raw materials	
NRPRT [MJ]	Total use of non-renewable primary energy resources	
SM [kg]	Input of secondary material	
RSF [MJ]	Use of renewable secondary fuels	
NRSF [MJ]	Use of non renewable secondary fuels	
RE [MJ]	Recovered energy	
FW [m ³]	Use of net fresh water	
Output Flows and Waste Categories		
HWD [kg]	Hazardous waste disposed	
NHWD [kg]	Non-hazardous waste disposed	
HLRW [kg]	High-level radioactive waste, conditioned, to final repository	
ILLRW [kg]	Intermediate- and low-level radioactive waste, conditioned, to final repository	
CRU [kg]	Components for re-use	
MR [kg]	Materials for Recycling	
MER [kg]	Material for Energy Recovery	
EEE [MJ]	Exported electrical energy	
EET [MJ]	Exported thermal energy	
Carbon Emissions and Removals		
BCRP [kg CO ₂]	Biogenic Carbon Removal from Product	
BCEP [kg CO ₂]	Biogenic Carbon Emissions from Product	
BCRK [kg CO ₂]	Biogenic Carbon Removal from Packaging	
BCEK [kg CO ₂]	Biogenic Carbon Emissions from Packaging	
BCEW [kg CO ₂]	Biogenic Carbon Emissions from Combustion of Waste from Renewable Sources Used in Production Processes	
CCE [kg CO ₂]	Calcination Carbon Emissions	
CCR [kg CO ₂]	Carbonation Carbon Removals	
CWNR [kg CO ₂]	Carbon Emissions from Combustion of Waste from Non-Renewable Sources Used in Production Processes	

LCA Results

Table 8: LCA Results for Angel Hair Stainless Steel, per 100 m² of stainless steel panel

Impact Categories	A1-A3	C1	C2	C3	C4	D
<i>GWP_e [kg CO₂ eq]</i>	3.79E+03	1.53E+01	8.11E+00	0.00E+00	5.76E+00	-1.27E+03
<i>GWP_i [kg CO₂ eq]</i>	3.37E+03	1.53E+01	8.15E+00	0.00E+00	5.75E+00	-1.27E+03
<i>ODP [kg CFC 11 eq]</i>	1.82E+01	1.24E-01	2.27E-02	0.00E+00	3.59E-02	-2.47E+00
<i>AP [kg SO₂ eq]</i>	6.17E-01	8.75E-03	1.94E-03	0.00E+00	4.15E-03	-1.48E-01
<i>EP [kg N eq]</i>	3.07E-09	7.82E-13	3.60E-13	0.00E+00	1.19E-12	3.39E-11
<i>SFP [kg O₃ eq]</i>	1.99E+02	4.28E+00	5.10E-01	0.00E+00	5.14E-01	-2.66E+01
<i>ADP_f [MJ]</i>	4.49E+04	1.92E+02	1.02E+02	0.00E+00	8.23E+01	-1.30E+04
Resource Use Indicators						
<i>RPRE [MJ]</i>	1.07E+04	1.21E+01	4.29E+00	0.00E+00	1.21E+01	4.92E+02
<i>RPRM [MJ]</i>	3.75E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
<i>RPRT [MJ]</i>	1.44E+04	1.21E+01	4.29E+00	0.00E+00	1.21E+01	4.92E+02
<i>NRPRE [MJ]</i>	4.87E+04	1.98E+02	1.03E+02	0.00E+00	8.49E+01	-1.25E+04
<i>NRPRM [MJ]</i>	3.27E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
<i>NRPRT [MJ]</i>	4.90E+04	1.98E+02	1.03E+02	0.00E+00	8.49E+01	-1.25E+04
<i>SM [kg]</i>	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
<i>RSF [MJ]</i>	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
<i>NRSF [MJ]</i>	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
<i>RE [MJ]</i>	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
<i>FW [m³]</i>	1.20E+01	1.42E-02	4.63E-03	0.00E+00	9.25E-03	-1.27E+02
Output Flows and Waste Categories						
<i>HWD [kg]</i>	2.39E-05	3.95E-08	1.71E-08	0.00E+00	2.03E-08	-9.33E-05
<i>NHWD [kg]</i>	3.71E+02	2.40E-02	2.54E+02	0.00E+00	2.54E+02	1.51E+02
<i>HLRW [kg]</i>	1.70E-03	2.60E-06	4.21E-07	0.00E+00	1.06E-06	1.32E-06
<i>ILLRW [kg]</i>	1.46E+00	2.17E-03	3.53E-04	0.00E+00	9.34E-04	1.32E-03
<i>CRU [kg]</i>	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
<i>MR [kg]</i>	1.19E+01	0.00E+00	7.23E+02	0.00E+00	0.00E+00	0.00E+00
<i>MER [kg]</i>	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
<i>EEE [MJ]</i>	2.03E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
<i>EET [MJ]</i>	9.55E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Carbon Emissions and Removals						
<i>BCRP [kg CO₂]</i>	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
<i>BCEP [kg CO₂]</i>	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
<i>BCRK [kg CO₂]</i>	3.36E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
<i>BCEK [kg CO₂]</i>	3.36E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
<i>BCEW [kg CO₂]</i>	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
<i>CCE [kg CO₂]</i>	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
<i>CCR [kg CO₂]</i>	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
<i>CWNR [kg CO₂]</i>	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Table 9: LCA Results for GB-60 Stainless Steel, per 100 m² of stainless steel panel

Impact Categories	A1-A3	C1	C2	C3	C4	D
<i>GWP_e [kg CO₂ eq]</i>	8.63E+04	1.53E+01	8.11E+00	0.00E+00	5.76E+00	-1.27E+03
<i>GWP_i [kg CO₂ eq]</i>	8.59E+04	1.53E+01	8.15E+00	0.00E+00	5.75E+00	-1.27E+03
<i>ODP [kg CFC 11 eq]</i>	1.02E+02	1.24E-01	2.27E-02	0.00E+00	3.59E-02	-2.47E+00
<i>AP [kg SO₂ eq]</i>	6.62E+00	8.75E-03	1.94E-03	0.00E+00	4.15E-03	-1.48E-01
<i>EP [kg N eq]</i>	1.97E-08	7.82E-13	3.60E-13	0.00E+00	1.19E-12	3.39E-11
<i>SFP [kg O₃ eq]</i>	1.59E+03	4.28E+00	5.10E-01	0.00E+00	5.14E-01	-2.66E+01
<i>ADP_f [MJ]</i>	1.06E+06	1.92E+02	1.02E+02	0.00E+00	8.23E+01	-1.30E+04
Resource Use Indicators						
<i>RPRE [MJ]</i>	5.63E+05	1.21E+01	4.29E+00	0.00E+00	1.21E+01	4.92E+02
<i>RPRM [MJ]</i>	3.75E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
<i>RPRT [MJ]</i>	5.67E+05	1.21E+01	4.29E+00	0.00E+00	1.21E+01	4.92E+02
<i>NRPRE [MJ]</i>	1.25E+06	1.98E+02	1.03E+02	0.00E+00	8.49E+01	-1.25E+04
<i>NRPRM [MJ]</i>	3.27E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
<i>NRPRT [MJ]</i>	1.25E+06	1.98E+02	1.03E+02	0.00E+00	8.49E+01	-1.25E+04
<i>SM [kg]</i>	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
<i>RSF [MJ]</i>	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
<i>NRSF [MJ]</i>	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
<i>RE [MJ]</i>	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
<i>FW [m³]</i>	2.12E+02	1.42E-02	4.63E-03	0.00E+00	9.25E-03	-1.27E+02
Output Flows and Waste Categories						
<i>HWD [kg]</i>	1.99E-03	3.95E-08	1.71E-08	0.00E+00	2.03E-08	-9.33E-05
<i>NHWD [kg]</i>	8.90E+02	2.40E-02	2.54E+02	0.00E+00	2.54E+02	1.51E+02
<i>HLRW [kg]</i>	8.15E-02	2.60E-06	4.21E-07	0.00E+00	1.06E-06	1.32E-06
<i>ILLRW [kg]</i>	6.82E+01	2.17E-03	3.53E-04	0.00E+00	9.34E-04	1.32E-03
<i>CRU [kg]</i>	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
<i>MR [kg]</i>	3.65E+02	0.00E+00	7.23E+02	0.00E+00	0.00E+00	0.00E+00
<i>MER [kg]</i>	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
<i>EEE [MJ]</i>	2.03E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
<i>EET [MJ]</i>	9.55E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Carbon Emissions and Removals						
<i>BCRP [kg CO₂]</i>	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
<i>BCEP [kg CO₂]</i>	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
<i>BCRK [kg CO₂]</i>	3.36E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
<i>BCEK [kg CO₂]</i>	3.36E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
<i>BCEW [kg CO₂]</i>	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
<i>CCE [kg CO₂]</i>	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
<i>CCR [kg CO₂]</i>	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
<i>CWNR [kg CO₂]</i>	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Interpretation

The Angel Hair Stainless Steel production stage (A1-A3) is the dominant contributor to environmental impacts across all products, accounting for more than 90% across all categories as shown in Figure 3. Stainless steel is the primary driver, contributing 81% to GWP, due to the resource and energy-intensive nature of its production. Other stages such as end-of-life disposal contribute less than 3% collectively, while the recycling credits represent up to a negative 22% for GWP.

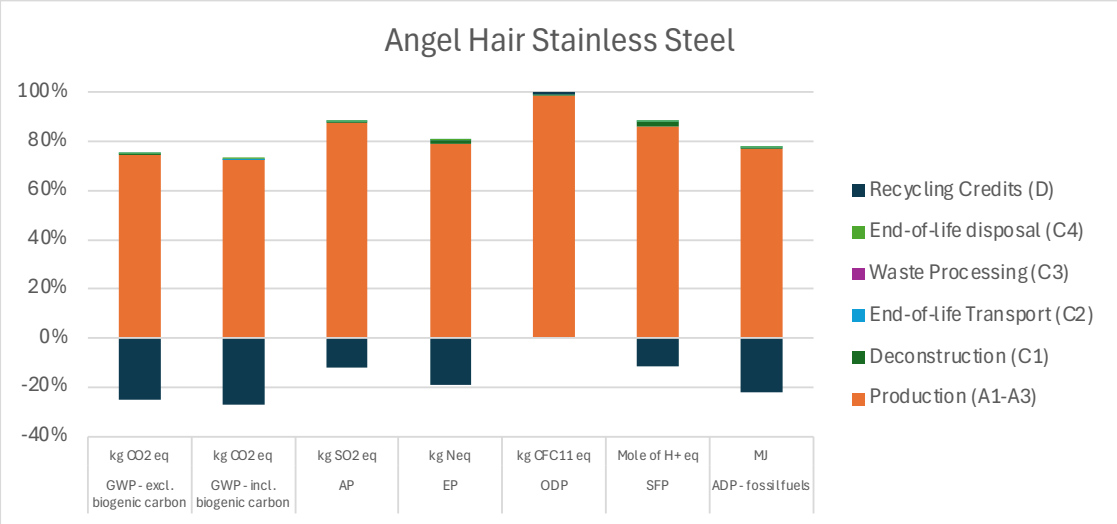


Figure 3: LCIA results for Angel Hair Stainless Steel

The GB-60 Stainless Steel production stage (A1-A3) is the dominant contributor to environmental impacts across all products, accounting for more than 98% across all categories as shown in Figure 4. The electricity used during production (especially the blasting process) is the primary driver, contributing 94% to GWP, but is closely followed by the stainless steel material with 6% (and up to 27% for AP). Other stages such as end-of-life disposal contribute less than 1% collectively, while the recycling credits represent less than 1% across all categories.

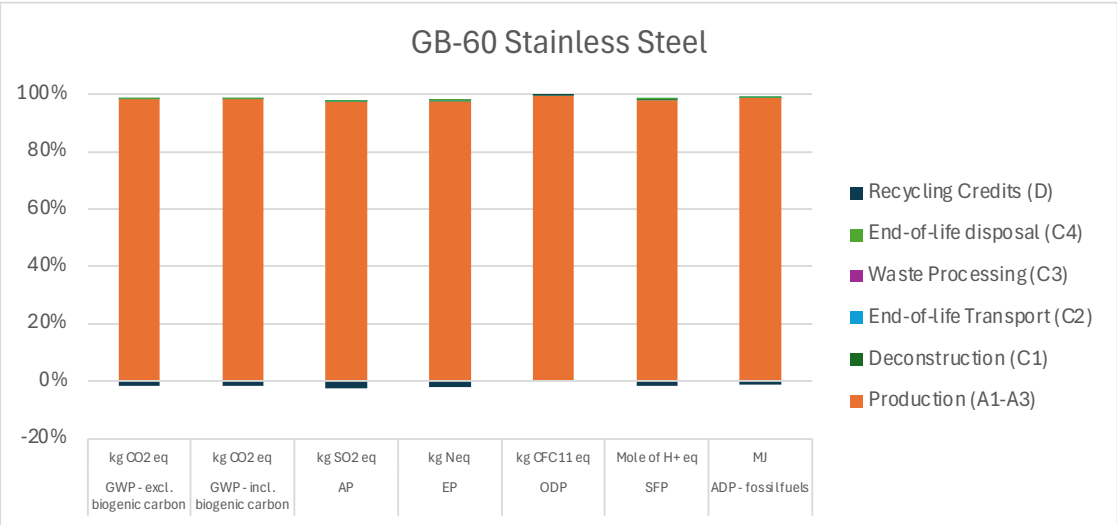


Figure 4: LCIA Results for GB-60 Stainless Steel

Additional Environmental Information

Environment and Health During Manufacturing

Zahner prioritizes environmental sustainability, health, and safety throughout its manufacturing processes. From product design to waste reduction initiatives, Zahner integrates responsible practices to minimize environmental impact. The company is committed to ensuring a safe working environment for its employees and strives to optimize energy and water usage while promoting recycling and responsible disposal practices.

Environment and Health During Installation

All recommendations shall be utilized as indicated by SDS and installation guidelines. Specific product SDS and installation instructions can be requested directly from Zahner. During installation and use, the product does not adversely impact human health or release emissions to indoor air. In addition, no environmental impacts to water, air or soil are expected during product lifetime. The product does not contain any hazardous substances according to the Resource Conservation and Recovery Act (RCRA), Subtitle 3.

Environmental Activities and Certifications

The products are certified Red List Free by the International Living Future Institute. Environmental certifications for Zahner's products such as Declare Labels, HPD, SDS or acoustical performance can be requested directly from Zahner.

Further Information

For more information on these products, go to: <https://www.azahner.com/materials/>.

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