ACME METALS

Manufacturer

ACME Metal Works GmbH

Industrial Park 123
52066 Aachen
DE
quality@acme-metal.example.com

Customer

Engineering Solutions Ltd.

Tech Park Way 45
Cardiff
CF14 5DU
GB
procurement@engisolutions.example.com

Subcustomer

American Heavy Industries Inc.

5000 Industrial Blvd
Building C
Detroit, MI 48201
US
materials@heavyind.example.com

Goods Receiver

Canadian Construction Corp

777 Construction Ave
Toronto, ON M5H 2N2
CA
logistics@canconstruct.example.ca

Digital Material Passport

ID	DMP-METAL-002	*Version*	1.0.0
Issue Date	2025-05-14	*Certificate Type*	EN 10204 3.1

Business Transaction

Order		**Delivery**	
Order ID	PO-78902	*Delivery ID*	DN-56790
Position	10	*Position*	1
Date	2025-04-21	*Date*	2025-05-13
Quantity	2000 kg	*Quantity*	2000 kg

Product Information

Product Name	Structural Steel S420N
Batch ID	H-10988-01

Heat Treatment

Process: Normalizing | **Lot:** NORM-2024-0823-A12 | **Charge:** NF-789

Furnace: NF-LINE-02 | **Date:** 2024-08-23 | **Operator:** H. Mueller

Stage	Temperature	Duration	Cooling	Atmosphere
Austenitizing	920 C +/-15C	60 min		Air
Cooling	20 C		Air 15°/	

Bundling: 20 items, stacked, 8500 kg

Certification: DIN-EN-ISO-9001

Surface Condition	Hot-rolled
Production Date	2025-05-10
Country of Origin	DE

Product Norms

Designation	EN 10025-3 (2019)
Grade	S420N

Material Designations

System	EN
Designation	1.8902

Product Shape

Form	Plate
Length	6000 mm
Width	2000 mm
Thickness	25 mm

Chemical Analysis

Heat Number	H-10988
Melting Process	EAF+LF+VD
Casting Date	2025-05-09
Casting Method	ContinuousCasting
Sample Location	Ladle

Elements

Symbol	**C**	**Mn**	**Si**	**P**	**S**	**CEV**
Unit	%	%	%	%	%	%
Min	-	-	-	-	-	-
Max	0.2	1.6	0.5	0.025	0.015	0.44
Actual	0.16	1.48	0.28	0.016	0.01	0.41

Formula Definitions

CEV = C+Mn/6+(Cr+Mo+V)/5+(Ni+Cu)/15: 0.41 %

Mechanical Properties

Property	*Symbol*	*Actual*	*Minimum*	*Maximum*	*Method*	*Status*
Tensile Strength Test temperature: 20°C Specimen: 1/4T, L					EN ISO 6892-1	✓

Individual Values	#1	#2	#3
Value [MPa]	558	562	560

Statistics	**Mean**	**Min/Max**	**Std Dev**
EN ISO 6892-1 statistical analysis	560.0	558 / 562	2.0 (Sample)

Yield Strength Test temperature: 20°C, 3 specimens tested					EN ISO 6892-1	✓

Individual Values	#1	#2	#3
Value [MPa]	442	445	448

Statistics	**Mean**	**Min/Max**	**Std Dev**
EN ISO 6892-1 statistical analysis	445.0	442 / 448	3.0 (Sample)

Elongation after fracture Gauge length 5.65#S_0, 3 specimens tested					EN ISO 6892-1	✓

Individual Values	#1	#2	#3
Value [%]	23	24	25

Statistics	**Mean**	**Min/Max**	**Std Dev**
EN ISO 6892-1 statistical analysis	24.0	23 / 25	1.0 (Sample)

Reduction of Area 3 specimens tested					EN ISO 6892-1	✓

Individual Values	#1	#2	#3
Value [%]	60	62	64

Statistics	**Mean**	**Min/Max**	**Std Dev**
EN ISO 6892-1 statistical analysis	62.0	60 / 64	2.0 (Sample)

Charpy V-notch Impact Energy Test temperature: -20°C Specimen: 1/2T, T-L					EN ISO 148-1	✓

Individual Values	#1	#2	#3
Value [J]	56	58	60

Statistics	**Mean**	**Min/Max**	**Std Dev**
EN ISO 148-1 statistical analysis	58.0	56 / 60	2.0 (Sample)

Brinell Hardness Ball: 10mm, Force: 3000kg, 5 indentations					EN ISO 6506-1	✓

Individual Values	#1	#2	#3	#4	#5
Value [HBW]	183	185	187	184	186

Statistics	**Mean**	**Min/Max**	**Std Dev**
EN ISO 6506-1 statistical analysis	185.0	183 / 187	1.58 (Sample)

Vickers Hardness 10 kg load, 5 indentations					EN ISO 6507-1	✓

Individual Values	#1	#2	#3	#4	#5
Value [HV10]	192	195	198	194	196

Statistics	**Mean**	**Min/Max**	**Std Dev**
EN ISO 6507-1 statistical analysis	195.0	192 / 198	2.35 (Sample)

Rockwell Hardness	HR	18 HRC	22	EN ISO 6508-1	✓
Elastic Modulus	E	210 GPa		EN ISO 6892-1	✓
Strain Hardening - Exponent	n	0.18		ASTM E646	✓

Validation

We hereby certify that the material described above has been manufactured and tested in accordance with the requirements of EN 10204:2004 type 3.1 and the specified standards. The results comply with the requirements.

Validated By

Name	*Title*	*Department*	*Date*
Johann Weber	Quality Inspector	Quality Assurance	2025-05-14

Data schema maintained by Material Identity. https://schemas.materialidentity.org/metals-schemas/v0.1.0/schema.json