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

Product Norms

Standard	EN 10025-3 (2019)
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Material Designations

Name (EN)	1.8902
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Product Shape

Form	Plate
Length	6000 mm
Width	2000 mm
Thickness	25 mm

Heat Treatment

Process	Lot	Furnace	Date	
Normalizing	NORM-2024-0823-A12	NF-LINE-02	2024-08-23	
Stages				
Stage	Temperature	Duration	Cooling	Atmosphere
Austenitizing	920 C	60 min	Air	Air
Cooling	20 C			

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	558 / 562		2 (Sample)

Yield Strength Test temperature: 20°C, 3 specimens tested					EN ISO 6892-1	✓
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Individual Values		# 1	# 2	# 3
Value [MPa]		442	445	448
Statistics	Mean	Min/Max		Std Dev
EN ISO 6892-1 statistical analysis	445	442 / 448		3 (Sample)

Elongation after fracture Gauge length 5.65#S ₀ , 3 specimens tested					EN ISO 6892-1	✓
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Individual Values		# 1	# 2	# 3
Value [%]		23	24	25
Statistics	Mean	Min/Max		Std Dev
EN ISO 6892-1 statistical analysis	24	23 / 25		1 (Sample)

Reduction of Area 3 specimens tested					EN ISO 6892-1	✓
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Individual Values		# 1	# 2	# 3
Value [%]		60	62	64
Statistics	Mean	Min/Max		Std Dev
EN ISO 6892-1 statistical analysis	62	60 / 64		2 (Sample)

Charpy V-notch Impact Energy Test temperature: -20°C Specimen: Top, T-L					EN ISO 148-1	✓
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Individual Values		# 1	# 2	# 3
Value [J]		56	58	60
Statistics	Mean	Min/Max		Std Dev
EN ISO 148-1 statistical analysis	58	56 / 60		2 (Sample)

Charpy V-notch Impact Energy Test temperature: -20°C Specimen: Bottom, T-L					EN ISO 148-1	✓
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Individual Values		# 1	# 2	# 3
Value [J]		54	57	59
Statistics	Mean	Min/Max		Std Dev
EN ISO 148-1 statistical analysis	56.7	54 / 59		2.5 (Sample)

Brinell Hardness Ball: 10mm, Force: 3000kg, 5 indentations					EN ISO 6506-1	✓
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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	183 / 187		1.58 (Sample)		

Vickers Hardness 10 kg load, 5 indentations					EN ISO 6507-1	✓
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Individual Values		# 1	# 2	# 3	# 4	# 5
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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

<i>Name</i>	<i>Title</i>	<i>Department</i>	<i>Date</i>
Johann Weber	Quality Inspector	Quality Assurance	2025-05-14

Data schema maintained by [Material Identity](https://schemas.materialidentity.org/metals-schemas/v0.1.1/schema.json). <https://schemas.materialidentity.org/metals-schemas/v0.1.1/schema.json>