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Digital Material Passport

<i>ID</i>	DMP-METAL-002	<i>Version</i>	1.0.0
<i>Issue Date</i>	2025-05-14	<i>Certificate Type</i>	EN 10204 3.1

Business Transaction

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

Product Information

<i>Product Name</i>	Structural Steel S420N
<i>Batch ID</i>	H-10988-01
<i>Surface Condition</i>	Hot-rolled
<i>Production Date</i>	2025-05-10
<i>Country of Origin</i>	DE

Product Norms

<i>Standard</i>	EN 10025-3 (2019)
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Material Designations

<i>Name (EN)</i>	1.8902
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Product Shape

<i>Form</i>	Plate
<i>Length</i>	6000 mm
<i>Width</i>	2000 mm
<i>Thickness</i>	25 mm

Heat Treatment

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

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					EN ISO 6892-1	✓
Test temperature: 20°C						
Specimen: 1/4T, L						
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					EN ISO 6892-1	✓
Test temperature: 20°C, 3 specimens tested						
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					EN ISO 6892-1	✓
Gauge length 5.65#%o, 3 specimens tested						
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					EN ISO 6892-1	✓
3 specimens tested						
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					EN ISO 148-1	✓
Test temperature: -20°C						
Specimen: Top, T-L						
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					EN ISO 148-1	✓
Test temperature: -20°C						
Specimen: Bottom, T-L						
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					EN ISO 6506-1	✓
Ball: 10mm, Force: 3000kg, 5 indentations						
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	3 / 4	183 / 187		1.58 (Sample)	
Vickers Hardness					EN ISO 6507-1	✓
10 kg load, 5 indentations						
Individual Values	# 1	# 2	# 3	# 4	# 5	

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/v0.1.1/schema.json>