



Customer

Engineering Solutions Ltd.

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

Goods Receiver

Canadian Construction Corp

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

Manufacturer

ACME Metal Works GmbH

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

Subcustomer

American Heavy Industries Inc.

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

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 | Normalized |
| 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 |
| 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

Mechanical Properties

| Property | Symbol | Actual | Minimum | Maximum | Method | Status |
|--------------------------------|--------|----------|---------|---------|---------------|--------|
| Tensile Strength | Rm | 560 MPa | 520 | 680 | EN ISO 6892-1 | ✓ |
| Yield Strength | ReH | 445 MPa | 420 | | EN ISO 6892-1 | ✓ |
| Elongation after fracture | A | 24 % | 19 | | EN ISO 6892-1 | ✓ |
| Reduction of Area | Z | 62 % | 50 | | EN ISO 6892-1 | ✓ |
| Charpy V-notch Impact - Energy | KV | 58 J | 40 | | EN ISO 148-1 | ✓ |
| Brinell Hardness | HBW | 185 HBW | 150 | 220 | EN ISO 6506-1 | ✓ |
| Vickers Hardness | HV | 195 HV10 | 160 | 230 | EN ISO 6507-1 | ✓ |
| 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 | ✓ |
| Plastic Strain Ratio | r | 1.2 | 1.0 | | EN ISO 10113 | ✓ |
| 0.2% Proof Strength | Rp0.2 | 430 MPa | 400 | | EN ISO 6892-1 | ✓ |

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 |