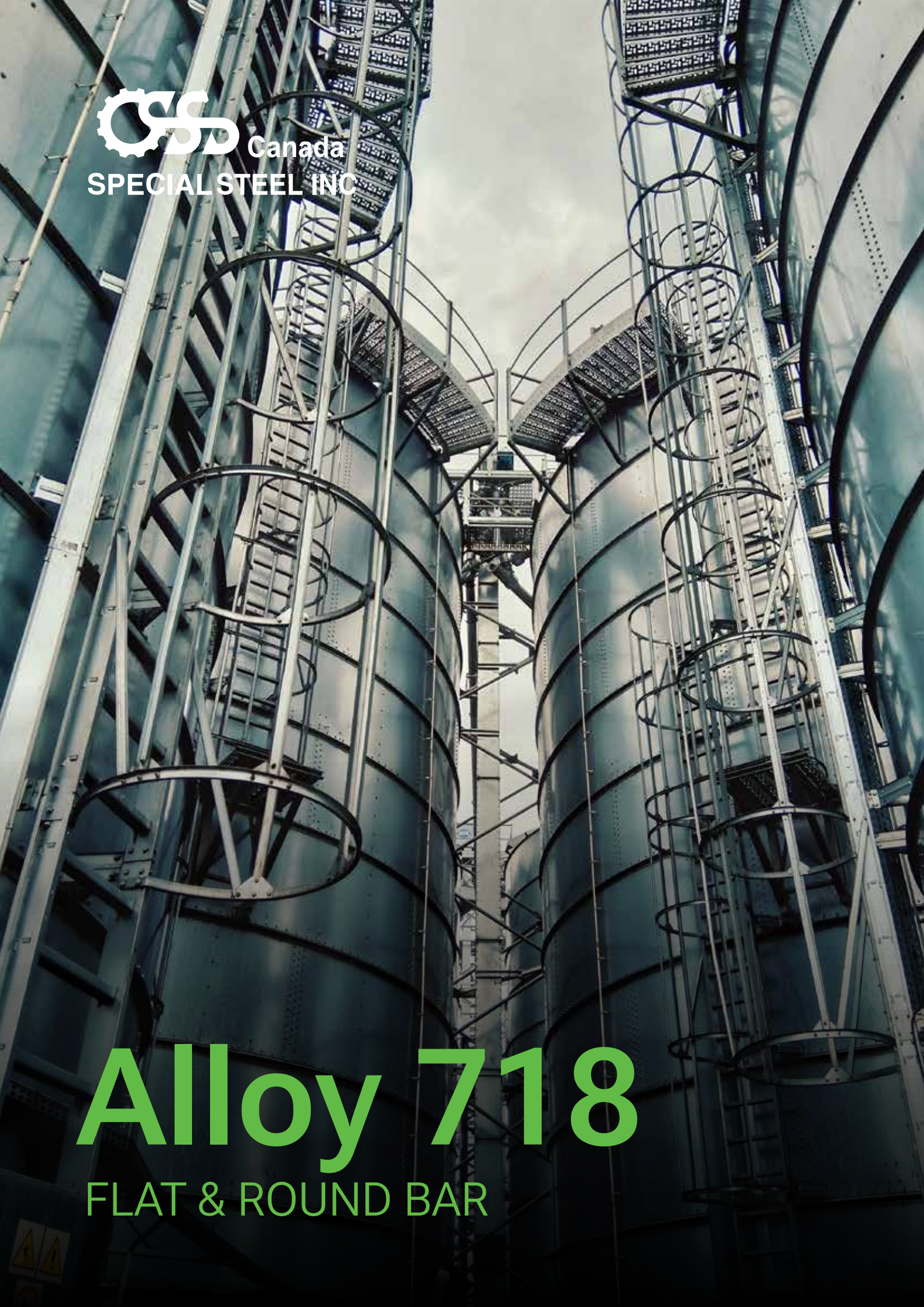

Canada
SPECIAL STEEL INC

Alloy 718

FLAT & ROUND BAR

General information

Alloy 718 is a precipitation-hardening nickel-chromium-iron superalloy, characterized by high strength, excellent corrosion resistance, and exceptional weldability up to 704°C *(1299°F)*. It is widely used in aerospace, oil & gas, and industrial high-temperature applications.

Applications

INDUSTRIAL

Aerospace, Power Generation, Oil & Gas, Chemical Processing, Automotive & Industrial, etc.

Features

HIGH TEMPERATURE STRENGTH

Outstanding creep and rupture strength up to 704°C.

WELDABILITY

Excellent resistance to post-weld cracking.

CORROSION RESISTANCE

Good oxidation resistance up to 980°C; resistant to sour gas (H_2S / CO_2) environments.

Key standards

AMS 5662, 5663, 5664, 5596, 5832 | ASTM B637, B670 | ASME SB637

Material

Alloy 718 / UNS N07718 / 2.4668

Surface

Bright annealed / Polishing

Package

Wooden case / Plywood case

Chemical composition *(Nominal)* %

Grade	C	Si	Mn	P	S	Cr	Ni	Cu
Alloy 718	0.08	0.35	0.35	0.015	0.015	17-21	50-55	0.3

Mo	Ti	Nb	B	Co	Al
2.8-3.3	0.65-1.15	4.75-5.5	0.006	1	0.2-0.8

Physical properties

Density	8.19 g/cm³ *(0.306 lb/in³)*
Hardness	36-44 HRC

Mechanical properties

Heat Treatment	Tensile Strength, min, psi *(MPa)*	Yield Strength, min. *(0.2% offset)*, min, psi *(MPa)*	Elongation in 2 in. *(50 mm)* or 4D, min, %	Reduction of Area, min, %
Solution + precipitation harden	185000 *(1275)*	150000 *(1034)*	12	15

Heat treatment

Recommended Solution Treatment	Precipitation Hardening Treatment
1700 to 1850°F *(924 to 1010°C)*, hold 1/2 h min, cool at rate equivalent to air cool or faster.	1325 ± 25°F *(718 ± 14°C)*, hold at temperature for 8 h, furnace cool to 1150 ± 25°F *(621 ± 14°C)*, hold until total precipitation heat treatment time has reached 18 h, air cool.

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