



LOW ALLOY STEEL · TECHNICAL CATALOG

# LOW ALLOY STEEL

## STAINLESS & ALLOY TUBE

### SPECIFICATIONS

Chrome-Moly Boiler & Pressure Tubing

**4**

GRADES COVERED

**ASTM**

STANDARDS

**100%**

MTC CERTIFIED

**20+**

YRS EXPERIENCE

**BRAVA STAINLESS STEEL**

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**TECHNICAL DATASHEET**

FOR PROFESSIONAL USE

INTRODUCTION

# Low Alloy Steel — Chrome-Moly Boiler & Pressure Tubing

Chrome-molybdenum (Cr-Mo) boiler and superheater tubing for high-temperature, high-pressure service. The backbone of fossil power generation, refining, and petrochemical heater applications.

## ABOUT BRAVA

BRAVA Stainless Steel is an international distributor specializing in seamless stainless and alloy tubes and pipes. Transformed from a manufacturer with 20+ years of experience in the tube and pipe industry, we bring extensive technical knowledge and industry know-how to every shipment. Our products are sourced through a rigorous three-point validation process (quality, experience, growth) and shipped from warehouses in China, Korea, Australia, and Indonesia — backed by 24/7 customer service.

## GRADES IN THIS BROCHURE

#	GRADE	UNS	STANDARDS
01	<b>T11</b>	K11597	A213/SA213
02	<b>T22</b>	K21590	A213/SA213
03	<b>T9</b>	K90941	A213/SA213
04	<b>T5</b>	K41545	A213/SA213

LOW ALLOY STEEL

# T11

## PRODUCT INFORMATION

T11 tube material is a low-alloy ferritic steel containing carbon, silicon, manganese, nickel, phosphorus, chromium, sulfur, and molybdenum. The 1¼Cr-½Mo composition gives T11 tube material excellent strength and corrosion resistance — popular for boiler tubes, superheaters, and pressure vessels.

## APPLICABLE STANDARDS

- ASTM A213 / ASME SA213

## SIZE RANGE

Outside Diameter (inch)	Wall Thickness (inch)	Length (m)
0.75 – 3.50	0.065 – 0.2161	< 14

## CHEMICAL COMPOSITION (% BY WEIGHT)

Grade	UNS	Standard	C	Mn	P max	S max	Si	Cr	Mo
T11	K11597	A/SA 213	0.05–0.15	0.30–0.60	0.025	0.025	0.50–1.00	1.00–1.50	0.44–0.65

## MECHANICAL PROPERTIES

Grade	UNS	Standard	Tensile Strength (MPa min)	Yield Strength (MPa min)	Elongation (% min)	Hardness (HRB max)
T11	K11597	A/SA 213	415	205	30	85

**Packing Condition:** Polywooden cases. Alternative packing styles available on request to ensure product integrity throughout international transit.

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# T22

## PRODUCT INFORMATION

ASME SA213 Boiler T22 (2¼Cr-1Mo) tube contains manganese, carbon, phosphorus, sulfur, molybdenum, nickel, silicon, and chromium. This combination delivers high corrosion resistance, high-temperature tolerance, and excellent pressure capacity — used heavily in superheaters, reheaters, and high-temperature service.

## APPLICABLE STANDARDS

- ASTM A213 / ASME SA213

## SIZE RANGE

Outside Diameter (inch)	Wall Thickness (inch)	Length (m)
0.75 – 3.50	0.065 – 0.2161	< 14

## CHEMICAL COMPOSITION (% BY WEIGHT)

Grade	UNS	Standard	C	Mn	P max	S max	Si max	Cr	Mo
T22	K21590	A/SA 213	0.05–0.15	0.30–0.60	0.025	0.025	0.50	1.90–2.60	0.87–1.13

## MECHANICAL PROPERTIES

Grade	UNS	Standard	Tensile Strength (MPa min)	Yield Strength (MPa min)	Elongation (% min)	Hardness (HRB max)
T22	K21590	A/SA 213	415	205	30	85

**Packing Condition:** Polywooden cases. Alternative packing styles available on request to ensure product integrity throughout international transit.

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# T9

## PRODUCT INFORMATION

T9 is a 9Cr-1Mo low-alloy steel grade engineered for elevated-temperature service in petroleum refining and petrochemical applications. The high chromium content provides superior oxidation resistance for service in cracker furnaces, reformers, and reactor internals.

## APPLICABLE STANDARDS

- ASTM A213 / ASME SA213

## SIZE RANGE

Outside Diameter (inch)	Wall Thickness (inch)	Length (m)
0.75 – 3.50	0.065 – 0.2161	< 14

## CHEMICAL COMPOSITION (% BY WEIGHT)

Grade	UNS	Standard	C max	Mn	P max	S max	Si	Cr	Mo
T9	K90941	A/SA 213	0.15	0.30–0.60	0.025	0.025	0.25–1.00	8.00–10.00	0.90–1.10

## MECHANICAL PROPERTIES

Grade	UNS	Standard	Tensile Strength (MPa min)	Yield Strength (MPa min)	Elongation (% min)	Hardness (HRB max)
T9	K90941	A/SA 213	415	205	30	89

**Packing Condition:** Polywooden cases. Alternative packing styles available on request to ensure product integrity throughout international transit.

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# T5

## PRODUCT INFORMATION

T5 is a 5Cr-½Mo low-alloy chromium-molybdenum steel commonly used for high-temperature service in the petrochemical industry, particularly in refining process units. Provides good resistance to sulfidation and high-temperature hydrogen attack.

## APPLICABLE STANDARDS

- ASTM A213 / ASME SA213

## SIZE RANGE

Outside Diameter (inch)	Wall Thickness (inch)	Length (m)
0.75 – 3.50	0.065 – 0.2161	< 14

## CHEMICAL COMPOSITION (% BY WEIGHT)

Grade	UNS	Standard	C max	Mn	P max	S max	Si max	Cr	Mo
T5	K41545	A/SA 213	0.15	0.30–0.60	0.025	0.025	0.50	4.00–6.00	0.45–0.65

## MECHANICAL PROPERTIES

Grade	UNS	Standard	Tensile Strength (MPa min)	Yield Strength (MPa min)	Elongation (% min)	Hardness (HRB max)
T5	K41545	A/SA 213	415	205	30	85

**Packing Condition:** Polywooden cases. Alternative packing styles available on request to ensure product integrity throughout international transit.

HOW TO ORDER

# Request a Quote in Three Steps

## 01 · GETTING STARTED

Submit your specifications — grade, ASTM standard, OD, wall thickness, length, quantity, surface finish, and target delivery date. We respond within one business day with our most competitive quote drawn from our global supplier network.

## 02 · SOURCING & QUALITY CHECK

Based on your request, we locate the best options across our global inventories and run them through our rigorous QC process. Our dedicated QC teams in sourcing geographies physically inspect every item before clearance for shipment.

## 03 · GET YOUR PRODUCTS

We prepare packing per your specification and handle every customs document. Mill test certificates accompany each shipment. Your only job is to receive the product on time, in spec, and ready to install.

### CONTACT A BRAVA SPECIALIST

Phone	+1 (636) 591-5760
General Inquiries	info@brava-steel.com
Technical Support	tech@brava-steel.com
Warehouses	China · Korea · Australia · Indonesia
Customer Service	24/7 (US Eastern & Asia-Pacific time zones)
Standard Lead Time	35 – 40 days
Minimum Order Quantity	20 ft (straight tubing)
Documentation	Mill Test Certificate (MTC) included with every shipment

**Disclaimer:** The information in this brochure is provided for general guidance based on industry-standard ASTM/ASME specifications. Actual deliverable products are subject to mill test certificates and the specifications agreed in the purchase order. BRAVA reserves the right to update specifications and dimensions without prior notice. For binding specifications, please request a formal quotation.