



# Електролукс Electrolux Bitola

PORACKA NA KATALOG  
ZA INOX MATERIJALI

Heat-Exchanger &  
Condenser Tubes  
ex Stock



Service



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Ovoj crtez e sopstvenost na Electrolux-Bitola. Bez negovo pismeno odobruvanje istiot nesmee da se prepisuva, umnozuva nitii kopira bez soglasnost od Electroluks vo sproftivno se snosat posledici vo smislana clenovite 163 i 164 od kivicniot zakon R.M. (povreda na avtorsko pravo)



# Електролукс Electrolux Bitola

## Introduction

**Electrolux** is one of the leading manufacturers of High Quality Tubes of Stainless Steel, Nickel Alloys, Titanium and Non Ferrous Metals.

Since more than 10 years the **Electrolux** and Service stores Heat-Exchanger and Condenser Tubes in Carbon Steel, Low Alloy Steel, Aluminium Brass, Admiralty Brass, Copper Nickel and Longitudinal Fin-Tubes.

The following material grades are available in all common sizes:

- ASTM/ASME A/SA 179 / DIN 17175 ST 35.8/1
- ASTM/ASME A/SA 199 T 5 / ASTM/ASME A/SA 213 T 5
- ASTM/ASME A/SA 199 T9 / ASTM/ASME A/SA 213 T 9
- ASTM/ASME A/SA 214
- ASTM/ASME B/SB 111 Alloy 68700 / BS 2871 Part 3 CZ 110
- ASTM/ASME B/SB 111 Alloy 44300 / BS 2871 Part 3 CZ 111
- ASTM/ASME B/SB 111 Alloy 70600 / BS 2871 Part 3 CN 102
- ASTM/ASME B/SB 111 Alloy 71500 / BS 2871 Part 3 CN 107
- Seamless Longitudinal Fin Tubes ASTM A 179/DIN 17175 ST 35.8/1

These material grades are available in fixed lengths upto 19600 mm. Further to the stocking of the material the EL department arranges the testing, cutting, deburring, bending (if applicable), packing and dispatching of the tubes.

The dispatch can be arranged within some hours during the week and within 48 hours during the weekend.

**Electrolux** is your Number one for High Quality Heat-Exchanger tubes ex stock.

We stock the Heat-Exchanger tubes for you -  
You save a lot of money and time !

Please test us - We will solve your delivery requirements !

For enquiries please contact:



# Електролуks Electrolux Bitola

## Stock Sizes and Grades

Tube OD AD	Thickness WS	ASTM A 179	ST 35.8/1 DIN 17175	ASTM A 199/ A 213 T 5	ASTM A 199/ A 213 T 9	ASTM A 214	ASTM B 111 C 687 BS 2871/3 CZ 110	ASTM B 111 C 443 BS 2871/3 CZ 111	ASTM B 111 C 706 BS 2871/3 CN 102	ASTM B 111 C 715 BS 2871/3 CN 107	Tube OD AD	Thickness WS
											in mm	in mm
5/8"	18 SWG						X	X			15,88	1,219
5/8"	18 BWG						X	X			15,88	1,245
5/8"	16 BWG						X	X			15,88	1,651
3/4"	18 BWG						X	X	X (1)	X (1)	19,05	1,245
3/4"	16 SWG						X	X	X (1)	X (1)	19,05	1,626
3/4"	16 BWG	X	X				X	X	X (1)	X (1)	19,05	1,651
3/4"	14 SWG					X	X	X	X (1)	X (1)	19,05	2,032
3/4"	14 BWG	X	X	X			X	X	X (1)	X (1)	19,05	2,108
3/4"	12 BWG	X	X				X	X			19,05	2,769
1"	14 SWG						X	X			25,40	2,032
1"	14 BWG	X	X				X	X			25,40	2,108
1"	13 BWG						X	X			25,40	2,413
1"	12 BWG	X	X	X	X		X	X			25,40	2,769
1"	10 BWG	X	X								25,40	3,404
20 mm	2,00 mm	X (1)	X (1)								20,00	2,00
25 mm	2,00 mm	X (1)	X (1)								25,00	2,00
25 mm	2,50 mm	X (1)	X (1)								25,00	2,50

(1) Average wall thickness

### Tubes are certified as follows:

Carbon Steel:	ASTM/ASME/DIN/BS/NFA
Low Alloy Steel:	ASTM/ASME
Aluminium Brass:	ASTM/ASME/BS
Admiralty Brass:	ASTM/ASME/BS
Copper-Nickel:	ASTM/ASME/BS
Longitudinal Fin Tubes:	DIN

### New Stock Items

ASTM B111 C71500 (Cu-Ni 70/30)  
19,05 mm OD x 1,65 mm wall

Seamless longitudinal Fin Tubes  
57 x 4 mm (75 x 7 mm)

Ovoј crtez e сопственост на Electroflux-Bitola. Bez negovo писмено одобрување истиот не смее да се препишува, умножува нити копира без согласност од Electroflux во спротивно се носат последици во смисла на членовите 163 и 164 од кривичниот закон R.M. (повреда на авторско право)



# Електролукс Electrolux Bitola

## Carbon Steel

STANDARD GRADE	ASTM A 179	ASTM A 192	DIN 17175 ST 35.8/I	BS3059 Part 1 Steel 320	NFA 49-215 TU 37 C
C	0,06 - 0,18	0,06 - 0,18	0,17 max.	0,16 max.	0,18 max.
Mn	0,27 - 0,63	0,27 - 0,63	0,40 - 0,80	0,30 - 0,70	0,30 - 0,80
P	0,035 max.	0,035 max.	0,040 max.	0,040 max.	0,045 max.
S	0,035 max.	0,035 max.	0,040 max.	0,040 max.	0,045 max.
Si		0,25 max.	0,10 - 0,35	0,10 - 0,35	0,05 - 0,27
Cu					0,25 max.
Sn					0,03 max.
Yield Strength N/mm <sup>2</sup>	180 min.	180 min.	215 min.	195 min.	220 min.
Tensile Strength N/mm <sup>2</sup>	325 min.	325 min.	360 - 480	320 - 480	360 - 450
Elongation (%)	35 min.	35 min.	25 min.	25 min.	R <sub>m</sub> (A-2) > 10500 min.
Hardness HRB	72 max.	77 max.			

## Low Alloy Steel

Grade T 5

STANDARD GRADE	ASTM A 213 T 5	ASTM A 199 T 5	DIN 17176 12 CrMo 195	BS3604 Part 1 Type 625	NFA 49-215 TU Z 10 CD 5.05
C	0,15 max.	0,15 max.	0,08 - 0,15	0,15 max.	0,15 max.
Mn	0,30 - 0,60	0,30 - 0,60	0,30 - 0,60	0,30 - 0,60	0,30 - 0,60
P	0,025 max.	0,025 max.	0,025 max.	0,030 max.	0,030 max.
S	0,025 max.	0,025 max.	0,020 max.	0,030 max.	0,030 max.
Si	0,50 max.	0,50 max.	0,50 max.	0,50 max.	0,10 - 0,50
Cr	4,00 - 6,00	4,00 - 6,00	4,00 - 6,00	4,00 - 6,00	4,00 - 6,00
Mo	0,45 - 0,65	0,45 - 0,65	0,45 - 0,65	0,45 - 0,65	0,45 - 0,65
Cu					0,25 max.
Sn					0,030 max.
Al				0,02 max.	
Yield Strength N/mm <sup>2</sup>	min. 205	min. 170	min. 175	min. 170	min. 205
Tensile Strength N/mm <sup>2</sup>	min. 415	min. 415	410 - 540	450 - 600	410 - 560
Elongation (%)	min. 30	min. 30	min. 22	min. 20	min. 22
Hardness HRB	85 max.	85 max.			



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## Aluminium Brass (Alloy 687)

STANDARD GRADE	ASTM B 111 C 68700	BS 2871 / PART 3 CZ 110 (TA)	DIN 17660/1785 CuZn20Al2	NFA 51102 CuZn22Al2	JIS H3300 C 6870 (T)
Cu	76,0 - 79,0	76,0 - 78,0	76,0 - 79,0	76,0 - 79,0	76,0 - 79,0
Al	1,80 - 2,50	1,80 - 2,30	1,80 - 2,30	1,80 - 2,50	1,80 - 2,50
Pb	0,07 max.	0,07 max.	0,07 max.	0,07 max.	0,07 max.
Ni			0,10 max.		
Fe	0,06 max.	0,06 max.	0,07 max.	0,06 max.	0,06 max.
Zn	Rem.	Rem.	Rem.	Rem.	Rem.
As	0,02 - 0,10	0,02 - 0,06	0,02 - 0,035	0,02 - 0,06	0,02 - 0,06
P			0,01 max.		
Mg			0,005 max.		
Mn			0,10 max.		
Total Impurities		0,3 max.	Others Total 0,10 max.	0,03 max.	
Yield Strength N/mm <sup>2</sup>	125 min. (061)		150 - 230 (F39) 120 - 180 (F34)		
Tensile Strength N/mm <sup>2</sup>	345 min. (061)		390 min. (F39) 340 min. (F34)		373 min.
Elongation (%)			45 min. (F39) 55 min. (F34)		40 min.
Hardness Hv5		85 - 110		80 - 130	
Grain Size (mm)	0,010 - 0,045	0,050 max.	0,010 - 0,050	0,010 - 0,045	0,010 - 0,045

## Admiralty Brass (Alloy 443)

STANDARD GRADE	ASTM B 111 C 44300	BS 2871/PART 3 CZ 111 (TA)	DIN 17660/1785 CuZn28Sn1	NFA 51102 CuZn29Sn1	JIS H3300 C 4430 (T)
Cu	70,0 - 73,0	70,0 - 73,0	70,0 - 72,5	70,0 - 73,0	70,0 - 73,0
Sn	0,90 - 1,20	1,00 - 1,50	0,90 - 1,30	0,90 - 1,20	0,90 - 1,20
Pb	0,07 max.	0,07 max.	0,07 max.	0,07 max.	0,07 max.
Ni			0,10 max.		
Fe	0,06 max.	0,06 max.	0,07 max.	0,06 max.	0,06 max.
Zn	Rem.	Rem.	Rem.	Rem.	Rem.
As	0,02 - 0,06	0,02 - 0,06	0,02 - 0,035	0,02 - 0,06	0,02 - 0,06
P			0,01 max.		
Mg			0,005 max.		
Mn			0,10 max.		
Total Impurities		0,30 max.	Others Total 0,10 max.	0,03 max.	
Yield Strength N/mm <sup>2</sup>	105 min. (061)		140 - 220 (F36) 100 - 170 (F32)		
Tensile Strength N/mm <sup>2</sup>	310 min. (061)		360 min. (F36) 320 min. (F32)		314 min.
Elongation (%)			45 min. (F36) 55 min. (F32)		30 min.
Hardness Hv5		80 - 105		80 - 120	
Grain Size (mm)	0,010 - 0,045	0,050 max.	0,010 - 0,050	0,010 - 0,045	0,010 - 0,045

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# Електролуks Electrolux Bitola

## SERVICE

TPS has increased the department for Refinery Shutdown- and Emergency Services.

This department is specialized in the supply of Heat-Exchanger and Condenser Tubes in

- Carbon Steel
- Alloy Steel
- Non Ferrous Metals
- Stainless Steel
- Nickel Alloys and
- Titanium

for urgent requirements and emergency purposes.

The material is either available ex stock for delivery within hours or from special new production within a very short lead time.

"Just in time deliveries" is not only an idiom. It is proved that TPS has served a lot of refineries with quick and excellent deliveries. The result is a tremendous saving in costs and time for the endusers.

A further advantage is that the refinery or the petrochemical plant does not have to keep its own stock for shutdowns and maintenance periods.

As mentioned above, deliveries ex stock can be made within 24 hours during the week and within 48 hours during the weekend.

We have experience with this type of business and therefore we now offer our worldwide "Shutdown Service".

Furthermore we offer a complete service with yearly contracts and estimated quantities for all kinds of Heat-Exchanger tubes used in your plant.

In case you have special questions please do not hesitate to contact us

by phone, by fax or by e-mail:



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## Steps of Working

From cutting up to dispatch



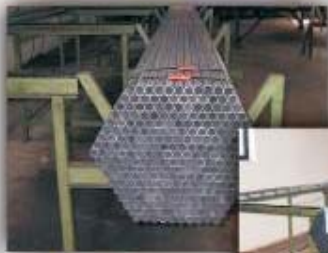
cutting to fix length



deburring outside



deburring inside



packing in hexagonal bundles



packing in seaworthy wooden cases



loading on truck



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## Other EL Products

- Seamless and welded stainless steel tubes and pipes - general information
- Titanium tubes - Seamless and welded
- Non-Ferrous Heat-Exchanger & Condenser tubes
- Extended surface tubes - Fin tubes
- Techniseal - OCTG - Premium coupling connections for tubing and casing
- Multiseal - Two step premium integral tubing connections
- Multiseal - Flush Joint - Two step premium flush joint connections
- Optiflow Connections - High Performance Tubing and Casing Coupling Connections
- API Connections
- Drill Pipe
- OCTG - Grades and Sizes
- Tube & Pipe Sizes - Databook 4th edition



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