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SEAMLESS TUBES FOR BOILER & HIGH TEMPERATURE SERVICE

1. Standards

DIN 17175, EN 10216-2, ASTM A 106, ASTM A179, NF A 49-211, ASTM A210, ASTM A213, ASTM A335

2. Used for

Construction for: boiler, pipe lines, pressure vessels, equipment for high temperature and pressure, equipment for heat-exchanger and condenser.

3. Dimensions

According EN 10216-2 or ASME B36.10M in dimensional range corresponding to the workshop CPE (Tab.1 and Tab.2) or ASSEL (Tab.3) or Cold rolling and drawing (Tab.4)

4. Chemical Composition (%)

Steel Group	C	Si	Mn	P max	S max	Cr	Mo	Ni	Sn
Grade A, TU E275	max 0.25	min 0.10	0.27±0.93	0.035	0.035				
Grade B	max 0.30	min 0.10	0.29±1.06	0.035	0.035				
St35.8, TU E220	max 0.17	0.10±0.35	0.40±0.80	0.040	0.040				
St45.8, TU E250	max 0.21	0.10±0.35	0.40±1.20	0.040	0.040				
P195GH	max.0.13	max.0.35	max.0.70	0.025	0.020	max 0.30	max 0.08	max 0.30	
P235GH	max.0.16	max.0.35	max.1.20	0.025	0.020	max 0.30	max 0.08	max 0.30	
P265GH	max.0.20	max.0.40	max.1.40	0.025	0.020	max 0.30	max 0.08	max 0.30	
16Mo3	0.12±0.20	max.0.35	0.40±0.90	0.025	0.020	max 0.30	0.25±0.35	max.0.30	
13CrMo4-5	0.10±0.17	max.0.35	0.40±0.70	0.025	0.020	0.70 ±1.15	0.40±0.60	max.0.30	
10CrMo9-10	0.08-0.14	max 0.50	0.30±0.70	0.020	0.010	2.0 ±2.50	0.90±1.10	max.0.30	
ASTM A179	0.06±0.18	-	0.27±0.63	0.035	0.035				
Grade A-1	max.0.27	min. 0.10	max. 0.93	0.035	0.035				
T11	0.05-0.15	0.30-0.60	0.30-0.60	0.025	0.025	1.00-1.50	0.44-0.65		
T22	0.05-0.15	0.30-0.60	0.30-0.60	0.025	0.025	1.90-2.60	0.87-1.13		
P5	max. 0.15	max. 0.50	0.30-0.60	max. 0.025	0.025	4.00-6.00	0.45-0.65		
P11	0.05-0.15	0.50-1.00	0.30-0.60	max. 0.025	max. 0.025	1.00-1.50	0.44-0.65		
P22	0.05-0.15	max. 0.50	0.30-0.60	max. 0.025	max. 0.025	1.90-2.60	0.87-1.13		

5. Mechanical Properties

Steel Group	Yield Strength, min.	Tensile Strength	Elongation	Impact	
	N/mm ²	N/mm ²	min. (%)	J	(°C)
Grade A, TU E275	205	min. 330	Calculation acc. to		

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API:
5CT-0440
5L-0352

LR:
ISO 9001
ISO 14001
ISO 45001

TUV:
PED/AD-2000 W0/W4
TRD 100/102
Vd TUV

TUV CPR:
EN 10210-1,2
EN 10255

LR:
DNV-GL Rules
RINA

LR:
IATF 16949

Grade B	240	min 415	the wall thickness		
St35.8, TU E220	235	360÷480	25		
St45.8, TU E250	255	410÷530	21		
P195GH	195	320÷440	27	28	-10
P235GH	225	360÷500	25	28	-10
P265GH	255	410÷570	23	28	-10
16Mo3	270	450÷600	22	40	20
13CrMo4-5	290	440÷590	22	40	20
10CrMo9-10	280	480÷630	22	40	20
ASTM A179	180	325	36	HRB = max 72	
Grade A-1	255	415	30	HRB = max 79	
T11	205	415	30	85HRB/250HBW/170HV	
T22	205	415	30	85HRB/250HBW/170HV	
P5	205	415	30		
P11	205	415	30	-	
P22	205	415	30	-	

6. Lengths

Random lengths or fixed lengths in length range corresponding to the -workshop CPE (Tab.1 and Tab.2) or ASSEL (Tab.3) or Cold rolling and drawing (Tab.4).

7. Protection

- Unprotected;
- external varnished with black or clear lacquer;
- If required, the tubes can be delivered with plastic caps at both ends.

8. Marking

According to standard or per customer request.

9. Delivery

Bundles up to: - 2000 kg (4400 lbs) - cold drawn tubes; - 4000 kg (8800 lbs) - hot rolled tubes.

10. Mill test report

Mill test reports are issued to customer requirements. Usually they comply with DIN 50049, EN 10204.

11. Quality certified:

LR, TUV, PED, GL, MLPTL.

