Boiler Tubes

OMEGA STEEL CO.
Istanbul · Dilovası plant

Boiler tubes are seamless carbon and alloy steel tubes made and certified for pressure at elevated temperature: P235GH and P265GH (EN 10216-2) or A192 / A210 for water-tube and fire-tube boilers, economisers and heat exchangers; 16Mo3, 13CrMo4-5 and 10CrMo9-10 (A335 P11 / P22) for superheaters and steam lines above 400 °C. We supply Ø 25–168 mm in 2–12 mm walls, 6–12 m, hydro- and eddy-current tested, with EN 10204 3.1 / 3.2 and PED certification, from EU mills and approved Asian producers.

EN 10216-2 · A192 / A210 | P235GH · P265GH · 16Mo3 | Ø 25–168 mm | Hydro + ET tested | PED / 3.2

Steam boiler makers in Turkey, Egypt and the Gulf need tubes that carry a PED or ASME stamp, not just a size. We supply boiler tube with the certificate the inspector will ask for — grade, heat, hydrotest, NDT — in the sizes the tube bundles are drawn in.

SEAMLESS PIPE — STOCKED SIZES (KG/M)

NPS	OD (mm)	Wall (mm)	kg/m
½"	21.3	2	0.95
½"	21.3	7.1	2.49
¾"	26.9	2.3	1.4
¾"	26.9	6.3	3.2
1"	33.7	2.6	1.99
1"	33.7	7.1	4.66
1¼"	42.4	3.2	3.09
1½"	48.3	3.2	3.56
1½"	48.3	9.53	9.11
2"	60.3	3.6	5.03
2"	60.3	9.53	11.93
2½"	76.1	3.6	6.44
3"	88.9	4	8.38
4"	114.3	4.5	12.19

First 14 of 19 rows — the full table is on the product page.

EN 10216-1/2 (P235TR2, P235GH) and ASTM A106 Gr. B; other schedules on mill order.

GRADES, STANDARDS AND TOLERANCES

Grade / standard	Yield (MPa)	Note
P235GH (1.0345) — EN 10216-2	235	carbon; boilers to ≈ 400 °C; = A192 / A210 A1
P265GH (1.0425)	265	carbon, higher strength; = A210 C
16Mo3 (1.5415)	275	0.3 % Mo; superheaters to ≈ 500 °C; = A335 P1
13CrMo4-5 (1.7335)	290	1 Cr 0.5 Mo; to ≈ 540 °C; = A335 P11 / A213 T11
10CrMo9-10 (1.7380)	280	2.25 Cr 1 Mo; to ≈ 580 °C; = P22 / T22
X10CrMoVNb9-1 (1.4903)	450	9 Cr; to 620 °C; = P91 / T91, to order

Yield at 20 °C; boiler design uses the elevated-temperature yield (Rp0.2/T) and creep values tabulated in EN 10216-2 / ASME II-D.

WHICH GRADE FOR WHICH TEMPERATURE

Service	Metal temperature	EN grade	ASTM equivalent	Note
Fire-tube (shell) boiler tubes	≤ 350 °C	P235GH	A192 / A210 A1	Ø 51–76 × 3.2–4 typical
Water-tube boiler bank, economiser	≤ 400 °C	P235GH / P265GH	A210 A1 / C	
Low-temperature superheater	400–480 °C	16Mo3	A335 P1 / A209 T1	
Superheater, reheater	480–540 °C	13CrMo4-5	P11 / T11	
High-temperature superheater, main steam	540–580 °C	10CrMo9-10	P22 / T22	
Supercritical / USC	580–620 °C	X10CrMoVNb9-1	P91 / T91	to order; special welding
Heat exchangers, condensers (water side)	≤ 300 °C	P235TR2 / P235GH	A179 / A192	tight wall tolerance

Design to EN 12952-3 / ASME I with the code allowable stress; the grade is fixed by the boiler designer, not the supplier.

TESTING AND DOCUMENTATION

Test / document	Requirement	Standard
Chemical analysis (heat)	every heat	EN 10216-2 Table 1 / ASTM
Tensile at 20 °C	per lot	EN ISO 6892-1
Elevated-temperature yield	on request (3.2)	EN ISO 6892-2
Flattening / flaring / ring test	per lot	EN ISO 8492 / 8493
Hydrostatic test	100 % of tubes	EN 10216-2 §11.8 / A450
Eddy-current or UT	100 % (option 1 / 2)	EN ISO 10893
Wall thickness	100 % on cold-drawn tube	EN ISO 10893-12
Certificate	3.1 standard; 3.2 for code pressure parts	EN 10204
PED / AD 2000 / ASME	material certification per code	notified body

Boiler makers should state the code (EN 12952 / 12953, PED category, ASME I) on the enquiry so the right test scope is ordered at the mill.

STANDARDS

EN 10216-2 — seamless steel tubes for pressure purposes, elevated temperature · ASTM A192 / A210 (carbon boiler), A335 (alloy pipe), A213 (alloy tubes) · EN 12952 / EN 12953 water-tube and shell boilers; ASME Section I · EN 10204 3.1 / 3.2; PED 2014/68/EU; AD 2000-W4