P295GH Boiler Plate

OMEGA STEEL CO.
Istanbul · Dilovası plant

1.0481 · P295GH is the 295 MPa grade of EN 10028-2, the step between P265GH and P355GH: 460–580 MPa tensile, Rp0.2 of 172 MPa at 300 °C, normalised fine-grain, material number 1.0481, formerly DIN 17Mn4, comparable to ASTM A516 Grade 65. It lets a high-pressure boiler or autoclave shell be about 10 % thinner than in P265GH. Rolled or imported to order in 6–100 mm.

1.0481 | Yield ≥ 295 MPa | Rp0.2 at 300 °C ≥ 172 MPa | 6–100 mm to order | PED / AD 2000

P295GH is chosen by designers who have run the P265GH calculation and found the wall a few millimetres too thick — or too heavy to form. With 11 % more yield and a matching elevated-temperature curve it trims the shell without stepping up to the higher carbon and stricter welding of P355GH.

CHEMICAL COMPOSITION

Element	C	Si	Mn	P	S	Al	Cr	Cu	Mo	Ni	N
max. % (ladle)	0.08–0.20	≤ 0.40	0.90–1.50	≤ 0.025	≤ 0.010	≥ 0.020	≤ 0.30	≤ 0.30	≤ 0.08	≤ 0.30	≤ 0.012

Nb ≤ 0.020, Ti ≤ 0.03, V ≤ 0.02; Cr + Cu + Mo + Ni ≤ 0.70. CEV up to 0.45.

YIELD AT TEMPERATURE — THE VALUES A VESSEL IS DESIGNED ON

Thickness	Yield ReH min (MPa)	Tensile Rm (MPa)	Elongation A min	Impact KV
≤ 16 mm	295	460–580	22 %	27 J at +20 °C (40 J long.)
> 16–40 mm	290	460–580	22 %	27 J at +20 °C
> 40–60 mm	285	460–580	22 %	27 J at +20 °C
> 60–100 mm	260	450–570	21 %	27 J at +20 °C
Rp0.2 at 100 / 200 / 300 / 400 °C (≤ 16 mm)	250 / 209 / 172 / 147	—	—	—

P295GH IN OTHER STANDARDS

System	Grade	Note
DIN 17155	17Mn4	direct predecessor
ASTM	A516 Gr. 65	240 MPa yield, 450–585 tensile
JIS G3115	SPV315	
GB 713	Q345R (near)	
BS 1501	224-460	historic

THICKNESS RANGE AND STOCK SIZES

Thickness	Widths × lengths	Availability
6–12 mm	2 000 × 6 000	to order 2–4 weeks
15–40 mm	2 000 / 2 500 × 6 000–12 000	to order 2–4 weeks
50–100 mm	2 000–2 500 × 6 000	to order 4–6 weeks, UT

STANDARDS

EN 10028-2:2017 — P295GH, 1.0481 · DIN 17155 — 17Mn4 (withdrawn) · PED 2014/68/EU; AD 2000 W1 · EN 10160 UT; EN 10029 class A/B