HRPO Steel — Pickled and Oiled

OMEGA STEEL CO.
Istanbul · Dilovası plant

HRPO is hot-rolled coil that has been pickled in hydrochloric acid to remove the mill scale and lightly oiled against rust: a grey-metallic, clean, formable surface at hot-rolled prices, in 1.35–6.0 mm. The substrate is S235JR (ST37) for general use or DD11–DD14 for forming, from Erdemir and Tosyalı. It is the strip for tube mills, roll-formers, press shops and anything that will be painted without blasting. We stock 1.35–6.0 mm at Dilovası as coil, cut sheet and slit strip.

1.35–6.0 mm stock | S235JR · DD11–DD14 | Scale-free, oiled | Coil · sheet · slit strip | Tube & roll-forming grade

Asitli sac, HRP, pickled-and-oiled: the hot-rolled sheet that arrives ready to work. No scale to flake off in the press, no blasting before paint, a surface a tube mill or a roll-former can run at full speed. Between 1.5 and 4 mm it replaces cold-rolled sheet in most industrial parts at a lower price per ton, and it is the second-largest flat-product stock in our Dilovası hall.

CHEMICAL COMPOSITION

Element	S235JR: C	S235JR: Mn	S235JR: P / S	DD11: C	DD11: Mn	DD11: P / S
max. % (ladle)	0.17	1.40	0.035 / 0.035	0.12	0.60	0.045 / 0.045

Pickling does not change the chemistry; the certificate carries the substrate grade with the note "pickled and oiled".

MECHANICAL PROPERTIES OF THE SUBSTRATES

Substrate	Yield (MPa)	Tensile (MPa)	Elongation	Use
S235JR (ST37)	≥ 235	360–510	≥ 26 % (A5) / 19 % (A80)	general, tubes, welded parts
DD11	170–340	≤ 440	≥ 28 % (A80)	bending, roll-forming
DD12	170–320	≤ 420	≥ 30 %	drawing
DD13	170–310	≤ 400	≥ 33 %	deep drawing
DD14	170–290	≤ 380	≥ 36 %	extra-deep drawing
S355MC	≥ 355	430–550	≥ 19 %	high-strength forming

EQUIVALENT GRADES

System	Grade	Note
Trade	HRPO / P&O / HRP / asitli sac	same condition
ASTM	A1011 HRPO (CS / DS / SS grades)	US designation
JIS	SPHC-P / SPHD-P	pickled hot-rolled
EN	S235JR+P&O, DD11+P&O	certificate wording
Cold-rolled	DC01	cleaner, tighter gauge, thinner, dearer

PICKLING, OILING AND SURFACE

Condition	Process	Surface	Best for
Black (HR, as-rolled)	none — mill scale left on	blue-black oxide, 10–40 µm, flakes when bent	welded structures, plate to be blasted, hidden parts
HRPO (pickled & oiled)	HCl pickling of coil, rinse, light oil	uniform grey-metallic, scale-free, Ra ≈ 1–3 µm	forming, painting, roll-forming, tube making, visible parts
HRP / HRPO skin-passed	pickling + temper pass	flatter, tighter gauge, no Lüders lines	pressing, blanking, precision parts
Dry (pickled, unoiled)	pickling, no oil	bare, rusts within days	immediate galvanizing or welding only

Turkish trade names: siyah sac = black hot-rolled, HRP / asitli sac = pickled and oiled. The steel grade underneath (S235JR, DD11 and so on) is identical — only the finish differs, and only the finish is priced.

STANDARDS

EN 10025-2 S235JR / EN 10111 DD11–DD14 (substrate) · EN 10051 — dimensions and tolerances of hot-rolled strip · EN 10163-2 — surface class · EN 10204 3.1