DD14 Steel

OMEGA STEEL CO.
Istanbul · Dilovası plant

1.0389 · DD14 is the top grade of EN 10111 hot-rolled forming steel: carbon ≤ 0.08 %, manganese ≤ 0.35 %, yield 170–290 MPa, tensile ≤ 380 MPa, elongation ≥ 36 %, non-ageing — for the deepest and most complex hot-rolled pressings, where DD13 necks or splits. Material number 1.0389. Pickled and oiled coil and blanks 1.5–6 mm, rolled to order by Turkish and EU mills.

1.0389 | Yield 170–290 MPa | A80 ≥ 36 % | Non-ageing | 1.5–6 mm to order

DD14 is the hot-rolled sheet for parts that are drawn twice: a deep cylinder half with a re-drawn neck, a wheel disc with a pressed hub, a drawn housing with a flange on top. It is a specialist grade, ordered by heat, and we handle it as a project item with blanks cut to your size.

CHEMICAL COMPOSITION

Element	C	Mn	P	S
max. % (ladle)	0.08	0.35	0.025	0.025

Typical heat: C 0.02–0.03, Mn 0.15–0.25, Al 0.03–0.06.

MECHANICAL PROPERTIES AND DEEP-DRAWING BEHAVIOUR

Property	Requirement	Typical value	Note
Yield strength ReH	170–290 MPa (≤ 310 below 2 mm)	180–240 MPa	
Tensile strength Rm	≤ 380 MPa	290–340 MPa	
Elongation A80	≥ 36 %	38–44 %	
r / n (typical)	not specified	≈ 1.4 / 0.21	
Bend radius	0 × t	passes	
Ageing	non-ageing 6 months	guaranteed	

EQUIVALENT GRADES

System	Grade	Note
DIN 1614-1 (old)	StW 24 (special)	historic German
EN 10111 (1998)	DD14	previous edition
JIS G3131	SPHF	
ASTM A1011	EDDS (hot-rolled)	
GB/T 3273 / 5213	SPHF	

SURFACE AND OILING ON THE DEEPEST-DRAWING HOT-ROLLED GRADE

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

DD14 is bought pickled, oiled and skin-passed; there is no sensible reason to draw a 30 %-elongation grade through mill scale. Dry (unoiled) delivery only makes sense when the part goes straight to galvanizing.

STANDARDS

EN 10111:2008 — DD14, 1.0389 · EN 10051 — tolerances · EN 10204 3.1 · Former EN 10111 (1998) DD14