S355J2WP Corten Sheet

OMEGA STEEL CO.
Istanbul · Dilovası plant

1.8946 · EN 10025-5 · S355J2WP is the phosphorus-alloyed weathering steel of EN 10025-5 — the European Corten A: 355 MPa yield, 27 J at −20 °C, and a copper–chromium–phosphorus chemistry that grows a stable, self-protecting rust patina instead of scaling away. It is the sheet of rusted façades, garden edging, planters, sculptures and signage, in 1–10 mm. We stock 1.5–6 mm at Dilovası and laser-cut it to drawings; the patina forms on site in 6–18 months.

1.8946 · EN 10025-5 | Corten A class | Cu · Cr · P alloyed | 1–10 mm sheet | Laser-cut to DXF

The orange-brown that architects want is S355J2WP: not paint, not a coating, but the steel itself protecting itself. We keep it in the sheet gauges that façade and landscape fabricators use and cut it to the pattern files they send.

CHEMICAL COMPOSITION

Element	C	Si	Mn	P	S	Cr	Cu	Ni	N
max. % (ladle)	≤ 0.12	≤ 0.75	≤ 1.00	0.06–0.15	≤ 0.035	0.30–1.25	0.25–0.55	≤ 0.65	≤ 0.009

The high phosphorus is intentional (patina quality) and is what separates the WP grades from S355J2W (P ≤ 0.035). Maximum thickness 12 mm by the standard.

MECHANICAL PROPERTIES

Property	Requirement	Typical value	Note
Yield strength ReH	≥ 355 MPa	380–430 MPa	≤ 16 mm
Tensile strength Rm	470–630 MPa	500–560 MPa	
Elongation A	≥ 22 %	24–30 %	L0 = 5.65 √S0
Charpy V	≥ 27 J at −20 °C	> 60 J	J2
Bendability	1 × t (≤ 3 mm), 1.5 × t above		good
Corrosion rate (C3 atmosphere, after patina)	—	2–5 µm/year	plain steel: 20–40 µm/year

EQUIVALENT GRADES

System	Grade	Note
EN 10025-5	S355J2WP (1.8946)	the standard
Trade name	Corten A / COR-TEN A	US Steel / ArcelorMittal (Indaten)
ASTM	A242 Type 1	plate, approx.
ASTM	A606 Type 4	sheet and strip, approx.
JIS G3125	SPA-H	
GB/T 4171	Q355GNH	Chinese
Lower-P plate grade	S355J2W (Corten B)	for structures

HOW THE PATINA DEVELOPS

Time	Appearance	What is happening	Run-off staining
Delivery	blue-grey mill scale or grey blast	no patina; keep dry and oil-free	—
1–4 weeks	bright orange, patchy	first porous rust forms	heavy — protect paving
2–6 months	even orange-brown	Cu/Cr/P start densifying the inner layer	moderate
6–18 months	deep brown, matt	stable adherent patina	light
2–5 years	chocolate to purple-brown	corrosion rate drops to a few µm/year	negligible
Sheltered / never wet	stays orange, dusty	no stable patina without wet-dry cycles	ongoing

Pre-weathering (accelerated with salt-free wet-dry cycling or a chloride-free activator) gives an even patina before installation; we can supply pre-weathered panels to order. Blasting the mill scale off (Sa 2) gives the most uniform result.

STANDARDS

EN 10025-5 — S355J2WP (1.8946), S355J0WP (1.8945) · ASTM A242 Type 1 (approx.), ASTM A606 Type 4 (sheet) · EN 10051 / EN 10029 tolerances · EN 10204 3.1

Updated 22 September 2026 · figures are nominal; the mill certificate governs