Guardrail Posts (Sigma / Omega)

OMEGA STEEL CO.
Istanbul · Dilovası plant

Cold-roll-formed and hot-dip galvanized posts for W-beam and thrie-beam highway guardrail: sigma (Σ) posts 100 × 55 × 3 and 4 mm — the European EN 1317 standard —, omega (hat) posts, C posts 125 × 62.5 mm (AASHTO / US pattern) and U / UPN 100 posts, lengths 1 500–2 200 mm, punched for the rail bolt and spacer, with plastic or steel caps, base plates for bridges and concrete, sold as posts only or as complete systems with rails, spacers and fasteners; roll-formed, punched and galvanized to EN ISO 1461 ≥ 550 g/m² for road contractors in Iraq, the Gulf, Africa, Central Asia and the Balkans.

Sigma 100×55×3 / 4 mm | Omega · C 125×62.5 · U 100 | 1 500 – 2 200 mm | HDG ≥ 550 g/m² | Punched · capped · own line

The post is what makes a guardrail a barrier: it takes the impact into the ground while the rail spreads it. We roll sigma, omega and C posts from S235JR / S355JR strip on our own line, punch the rail and spacer holes, cut to 1.5–2.2 m and hot-dip galvanize them — as replacement posts for existing lines, or with W-beam and thrie-beam rails as a tested system per kilometre.

POST TYPES, SIZES AND WEIGHT

Post	Section (mm)	Thickness	Length	kg per post (galv.)	System	Note
Sigma post	100 × 55 (Σ, web 100, flange 55)	3.0 mm	1 500 / 1 900 / 2 000	≈ 11 / 13.5 / 14.5	EN 1317 N2 W-beam	most ordered — European standard
Sigma post heavy	100 × 55	4.0 mm	1 900 / 2 000 / 2 200	≈ 18 / 19 / 21	EN 1317 H1 / thrie-beam / median	double-sided, high wind, bridges
Omega post	100 × 50 hat, feet 2 × 25	3.0 / 4.0 mm	1 800 / 2 000	≈ 13 / 17.5	national specs, median barriers	stiffer than sigma, same drive
C post (US pattern)	125 × 62.5 (5" × 2½")	4.5 / 6.0 mm	1 830 (6 ft) / 2 000	≈ 19 / 25	AASHTO M180, NCHRP 350	Iraq, Africa, older KSA specs
U post	UPN 100 / 120	6.0 / 7.0 mm	1 800 / 2 000	≈ 19 / 27	heavy / legacy systems	hot-rolled, not roll-formed
Base-plated post	sigma 4 mm or IPE 100 on 200 × 200 × 10 plate	—	600–1 200	≈ 12–22	bridges, parapets, concrete	4 × M16 anchors

Standard punching: two slotted holes 18 × 25 mm for the rail bolt and spacer at 550 / 640 mm from the top (EN) or 4 holes (AASHTO); cap holes; custom patterns to drawing. Ground line marked.

SIGMA VS C VS OMEGA — WHICH POST FOR WHICH SYSTEM

	Sigma 100×55×3	Sigma 100×55×4	C 125×62.5×6	Omega 100×4
Weight	≈ 14.5 kg	≈ 19 kg	≈ 25 kg	≈ 17.5 kg
Standard	EN 1317 N2	EN 1317 H1 / H2 (with thrie)	AASHTO / NCHRP 350	National / median
Post spacing	2.0 m (4.0 m light)	1.33–2.0 m	1.905 m (6 ft 3 in)	2.0 m
Driving	Pile driver, easy	Pile driver	Pile driver, heavier	Pile driver
Behaviour on impact	Yields at ground line	Yields, higher containment	Rigid, more damage to vehicle	Stiffer than sigma
Spacer	Sigma spacer 100×55×3 × 350	Sigma / W spacer	C block or timber	Omega spacer
Price index	1.00	1.30	1.65	1.20
Choose for	EN-spec roads, most exports	Medians, bridges, high wind	US-spec tenders	Where the national spec says omega

QUANTITIES PER KILOMETRE

Post spacing	Posts per km	Spacers	Post bolts M16	Caps	Weight (sigma 4 mm, 2 m)
4.0 m (light, N1)	250	250	250	250	≈ 4.8 t
2.0 m (standard N2)	500	500	500	500	≈ 9.5 t
1.33 m (H1 / bridges)	750	750	750	750	≈ 14.3 t
Double-sided median, 2.0 m	500	1 000	1 000	500	≈ 9.5 t + spacers

One 20' container carries about 1 400 sigma posts (2 m, 4 mm) or 1 800 posts of 3 mm; one 40' HC about 1 700 / 2 200 posts weight-limited.

STANDARDS

EN 1317-2 — containment class N2 / H1 / H2 systems · AASHTO M180 — W-beam; C post 125 × 62.5 (US pattern) · EN 10025-2 — S235JR / S355JR strip · EN ISO 1461 — hot-dip galvanizing ≥ 550 g/m² (road practice) · EN 10204 3.1