

PROJECT-7

STEEL PILES PROFILE (Z & U)

1. Raw Materials (Plates/Sections)

- Material type: Hot-rolled structural steel plates, rolled into sheet pile profiles (Z-type or U-type).
- Applicable standards:
 - **ASTM A572 (Gr. 50/55/60/65),ASTM A690)-USA**
 - **EN 10248-1 & 2 (S240GP,S270GP,S355GP,S430GP)-EUROPE**
- Yield strength: 240 MPa to 430 MPa
- Tensile strength: 410 MPa to 630 MPa.
- Elongation: 18% - 22 % minimum.

2. Profile types

- Z-type sheet piles: Interlocks located away from the neutral axis- higher section modules, efficient bending resistance.
- U-type sheet piles: Symmetrical shape, ease of driving and handling.

3. Surface finish & corrosion protection

- As-rolled condition: mill finish, free of lamination and surface-defects.
- Optional coatings:
 - Hot-Dip galvanizing: **IS 4759 / ASTM A123 / ISO 1461.**
 - Coal tar epoxy/ fusion bonded epoxy / polyurethane coatings for marine / coastal use.
 - Cathodic protection for submerged piles.

4. Dimensional tolerances (as per EN 10248 / ASTM A6 / IS 1852)

Parameter	Tolerance
Length	$\pm 50 \text{ mm}$
Thickness	$\pm 0.4 \text{ mm or } \pm 6\%$
Width	$\pm 2\%$
Straightness	$0.2\% \text{ of length}$

Interlock opening	<i>≤2 mm variation</i>
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5. **Standard:** *IS 2062, IS 4759, EN 10248-1/2, ASTM A572, ASTM A690, JIS A5523, AWS D1.1/ IS 9595, ISO 1461*