

GERDAU SHEET PILING

MECHANICAL TESTING

Tensile tests are performed in accordance with the stated requirements of the applicable ASTM or EU standard material specification, which reference testing specification detail.

In addition to the standard tensile test, a minimum of two interlock strength tests are performed for each heat of PS sections.

TOLERANCES

When using steel sheet piling it is necessary to make allowances for deviations from theoretical exactness. The basic character of the rolling processes and normal limitations of mill equipment limit the degree of precision obtainable in the production of steel sheet piling. Therefore, care must be taken during installation to assure that each pair of sheets is being set at the desired driving dimensions.

Interlocks should be continuous, reasonably free-sliding to grade when threaded, and for PS sections should have sufficient clearance to allow piles to be swung within the stated limits.

All steel sheet piling has an allowable weight variation of 2.5% and are invoiced on theoretical weight. Length tolerance is minus 0 inches (0 millimeters) and plus 5 inches (127 millimeters).

LENGTHS

Sheet piling sections are rolled and cut to ordered length. For best economy, the designer should specify the actual length as calculated in the design process. Stock lengths are typically available in 5 feet (1.5 meters) increments.

All sections are readily available in lengths up to 70 feet (21 meters) from regular rollings. Gerdau can supply longer lengths, sometimes in excess of 100 feet (30 meters). Before ordering lengths exceeding 70 feet (21 meters) check for availability.

SPLICING

If possible, splicing of Z-piling sections should be avoided. If splicing is necessary, sections should be ordered full length from the mill. They should be match-marked and cut at the job site. These match-marked sections should then be spliced together. This procedure improves section geometry match-up. Splicing of random sheets could result in setting and driving difficulties.

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HANDLING HOLES

Z-PILING: Paired sections will have one handling hole in both sections, with both holes at the same end of the pair.

PS-PILING: Each piece can be provided with one handling hole at one end.

SWING

The ability to obtain swing (rotation) between two properly interlocked sections will decrease with increasing length. This is due to the fact that as the length becomes longer, and handling becomes more difficult, straightness becomes more of a factor.

Z-PILING: Gerdau does not publish a swing value for Z-sections. As a “rule of thumb” it might be assumed that a 40 foot (12 meters) length would obtain a swing of up to 5 degrees.

PS-PILING: The Gerdau PS sections with interlock strengths up to 24 kips per inch (4,200 kN/m) are designed to have a minimum swing of 10 degrees in either direction on lengths up to 70 feet (21 meters). With longer lengths it is necessary to anticipate a reduction in obtainable swing of 1.5 degrees for each 10 feet (3 meters) in length over 70 feet (21 meters)

TRANSPORT, STORAGE, AND HANDLING

When storing or transporting PS Sections or unpaired Z-piling, dunnage should be identically sized, evenly spaced, and placed perpendicular to the longitudinal direction of the material. Each piece of dunnage should have at least a 4 inch (102 millimeters) width contacting the material in order to prevent damage due to point loading. Spacing between dunnage should not exceed 15 feet (4.6 meters), with both ends supported no more than 4 feet (1.2 meters) from either end. Ground or base dunnage should be placed on the same stacking pattern. When stacking bundles higher than one layer, dunnage on each layer should be placed directly above the dunnage below. Caution should be exercised when stacking multiple layers so as to not exceed the capacity of the dunnage being used, or adversely affect the stability of the stack.

When storing or transporting paired Z-piling, placement of ground or base dunnage shall be as described above. If intermediate blocking is needed between pairs, as would be expected to protect applied coating, those pieces should be identically sized and placed on each free flange as well as on both sides of the interlock at the joined section. If intermediate blocking is necessary between single Z-piling or PS Sections, it should be identically sized and placed on the flanges.

The intermediate blocking should be placed directly above the ground or base dunnage. If using chain or wire sling devices to handle material, the material should be protected from the sling to prevent damage to the section.