

# HRZ SERIES

## HOT ROLLED SHEET PILES

### Production Steel Grades

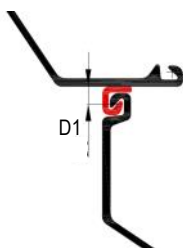
| CLASSIFICATION |          | Minimum Yield Strength | Ultimate Tensile Strength | Minimum Elongation |
|----------------|----------|------------------------|---------------------------|--------------------|
| Code           | Grade    | MPa                    | MPa                       | %                  |
| ASTM A572      | Grade 50 | 345                    | 450                       | 18                 |
|                | Grade 60 | 415                    | 520                       | 16                 |
|                | S355GP   | 355                    | 480                       | 22                 |
| EN 10248       | S390GP   | 390                    | 490                       | 20                 |
|                | S430GP   | 430                    | 510                       | 19                 |

### Delivery Conditions & Tolerances

| Component            | Tolerance           |
|----------------------|---------------------|
| Mass                 | ± 5%                |
| Length               | 200mm               |
| Height (≤ 200mm)     | 5.0mm               |
| (> 200mm & ≤ 300mm)  | 6.0mm               |
| (> 300mm)            | 7.0mm               |
| Thickness (≤ 8.5 mm) | 0.5 mm              |
| (> 8.5 mm)           | ± 6% of thickness   |
| Width - Single       | ± 2% of width       |
| - Pair               | ± 3% of width       |
| Straightness         | ±0.2% of the length |
| Squareness of Ends   | ± 2% of the width   |

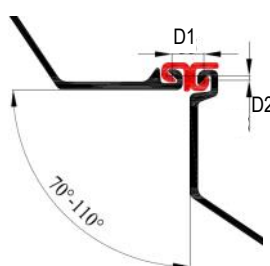
Note the piles may be produced to different tolerances if required for project requirements.

### Corner Piles



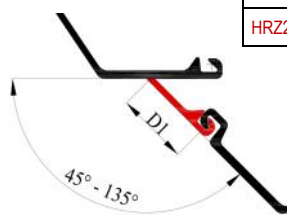
ESC-9E

Grade S355GP  
Weight 9.21kg/m  
D1 30mm



ESC-9E-2

Grade S355GP  
Weight 18.42kg/m  
D1 55mm  
D2 8mm



Fabricated Corner Pile

Grade See Production Steel Grades  
D1 76.2 - 152.4mm

### Interlock Combinations



### Delivery Options

Supplied in singles or paired. Pairs either loose, welded or crimped. Can be supplied with Lifting Hole. Shipping by container (11.8m or less) or Break Bulk. Corrosion Protection Coatings are an option.

### Minimum & Maximum Rolled Lengths

6m to 31m. Can be spliced to greater lengths. Can also be produced to project specific lengths.

### Interlock Compatibility

|           | HRZ17-700 | HRZ18-700 | HRZ19-700 | HRZ20-700 | HRZ24-700 | HRZ26-700 | HRZ28-700 |
|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| HRZ17-700 | ✓         | ✓         | ✓         | ✓         | ✓         | ✓         | ✓         |
| HRZ18-700 | ✓         | ✓         | ✓         | ✓         | ✓         | ✓         | ✓         |
| HRZ19-700 | ✓         | ✓         | ✓         | ✓         | ✓         | ✓         | ✓         |
| HRZ20-700 | ✓         | ✓         | ✓         | ✓         | ✓         | ✓         | ✓         |
| HRZ24-700 | ✓         | ✓         | ✓         | ✓         | ✓         | ✓         | ✓         |
| HRZ26-700 | ✓         | ✓         | ✓         | ✓         | ✓         | ✓         | ✓         |
| HRZ28-700 | ✓         | ✓         | ✓         | ✓         | ✓         | ✓         | ✓         |



## Get in Touch:

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COMPLETE PILING SOLUTIONS

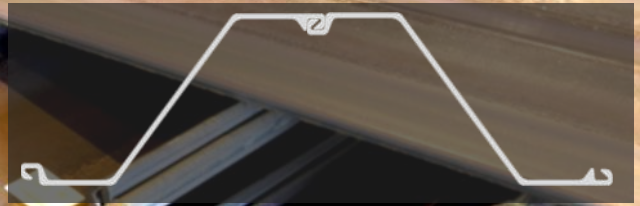
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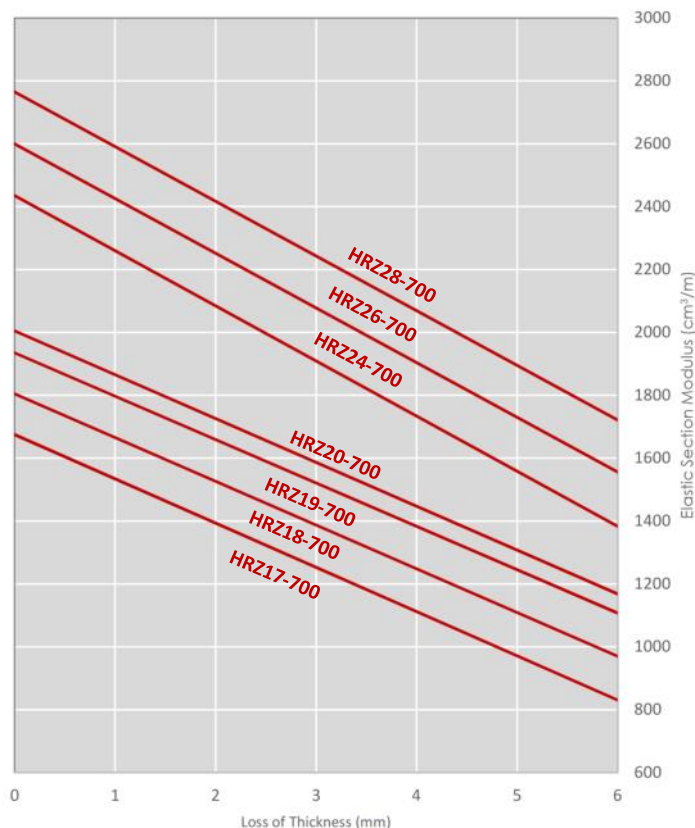
## DURABILITY OF SHEET PILES



Typical Loss of Thickness during Design Life in accordance with BS Eurocode EN 1993-5:2007 Chapter 4

| Environment |                                                                                                     | Design Life |      |      |      |      |      |
|-------------|-----------------------------------------------------------------------------------------------------|-------------|------|------|------|------|------|
|             |                                                                                                     | 0           | 5    | 25   | 50   | 75   | 100  |
| Atmospheric | Normal Atmosphere                                                                                   | 0.00        | 0.05 | 0.25 | 0.50 | 0.75 | 1.00 |
|             | Locations close to the Sea                                                                          | 0.00        | 0.10 | 0.50 | 1.00 | 1.50 | 2.00 |
| Soil        | Undisturbed natural soils (sand, silt, clay, schist,...)                                            | 0.00        | 0.00 | 0.30 | 0.60 | 0.90 | 1.20 |
|             | Polluted natural soils and industrial grounds                                                       | 0.00        | 0.15 | 0.75 | 1.50 | 2.25 | 3.00 |
|             | Aggressive natural soils (swamp, marsh, peat,...)                                                   | 0.00        | 0.20 | 1.00 | 1.75 | 2.50 | 3.25 |
|             | Non-compacted and non-aggressive fills (clay, schist, sand, silt,...)                               | 0.00        | 0.18 | 0.70 | 1.20 | 1.70 | 2.20 |
|             | Non-compacted and aggressive fills (ashes, slag,...)                                                | 0.00        | 0.50 | 2.00 | 3.25 | 4.50 | 5.75 |
|             | Compacted and non-aggressive fills (clay, schist, sand, silt,...)                                   | 0.00        | 0.09 | 0.35 | 0.60 | 0.85 | 1.10 |
| Water       | Compacted and aggressive fills (ashes, slag,...)                                                    | 0.00        | 0.25 | 1.00 | 1.63 | 2.25 | 2.88 |
|             | Common fresh water (river, ship canal,...) in the zone of high attack (water line)                  | 0.00        | 0.15 | 0.55 | 0.90 | 1.15 | 1.40 |
|             | Very polluted fresh water (sewage, industrial effluent,...) in the zone of high attack (water line) | 0.00        | 0.30 | 1.30 | 2.30 | 3.30 | 4.30 |
|             | Sea water in temperate climate in the zone of high attack (low water and splash zones)              | 0.00        | 0.55 | 1.90 | 3.75 | 5.60 | 7.50 |
|             |                                                                                                     | 0.00        | 0.25 | 0.90 | 1.75 | 2.60 | 3.50 |
|             |                                                                                                     | 0.00        | 0.25 | 0.90 | 1.75 | 2.60 | 3.50 |

## Reduction of Section Modulus vs Loss of Thickness



Note the elastic section modulus calculations that are shown are based on a uniform thickness loss excluding any loss from the inside of the interlocks. These charts are to be used in conjunction with the steel grades to determine the main parameters in design:

1. Bending Moment
2. Compression Load
3. Deflection



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