This combined wall system comprises 3 elements¹:  
- HZ-M king piles: wide flange beams with specific flange geometries and milled grooves,  
- AZ infill sheet piles: standard sheet piles,  
- RZD, RZU and RH: hot rolled connectors.

The new HZ 630M section, launched in 2019, completes the existing range of the already large HZ-M series. It was developed mainly for very hard driving conditions (installation in compact soils) and for structures with restrictions on the height of the system. The flange thickness is 0.953” (measured at the location specified in the European standard), and the maximum height of an HZ 630M solution is only 26.46” (including connectors).

Check our brochure ‘The HZ®-M Steel Wall System’ for more details on available steel grades, connectors, tolerances, delivery conditions, welding, installation recommendations, etc.

¹ The HZ-M king pile can also be installed without any infill sheet piles, yielding a very stiff combined wall system C 1 or C 23.

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**Solutions**

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<tbody>
<tr>
<td><strong>Dimensions</strong></td>
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<td><strong>b</strong>, <strong>v</strong>, <strong>v'</strong>, <strong>v''</strong>, <strong>u</strong></td>
<td><strong>A</strong>, <strong>G</strong>, <strong>I_y</strong>, <strong>I_x</strong>, <strong>I_z</strong>, <strong>W_{xy}</strong>, <strong>W_{xz}</strong>, <strong>A_{sw}</strong>, <strong>I_{sw}</strong></td>
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ArcelorMittal Sheet Piling

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Telephone: (+352) 5313 3105 | Email: sheetpiling@arcelormittal.com | Website: sheetpiling.arcelormittal.com
### HZ-M/AZ steel wall solution definitions and designations

#### Combinations

<table>
<thead>
<tr>
<th>Combination</th>
<th>Properties per ft of wall</th>
<th>Per system</th>
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<tbody>
<tr>
<td></td>
<td>( b_{sys} )</td>
<td>( A )</td>
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<tr>
<td>C 1</td>
<td>17.09</td>
<td>35.78</td>
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<tr>
<td>C 23</td>
<td>34.17</td>
<td>36.50</td>
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</tbody>
</table>

Note: Please contact us for combinations with other infill sheet piles.

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### Combination C 1

![Diagram of Combination C 1]

### Combination C 23

![Diagram of Combination C 23]

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**Parameters and Definitions**

- \( b_{sys} \): width of one system (HZ or HZ/AZ combination) [in]
- \( v_1, v_2, u_1 \): distance of the neutral axis to the extreme fibre of the HZ-M flanges [in]
- \( v_3, v_4, u_2 \): distance of the neutral axis to the extreme fibre of the connector RH/RZ [in]
- \( A \): cross sectional area [in²], [in²/ft]
- \( A_v \): shear area [in²]
- \( A_{UL} \): coating area on the soil side (back), excluding the inside of the interlocks, per element or system width, per unit length [ft²/ft]
- \( A_{LS} \): coating area on the water side (front), excluding the inside of the interlocks, per element or system width, per unit length [ft²/ft]
- \( G \): mass of the element / solution (with length RH/RZ = length HZ) per unit length [lb/ft]
- \( G_{60\%} \): mass of the combination with length of the infill sheet piles AZ = 60% of length of the HZ-M king piles [lb/ft²]
- \( G_{80\%} \): mass of the combination with length of the infill sheet piles AZ = 80% of length of the HZ-M king piles [lb/ft²]
- \( G_{100\%} \): mass of the combination with length of all the elements [lb/ft²]
- \( I_y \): moment of inertia about the main neutral axis y-y [in⁴], [in⁴/ft]
- \( I_t \): torsional constant [in⁴]
- \( I_w \): warping constant [in⁶]
- \( I_z \): moment of inertia about the neutral axis z-z (weak axis) [in⁴]
- \( W_{el,y}^{*} \): elastic section modulus of the combination related to the extreme fiber of the flange of the HZ-M [in³]
- \( W_{el,y}^{**} \): equivalent elastic section modulus of the combination related to the extreme fiber of the connector RH/RZ [in³]
- \( W_{el,z} \): elastic section modulus of the element related to neutral axis z-z (weak axis) [in³]
- \( W_{pl,y} \): plastic section modulus of the HZ-M [in³]