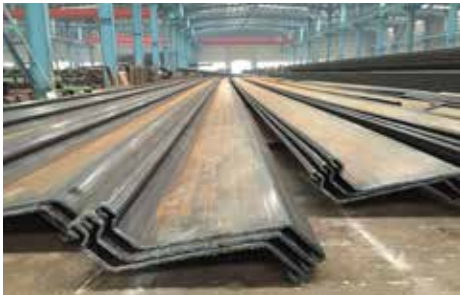


Cold Formed Sheet Piles



MLION CORPORATION provides full customization on width, height, length, thickness and steel grade, providing multiple possibilities in section modulus by rolling specially designed sections.

— Sheet Pile Range - Cold Formed

The innovative MMZ and MMU Series of cold formed steel sheet piles have been manufactured to be wider, stronger and lighter than traditional U-Shape JIS Type Sheet Piles. These sections have been used extensively in projects across Asia. In 2017, we are adding in a new MLL Series which provides an alternative to the Hat Type JIS and Omega sheet piles for wider applications.

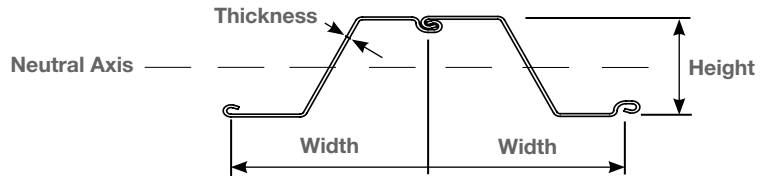
These piles are uniquely designed to easily replace popular profiles like AZ, PZC, AU, LX and PU piles often used. With up to 16mm thickness, the piles provide great corrosion resistance and ease in driving.

Improvement in manufacturing process has brought forth industry leading innovation and customization to the sections we produce. We now provide Beam-Sheet Pile combination walls, Pipe-Sheet Pile combination walls and Box Pile Combination Walls in cold formed manner.

Available Steel Grade:

- ✓ EN 10025: S235 / S275 / S355 / S390 / S420 / S460
- ✓ JIS 5528: SY295 / SY390
- ✓ ASTM A572: Gr. 43 / Gr. 50 / Gr. 60
- ✓ Low Corrosion Steel: ASTM A690 Mariner Steel Grade (345 / 390 / 430)

Advantages of MMZ Sheet Piles



- ✓ Interlocks located away from the neutral axis
- ✓ Large width resulting in good installation performance
- ✓ Customization to lengths of up to 35m
- ✓ Wide range of variable widths and lengths
- ✓ Highly efficient section modulus to mass ratio
- ✓ Up to 16mm thickness and section modulus of 5000 cm³/m

| Section | Width | Height | Thickness | Section Area | Weight | Weight | Inertia | Section Modulus |
|---------|-------|--------|-----------|--------------------|--------|-------------------|--------------------|--------------------|
| | mm | mm | mm | cm ² /m | kg/m | kg/m ² | cm ⁴ /m | cm ³ /m |
| MMZ11-1 | 575 | 260 | 8.8 | 128.7 | 58.1 | 101 | 13860 | 1066 |
| MMZ11-2 | 575 | 260 | 9.5 | 138.9 | 63.2 | 109 | 14563 | 1120 |
| MMZ12-1 | 670 | 302 | 8.5 | 126.1 | 66.1 | 99 | 18726 | 1239 |
| MMZ12-2 | 770 | 344 | 8.5 | 120 | 72.6 | 94.2 | 21413 | 1302 |
| MMZ12-3 | 575 | 260 | 10 | 155.9 | 70.4 | 122.4 | 15845 | 1217 |
| MMZ12-4 | 700 | 314 | 8.5 | 122.7 | 67.4 | 96.3 | 18889 | 1202 |
| MMZ13-1 | 670 | 303 | 9.5 | 136.9 | 72 | 107.5 | 19381 | 1279 |
| MMZ13-2 | 770 | 344 | 9 | 125.0 | 75.6 | 98.1 | 22579 | 1312 |
| MMZ13-3 | 575 | 260 | 10.5 | 161 | 72.6 | 126.4 | 16540 | 1272 |
| MMZ13-4 | 700 | 315 | 9.5 | 134.6 | 74 | 105.7 | 20537 | 1303 |
| MMZ13-5 | 700 | 316 | 10 | 140.4 | 77.2 | 110.2 | 21420 | 1355 |
| MMZ13-6 | 650 | 350 | 8 | 119.5 | 61 | 93.8 | 22799 | 1303 |
| MMZ14-1 | 670 | 304 | 10.5 | 153.6 | 80.8 | 120.6 | 21220 | 1395 |
| MMZ14-2 | 770 | 345 | 9.5 | 131.1 | 79.3 | 102.9 | 23396 | 1355 |
| MMZ14-3 | 770 | 345 | 10 | 137.2 | 82.9 | 107.7 | 24315 | 1409 |
| MMZ14-4 | 700 | 316 | 10.3 | 146.1 | 80.3 | 114.7 | 22258 | 1407 |
| MMZ15-1 | 700 | 420 | 7 | 109.2 | 60 | 85.7 | 31087 | 1480 |
| MMZ15-2 | 700 | 450 | 7 | 108.4 | 59.6 | 85.1 | 33203 | 1475 |
| MMZ16-1 | 575 | 350 | 8.5 | 141.7 | 63.9 | 111.2 | 28009 | 1600 |
| MMZ16-2 | 640 | 400 | 8 | 127.4 | 64 | 100 | 32421 | 1620 |
| MMZ17-1 | 630 | 379 | 8.5 | 137.1 | 67.8 | 107.6 | 31592 | 1666 |
| MMZ17-2 | 700 | 420 | 8.5 | 133 | 73.1 | 104.4 | 37135 | 1767 |
| MMZ17-3 | 575 | 350 | 9 | 148 | 66.8 | 116.2 | 29040 | 1659 |
| MMZ17-4 | 575 | 370 | 9 | 148.4 | 67 | 116.5 | 31798 | 1718 |
| MMZ17-5 | 575 | 350 | 9.5 | 156.2 | 70.5 | 122.6 | 29796 | 1702 |
| MMZ17-6 | 675 | 430 | 8.5 | 133 | 70.5 | 104.4 | 36820 | 1712 |
| MMZ18-1 | 630 | 380 | 9.5 | 150.4 | 74.4 | 118.1 | 34220 | 1801 |
| MMZ18-2 | 700 | 420 | 9 | 139.2 | 76.5 | 109.3 | 37991 | 1808 |
| MMZ18-3 | 575 | 350 | 9.8 | 160.1 | 72.3 | 125.7 | 30962 | 1767 |
| MMZ18-4 | 575 | 350 | 10 | 163.4 | 73.8 | 128.3 | 31578 | 1804 |
| MMZ18-5 | 675 | 420 | 9 | 141.1 | 74.8 | 110.8 | 37990 | 1808 |
| MMZ18-6 | 630 | 381 | 9.9 | 157.2 | 77.8 | 123.4 | 35721 | 1874 |
| MMZ18-7 | 700 | 440 | 9 | 140.9 | 77.4 | 110.6 | 41587 | 1890 |
| MMZ19-1 | 630 | 381 | 10.2 | 163.8 | 81 | 128.6 | 35803 | 1879 |
| MMZ19-2 | 700 | 421 | 9.5 | 145.6 | 80 | 114.3 | 39592 | 1880 |

MMZ - Cold Formed Sheet Piles

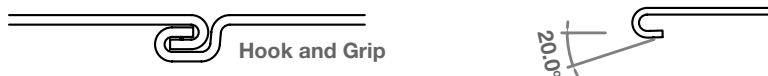
| Section | Width | Height | Thickness | Section Area | Weight | Weight | Moment of Inertia | Section Modulus |
|---------|-------|--------|-----------|--------------------|--------|-------------------|--------------------|--------------------|
| | mm | mm | mm | cm ² /m | kg/m | kg/m ² | cm ⁴ /m | cm ³ /m |
| MMZ19-3 | 675 | 390 | 10 | 156.6 | 83 | 122.9 | 37475 | 1921 |
| MMZ20-1 | 700 | 421 | 9.9 | 152 | 83.5 | 119.3 | 41031 | 1948 |
| MMZ21-1 | 575 | 350 | 11 | 189.2 | 85.4 | 148.5 | 36631 | 2093 |
| MMZ22-1 | 575 | 350 | 11.5 | 199.1 | 89.9 | 156.3 | 37913 | 2166 |
| MMZ23-1 | 575 | 350 | 12 | 208.4 | 94.1 | 163.6 | 39530 | 2258 |
| MMZ24-1 | 700 | 449 | 10.5 | 172.4 | 94.7 | 135.3 | 55256 | 2460 |
| MMZ24-2 | 575 | 350 | 12.5 | 219.5 | 99.1 | 172.3 | 41558 | 2374 |
| MMZ24-3 | 700 | 480 | 10 | 163.3 | 89.7 | 128.2 | 58912 | 2454 |
| MMZ24-4 | 700 | 540 | 9.5 | 156.7 | 86.1 | 123 | 66447 | 2460 |
| MMZ25-1 | 630 | 440 | 10.5 | 180.8 | 89.4 | 141.9 | 54750 | 2488 |
| MMZ25-2 | 675 | 440 | 11 | 183.4 | 97.2 | 144 | 55500 | 2522 |
| MMZ25-3 | 575 | 350 | 13 | 227.4 | 102.6 | 178.5 | 43459 | 2482 |
| MMZ26-1 | 630 | 470 | 11.5 | 197.7 | 97.9 | 155.2 | 63318 | 2695 |
| MMZ26-2 | 700 | 460 | 11.5 | 187.3 | 102.9 | 147 | 59887 | 2603 |
| MMZ26-3 | 675 | 430 | 12 | 199.1 | 105.5 | 156.3 | 56023 | 2605 |
| MMZ26-4 | 700 | 500 | 10 | 167.3 | 91.9 | 131.3 | 65322 | 2612 |
| MMZ26-5 | 700 | 470 | 10.5 | 176.3 | 96.9 | 138.4 | 62047 | 2640 |
| MMZ27-1 | 675 | 460 | 12 | 200.3 | 106.1 | 157.2 | 62336 | 2709 |
| MMZ27-2 | 630 | 480 | 10.5 | 185 | 91.5 | 145.2 | 65379 | 2723 |
| MMZ28-1 | 630 | 440 | 12.5 | 213.6 | 105.7 | 167.7 | 60621 | 2754 |
| MMZ28-2 | 700 | 461 | 13.2 | 214.6 | 118 | 168.5 | 65537 | 2755 |
| MMZ28-3 | 700 | 461 | 12 | 200.1 | 110 | 157.1 | 64901 | 2815 |
| MMZ28-4 | 700 | 500 | 11.2 | 188.5 | 103.6 | 148 | 70005 | 2800 |
| MMZ28-5 | 700 | 480 | 11.5 | 189.4 | 104.1 | 148.7 | 67502 | 2812 |
| MMZ28-6 | 700 | 481 | 11 | 184.5 | 101.4 | 144.8 | 66546 | 2766 |
| MMZ32-1 | 675 | 485 | 12 | 212.1 | 112.4 | 166.5 | 77985 | 3215 |
| MMZ34-1 | 675 | 500 | 12 | 215.9 | 114.4 | 169.5 | 84865 | 3394 |
| MMZ35-1 | 675 | 500 | 12.5 | 224.3 | 118.9 | 176.1 | 87685 | 3506 |
| MMZ36-1 | 675 | 485 | 13 | 234.1 | 124.1 | 183.8 | 87785 | 3620 |
| MMZ36-2 | 700 | 540 | 12.2 | 215.9 | 118.6 | 169.5 | 97450 | 3609 |
| MMZ36-3 | 630 | 490 | 12.5 | 235.5 | 116.5 | 184.9 | 88299 | 3604 |
| MMZ37-1 | 700 | 500 | 13 | 231.8 | 127.4 | 182 | 92562 | 3702 |
| MMZ37-2 | 675 | 485 | 13.5 | 242.5 | 128.5 | 190.4 | 89960 | 3709 |
| MMZ38-1 | 675 | 485 | 14 | 249.8 | 132.4 | 196.1 | 91989 | 3793 |
| MMZ38-2 | 700 | 570 | 13 | 230.1 | 126.4 | 180.6 | 109180 | 3830 |
| MMZ39-1 | 700 | 560 | 13.5 | 239.9 | 131.8 | 188.3 | 110180 | 3935 |
| MMZ40-1 | 700 | 550 | 13.8 | 244.2 | 134.2 | 191.7 | 110027 | 4000 |
| MMZ41-1 | 700 | 540 | 14 | 251.8 | 138.4 | 197.7 | 111480 | 4128 |
| MMZ42-1 | 700 | 550 | 14 | 253.1 | 139.1 | 198.7 | 115747 | 4209 |
| MMZ42-2 | 700 | 550 | 14.2 | 258.7 | 142.1 | 203.1 | 115660 | 4205 |
| MMZ43-1 | 700 | 560 | 14 | 253.9 | 139.5 | 199.3 | 119843 | 4280 |
| MMZ43-2 | 700 | 560 | 13.5 | 248.4 | 136.5 | 195 | 120877 | 4316 |
| MMZ44-1 | 700 | 540 | 14.5 | 271.3 | 149.1 | 213 | 118995 | 4403 |
| MMZ44-2 | 700 | 550 | 14 | 256.9 | 141.2 | 201.7 | 121091 | 4403 |
| MMZ46-1 | 580 | 540 | 14.2 | 291.2 | 132.6 | 228.6 | 124708 | 4618 |
| MMZ46-2 | 700 | 525 | 15.2 | 287 | 157.7 | 225.3 | 121241 | 46.16 |
| MMZ46-3 | 700 | 560 | 15 | 281 | 154.4 | 220.6 | 129611 | 4628 |
| MMZ46-4 | 700 | 600 | 14 | 258.2 | 141.9 | 202.7 | 138283 | 4609 |
| MMZ48-1 | 580 | 570 | 15 | 306.6 | 139.6 | 240.7 | 137234 | 4814 |
| MMZ48-2 | 580 | 540 | 15 | 306/6 | 139.6 | 240.7 | 137234 | 4814 |
| MMZ48-3 | 700 | 550 | 15.2 | 288.4 | 158.5 | 226.4 | 132187 | 4805 |
| MMZ50-1 | 580 | 580 | 16 | 322.2 | 146.7 | 252.9 | 145656 | 5022 |
| MMZ50-2 | 580 | 530 | 15.5 | 316.9 | 144.3 | 248.8 | 132744 | 5008 |
| MMZ50-3 | 700 | 530 | 16 | 302.5 | 166.3 | 237.5 | 133465 | 5036 |
| MMZ50-4 | 700 | 560 | 16 | 298.5 | 164 | 234.3 | 140578 | 5020 |
| MMZ50-5 | 580 | 520 | 15 | 322.3 | 146.7 | 253 | 133709 | 5142 |
| MMZ52-1 | 700 | 550 | 16 | 305.2 | 167.7 | 239.6 | 143742 | 5226 |

MMZ - Cold Formed Sheet Piles

- ✓ In 2017, we introduce a new range of MMZ piles which features 700 - 800mm width. This is inline with the trend of moving towards wider and more efficient sections to speed up installation time. Weight have been optimized to provide greater savings compared to standard sections, while retaining the section modulus to meet the design requirements.

| Section | Width | Height | Thickness | Section Area | Weight | Weight | Moment of Inertia | Section Modulus |
|------------|-------|--------|-----------|--------------------|--------|-------------------|--------------------|--------------------|
| | mm | mm | mm | cm ² /m | kg/m | kg/m ² | cm ⁴ /m | cm ³ /m |
| MMZ 18-800 | 800 | 500 | 8.5 | 127.1 | 79.9 | 99.8 | 46474 | 1858 |
| MMZ 20-800 | 800 | 490 | 9.5 | 141.1 | 88.7 | 110.8 | 49026 | 2001 |
| MMZ 22-800 | 800 | 500 | 10 | 149.7 | 94 | 117.5 | 54142 | 2165 |
| MMZ 23-800 | 800 | 530 | 9.5 | 147.1 | 92.4 | 115.5 | 61811 | 2332 |
| MMZ 25-800 | 800 | 520 | 10.5 | 163.1 | 102.6 | 128 | 65060 | 2501 |
| MMZ 27-800 | 800 | 520 | 11.5 | 176.1 | 110.6 | 138.2 | 64919 | 2670 |
| MMZ 28-750 | 750 | 560 | 10 | 165.4 | 97.4 | 129.8 | 78780 | 2813 |
| MMZ 30-750 | 750 | 550 | 11.2 | 183.2 | 107.9 | 143.8 | 82741 | 3008 |
| MMZ 32-750 | 750 | 560 | 12 | 197.2 | 116.1 | 154.8 | 89690 | 3202 |
| MMZ 23-750 | 750 | 530 | 9.5 | 150.6 | 88.7 | 118.2 | 61642 | 2326 |
| MMZ 23-700 | 700 | 530 | 9.5 | 154.4 | 84.9 | 121.2 | 61450 | 2318 |
| MMZ 25-750 | 750 | 520 | 10.5 | 167.4 | 98.5 | 131.4 | 64854 | 2494 |
| MMZ 25-700 | 700 | 520 | 10.5 | 171.8 | 94.5 | 134.9 | 64618 | 2485 |

Interlocks



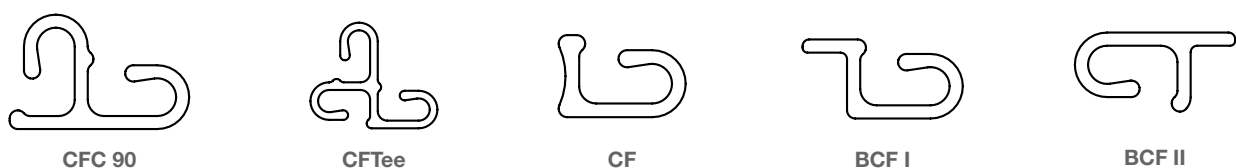
- ✓ MMZ Interlocks are manufactured to EN 10249-2 Standards. The hook and grip type interlocks provide up to 15-20 degrees in swing angle while ensuring good water tightness in the retaining wall.

Single / Double Piles



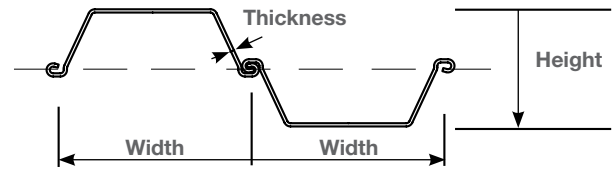
- ✓ Customers may request for delivery in single-pile or double-pile formats as per piling requirements.

Corner Pile Requirements



- ✓ Collaboration with Pilepro in the USA has given us access to a whole host of connectors for your cold formed needs.

Advantages of MMU Sheet Piles



- ✓ Wide range of up to 4600 cm³/m
- ✓ Ease of piling and handling
- ✓ Good for re-use and temporary works

| Section | Width | Height | Thickness | Section Area | Weight | Weight | Moment of Inertia | Section Modulus |
|----------|-------|--------|-----------|--------------------|--------|-------------------|--------------------|--------------------|
| | mm | mm | mm | cm ² /m | kg/m | kg/m ² | cm ⁴ /m | cm ³ /m |
| MMU5-1 | 600 | 150 | 8.5 | 119.7 | 56.4 | 94 | 3800 | 508 |
| MMU5-2 | 600 | 150 | 9.5 | 135.7 | 63.9 | 106.5 | 4162 | 554 |
| MMU5-3 | 400 | 210 | 6 | 104.5 | 32.8 | 82 | 5621 | 535 |
| MMU6-1 | 600 | 180 | 8.5 | 125.1 | 58.9 | 98.2 | 5464 | 606 |
| MMU6-2 | 600 | 280 | 6 | 89.6 | 42.2 | 70.3 | 9038 | 645 |
| MMU6-3 | 600 | 309 | 6 | 89 | 41.9 | 69.9 | 10005 | 647 |
| MMU7-1 | 600 | 300 | 6 | 92.9 | 43.7 | 72.9 | 10508 | 700 |
| MMU7-2 | 600 | 340 | 6 | 95 | 44.7 | 74.6 | 13273 | 780 |
| MMU7-3 | 600 | 310 | 6.4 | 93.6 | 44.1 | 73.5 | 10539 | 680 |
| MMU7-4 | 600 | 320 | 6.5 | 98.2 | 46.3 | 77.1 | 11872 | 741 |
| MMU7-5 | 600 | 325 | 6.5 | 100.8 | 47.2 | 79.1 | 15540 | 771 |
| MMU8-1 | 600 | 360 | 6 | 96.1 | 45.2 | 75.4 | 14749 | 819 |
| MMU8-2 | 600 | 340 | 6.5 | 102.2 | 48.1 | 80.2 | 14888 | 875 |
| MMU8-3 | 600 | 325 | 7 | 109.9 | 51.8 | 86.3 | 14258 | 876 |
| MMU8-4 | 750 | 320 | 6 | 87.1 | 51.3 | 68.4 | 13025 | 813 |
| MMU8-5 | 600 | 320 | 7 | 103.1 | 48.5 | 80.9 | 12338 | 770 |
| MMU8-6 | 600 | 325 | 7.3 | 107.8 | 50.8 | 84.6 | 13355 | 821 |
| MMU9-1 | 600 | 360 | 6.5 | 105.1 | 49.5 | 82.5 | 17360 | 964 |
| MMU9-2 | 600 | 330 | 7.5 | 115.8 | 54.5 | 90.9 | 15313 | 927 |
| MMU9-3 | 750 | 320 | 7 | 101.8 | 59.9 | 79.9 | 14507 | 906 |
| MMU9-4 | 600 | 355 | 7 | 111.7 | 52.6 | 87.7 | 16823 | 947 |
| MMU10-1 | 600 | 300 | 7 | 114.4 | 53.9 | 89.8 | 19078 | 1031 |
| MMU10-2 | 600 | 310 | 9 | 141.7 | 66.7 | 111.2 | 16056 | 1035 |
| MMU11-1 | 600 | 380 | 7.5 | 123.3 | 58.1 | 96.8 | 22313 | 1174 |
| MMU11-2 | 600 | 360 | 8 | 131.6 | 62 | 103.3 | 20095 | 1115 |
| MMU11-3 | 600 | 400 | 7 | 117.5 | 55.3 | 92.2 | 23716 | 1185 |
| MMU11-4 | 575 | 360 | 8 | 133.8 | 60.4 | 105 | 19890 | 1104 |
| MMU11-5 | 600 | 310 | 9.5 | 148.8 | 70.1 | 116.8 | 17160 | 1106 |
| MMU12-1 | 600 | 380 | 8.5 | 140.4 | 66.1 | 110.2 | 22936 | 1206 |
| MMU12-2 | 500 | 360 | 8 | 143.9 | 56.5 | 113 | 20701 | 1150 |
| MMU12-3 | 700 | 440 | 7.5 | 115.8 | 64.2 | 90.9 | 26978 | 1225 |
| MMU12-4 | 600 | 360 | 9 | 147.8 | 69.6 | 116 | 22670 | 1259 |
| MMU12-5 | 450 | 360 | 9.5 | 182 | 64.3 | 142.9 | 24930 | 1384 |
| MMU12-6 | 600 | 360 | 8.5 | 140.4 | 66.1 | 110.2 | 21600 | 1200 |
| MMU13-1 | 675 | 420 | 7.5 | 123.6 | 65.6 | 97 | 28931 | 1378 |
| MMU13-2 | 600 | 310 | 10 | 163.9 | 77.2 | 128.7 | 19552 | 1260 |
| MMU13-3 | 500 | 355 | 8.5 | 154.6 | 60.7 | 121.4 | 21816 | 1229 |
| MMU13-4 | 700 | 440 | 8 | 126.6 | 69.6 | 99.4 | 28765 | 1307 |
| MMU13-5 | 700 | 400 | 10 | 159.7 | 87.8 | 125.4 | 31012 | 1550 |
| MMU13-6 | 500 | 340 | 10 | 180.1 | 70.7 | 141.4 | 22195 | 1305 |
| MMU13-7 | 600 | 360 | 10 | 163.4 | 77 | 128.3 | 23114 | 1283 |
| MMU13-8 | 575 | 360 | 10 | 166.1 | 75 | 130.4 | 22786 | 1265 |
| MMU13-9 | 400 | 290 | 11.5 | 233.8 | 73.4 | 183.5 | 19546 | 1347 |
| MMU13-10 | 600 | 408 | 7.5 | 127.4 | 60 | 100 | 26105 | 1279 |
| MMU13-11 | 600 | 400 | 8 | 138.6 | 65.3 | 108.8 | 26720 | 1335 |
| MMU14-1 | 750 | 445 | 8 | 126.0 | 74.2 | 98.9 | 31802 | 1429 |
| MMU14-2 | 675 | 435 | 8 | 133.1 | 70.5 | 104.5 | 31589 | 1451 |

MMU - Cold Formed Sheet Piles

| Section | Width | Height | Thickness | Section Area | Weight | Weight | Moment of Inertia | Section Modulus |
|---------|-------|--------|-----------|--------------------|--------|-------------------|--------------------|--------------------|
| | mm | mm | mm | cm ² /m | kg/m | kg/m ² | cm ⁴ /m | cm ³ /m |
| MMU14-3 | 750 | 408 | 8.5 | 132.2 | 77.9 | 103.8 | 29055 | 1424 |
| MMU14-4 | 600 | 430 | 8 | 136.4 | 64.3 | 107.1 | 30273 | 1407 |
| MMU15-1 | 675 | 420 | 8.5 | 142.2 | 75.3 | 111.6 | 31944 | 1520 |
| MMU15-2 | 500 | 360 | 10 | 183.7 | 72.1 | 144.2 | 25820 | 1434 |
| MMU15-3 | 600 | 422 | 8.2 | 145.9 | 68.7 | 114.5 | 32633 | 1546 |
| MMU16-1 | 750 | 440 | 9 | 143.6 | 84.5 | 112.7 | 35660 | 1620 |
| MMU16-2 | 600 | 380 | 9.5 | 156.7 | 73.8 | 123 | 30400 | 1600 |
| MMU16-3 | 600 | 420 | 9 | 159.4 | 75.1 | 125.1 | 33916 | 1615 |
| MMU16-4 | 700 | 450 | 9 | 148.0 | 81.4 | 116.2 | 36787 | 1635 |
| MMU16-5 | 650 | 480 | 8 | 141.7 | 72.3 | 111.2 | 40508 | 1687 |
| MMU16-6 | 750 | 411 | 9.3 | 146.5 | 86.3 | 115 | 33230 | 1616 |
| MMU16-7 | 600 | 430 | 8.5 | 154.1 | 72.6 | 121 | 35930 | 1670 |
| MMU17-1 | 750 | 430 | 9.5 | 151.3 | 89.1 | 118.8 | 37094 | 1724 |
| MMU17-2 | 500 | 340 | 11.5 | 220.9 | 86.7 | 173.4 | 28257 | 1662 |
| MMU17-3 | 650 | 500 | 8 | 140.1 | 71.5 | 110 | 41197 | 1647 |
| MMU17-4 | 600 | 460 | 8.5 | 153.9 | 72.5 | 120.8 | 38299 | 1665 |
| MMU18-1 | 750 | 460 | 9 | 148.8 | 87.6 | 116.8 | 41641 | 1810 |
| MMU18-2 | 600 | 460 | 9 | 163.3 | 76.9 | 128.2 | 41410 | 1801 |
| MMU18-3 | 600 | 460 | 9.5 | 170.1 | 80.1 | 133.5 | 42006 | 1825 |
| MMU18-4 | 750 | 441 | 9.3 | 150.3 | 88.5 | 118 | 39296 | 1782 |
| MMU18-5 | 600 | 430 | 8.5 | 154.1 | 72.6 | 121 | 35930 | 1670 |
| MMU18-6 | 600 | 435 | 9.3 | 187.0 | 88.1 | 146.8 | 41781 | 1921 |
| MMU18-7 | 600 | 430 | 9 | 163.3 | 76.9 | 128.2 | 38919 | 1810 |
| MMU20-1 | 750 | 460 | 10 | 164.6 | 96.9 | 129.2 | 44916 | 1952 |
| MMU20-2 | 600 | 450 | 10 | 181.5 | 85.5 | 142.5 | 42013 | 1867 |
| MMU20-3 | 600 | 450 | 10.5 | 189.2 | 89.1 | 148.5 | 43245 | 1921 |
| MMU20-4 | 750 | 480 | 10.5 | 173.4 | 102.1 | 136.1 | 49525 | 2063 |
| MMU20-5 | 700 | 480 | 10 | 179.2 | 98.5 | 140.7 | 48911 | 2037 |
| MMU20-6 | 650 | 540 | 8 | 150.1 | 76.6 | 117.8 | 54535 | 2019 |
| MMU20-7 | 600 | 460 | 9.5 | 172.2 | 81.1 | 135.2 | 44048 | 1915 |
| MMU20-8 | 600 | 470 | 9.5 | 176.7 | 83.2 | 138.7 | 47676 | 2028 |
| MMU21-1 | 750 | 500 | 10 | 169.2 | 99.6 | 132.8 | 53069 | 2122 |
| MMU21-2 | 600 | 500 | 9.5 | 175.2 | 82.5 | 137.5 | 50293 | 2011 |
| MMU21-3 | 400 | 420 | 10.5 | 247.4 | 77.7 | 194.2 | 43670 | 2078 |
| MMU21-4 | 600 | 470 | 9.2 | 173.9 | 81.9 | 136.5 | 48615 | 2068 |
| MMU22-1 | 600 | 500 | 10 | 191.1 | 90 | 150 | 55161 | 2205 |
| MMU22-2 | 600 | 490 | 9.5 | 182.8 | 86.1 | 143.5 | 54083 | 2206 |
| MMU22-3 | 600 | 510 | 10 | 192.0 | 90.4 | 150.7 | 59635 | 2338 |
| MMU23-1 | 700 | 500 | 10.5 | 191.7 | 105.4 | 150.5 | 56811 | 2272 |
| MMU23-2 | 650 | 540 | 9 | 172.0 | 87.8 | 135 | 62640 | 2320 |
| MMU23-3 | 750 | 480 | 10.5 | 180.4 | 106.2 | 141.6 | 54701 | 2278 |
| MMU23-4 | 600 | 450 | 12 | 227.8 | 107.3 | 178.8 | 51450 | 2286 |
| MMU23-5 | 750 | 505 | 10 | 173.4 | 102.1 | 136.1 | 57409 | 2274 |
| MMU25-1 | 750 | 500 | 11.5 | 200.6 | 118.1 | 157.5 | 62563 | 2502 |
| MMU25-2 | 600 | 490 | 11.5 | 224.7 | 105.8 | 176.4 | 61535 | 2511 |
| MMU25-3 | 500 | 450 | 12 | 259.9 | 102 | 204 | 56224 | 2500 |
| MMU25-4 | 750 | 510 | 10.6 | 187.5 | 110.4 | 147.2 | 64086 | 2513 |
| MMU26-1 | 750 | 500 | 12 | 212.0 | 124.8 | 166.4 | 65330 | 2612 |
| MMU26-2 | 500 | 450 | 12.5 | 271.0 | 106.4 | 212.7 | 57454 | 2552 |
| MMU26-3 | 650 | 540 | 10 | 193.2 | 98.6 | 151.7 | 69043 | 2557 |
| MMU26-4 | 750 | 540 | 10 | 178.3 | 105 | 140 | 69190 | 2562 |
| MMU27-1 | 600 | 500 | 11.5 | 230.6 | 108.6 | 181 | 67348 | 2693 |
| MMU27-2 | 600 | 420 | 15 | 296.8 | 139.8 | 233 | 57625 | 2745 |
| MMU28-1 | 600 | 500 | 12 | 244.8 | 115.3 | 192.2 | 70976 | 2840 |
| MMU28-2 | 600 | 480 | 13 | 265.1 | 124.9 | 208.1 | 67764 | 2823 |
| MMU28-3 | 600 | 560 | 10.2 | 206.8 | 97.4 | 162.3 | 75158 | 2683 |
| MMU28-4 | 600 | 565 | 10.5 | 216.1 | 101.8 | 169.6 | 80813 | 2860 |
| MMU28-5 | 600 | 590 | 10.8 | 225.6 | 106.2 | 177.1 | 89362 | 3029 |
| MMU30-1 | 500 | 500 | 13 | 299.6 | 117.6 | 235.2 | 75459 | 3018 |

MMU - Cold Formed Sheet Piles

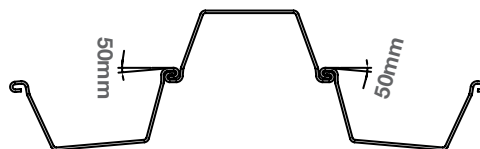
| Section | Width | Height | Thickness | Section Area | Weight | Weight | Moment of Inertia | Section Modulus |
|---------|-------|--------|-----------|--------------------|--------|-------------------|--------------------|--------------------|
| | mm | mm | mm | cm ² /m | kg/m | kg/m ² | cm ⁴ /m | cm ³ /m |
| MMU32-1 | 600 | 452 | 14 | 244.0 | 114.9 | 191.5 | 72320 | 3200 |
| MMU32-2 | 600 | 515 | 14 | 293.9 | 138.4 | 230.7 | 82664 | 3211 |
| MMU32-3 | 750 | 645 | 11 | 207.5 | 122.2 | 162.9 | 102790 | 3186 |
| MMU32-4 | 700 | 560 | 12 | 235.7 | 129.5 | 185 | 90815 | 3245 |
| MMU32-5 | 670 | 520 | 14 | 275.4 | 144.8 | 216.2 | 82566 | 3175 |
| MMU32-6 | 600 | 595 | 11.2 | 233.4 | 109.9 | 183.2 | 91276 | 3068 |
| MMU32-7 | 600 | 600 | 11.5 | 242.3 | 114.1 | 190.2 | 96141 | 3204 |
| MMU32-8 | 600 | 605 | 11.8 | 251.3 | 118.4 | 197.3 | 102098 | 3375 |
| MMU35-1 | 700 | 560 | 13 | 261.3 | 143.6 | 205.1 | 97765 | 3492 |
| MMU35-2 | 750 | 608 | 12 | 231.2 | 136.1 | 181.5 | 105070 | 3456 |
| MMU37-1 | 750 | 610 | 13 | 256.4 | 151 | 201.3 | 114296 | 3746 |
| MMU37-2 | 700 | 600 | 13.5 | 268.9 | 147.8 | 211.1 | 111822 | 3730 |
| MMU40-1 | 750 | 610 | 14 | 278.3 | 163.9 | 218.5 | 122670 | 4021 |
| MMU40-2 | 700 | 580 | 15 | 304.6 | 167.4 | 239.1 | 115719 | 3990 |
| MMU43-1 | 750 | 610 | 15 | 300.6 | 177 | 236 | 132280 | 4338 |
| MMU43-2 | 750 | 615 | 16 | 316.6 | 186.4 | 248.5 | 133633 | 4345 |
| MMU46-1 | 750 | 630 | 16 | 327.0 | 192.5 | 256.7 | 145784 | 4628 |

Interlocks



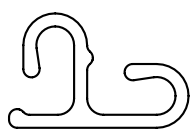
MMU Interlocks are manufactured to EN 10249-2 Standards. The hook and grip type interlocks provide up to 15-20 degrees in swing angle while ensuring good water tightness in the retaining wall.

Circular Cofferdams



With up to 20 degrees flexibility in the interlocks, a circular excavation can be carried out with MMU sheet piles effectively.

Corner Pile Requirements



CFC 90



CFTee



CF



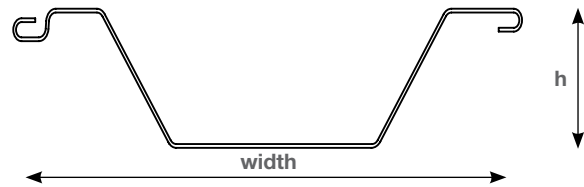
BCF I



BCF II

Collaboration with Pilepro in the USA has given us access to a whole host of connectors for your cold formed needs.

Advantages of MLL Sheet Piles



- ✓ Replaces JIS Hat Type Sheet Piles
- ✓ Ease of piling and handling
- ✓ Can be welded together with H Piles to form Stronger Sections

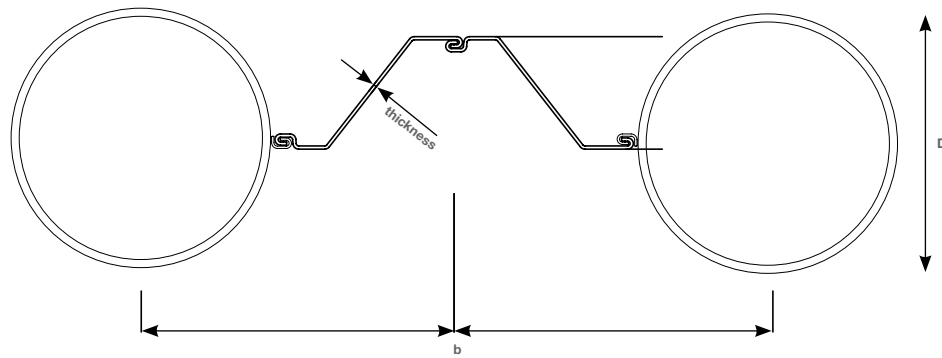
| Section | Width | Height | Thickness | Section Area | Weight | Weight | Moment of Inertia | Section Modulus |
|---------|-------|--------|-----------|--------------------|--------|-------------------|--------------------|--------------------|
| | mm | mm | mm | cm ² /m | kg/m | kg/m ² | cm ⁴ /m | cm ³ /m |
| MLL2-1 | 700 | 146 | 4 | 56.1 | 30.8 | 44 | 1945 | 266 |
| MLL2-2 | 900 | 155 | 4 | 53.2 | 37.7 | 41.8 | 2415 | 284 |
| MLL3-1 | 700 | 147 | 5 | 70.3 | 38.6 | 55.2 | 2427 | 330 |
| MLL3-2 | 700 | 148 | 6 | 84.1 | 46.2 | 66 | 2907 | 392 |
| MLL4-1 | 600 | 249.5 | 3.5 | 60.9 | 28.7 | 47.8 | 5883 | 470 |
| MLL4-2 | 700 | 149 | 7 | 98.1 | 53.9 | 77 | 3352 | 450 |
| MLL5-1 | 700 | 150 | 8 | 112.1 | 61.6 | 88 | 3814 | 508 |
| MLL5-2 | 705 | 152 | 8 | 113.1 | 62.6 | 88.8 | 3950 | 519 |
| MLL5-3 | 750 | 250 | 4 | 63.6 | 37.4 | 49.9 | 6582 | 526 |
| MLL5-4 | 600 | 250 | 4 | 69.7 | 32.8 | 54.7 | 6711 | 537 |
| MLL6-1 | 700 | 251 | 5 | 82.5 | 45.4 | 64.8 | 8408 | 670 |
| MLL6-2 | 750 | 251 | 5 | 81.0 | 47.7 | 63.6 | 8441 | 672 |
| MLL7-1 | 921 | 252 | 6 | 91.2 | 65.9 | 71.6 | 9941 | 789 |
| MLL7-2 | 750 | 252 | 5.7 | 93.8 | 55.2 | 73.6 | 9604 | 763 |
| MLL8-1 | 750 | 252 | 6 | 98.1 | 57.8 | 77 | 10138 | 804 |
| MLL8-2 | 750 | 252 | 6.2 | 101.4 | 59.7 | 79.6 | 10470 | 830 |
| MLL9-1 | 750 | 253 | 7 | 115.2 | 67.8 | 90.4 | 11810 | 933 |
| MLL9-2 | 900 | 253 | 7 | 107.6 | 76 | 84.5 | 11607 | 917 |
| MLL9-3 | 700 | 311.5 | 5.5 | 99.4 | 54.6 | 78 | 14634 | 939 |
| MLL9-4 | 900 | 312 | 7 | 92.9 | 65.6 | 72.9 | 13931 | 893 |
| MLL10-1 | 750 | 254 | 8 | 131.5 | 77.4 | 103.2 | 13345 | 1050 |
| MLL10-2 | 900 | 254 | 8 | 122.8 | 86.8 | 96.4 | 13138 | 1034 |
| MLL10-3 | 900 | 313 | 7 | 109.2 | 77.2 | 85.7 | 16317 | 1042 |
| MLL11-1 | 750 | 255 | 9 | 150.2 | 88.4 | 117.9 | 15256 | 1196 |
| MLL11-2 | 900 | 255 | 9 | 140.0 | 98.9 | 109.9 | 14983 | 1175 |
| MLL11-3 | 700 | 312.5 | 6.5 | 117.7 | 64.7 | 92.4 | 17327 | 1108 |
| MLL12-1 | 1400 | 314.5 | 8.5 | 115.3 | 126.7 | 90.5 | 19077 | 1213 |
| MLL12-2 | 1540 | 349 | 8.5 | 111.7 | 135.1 | 87.7 | 21966 | 1259 |
| MLL12-2 | 900 | 314 | 8 | 124.8 | 88.2 | 98 | 18436 | 1174 |
| MLL12-3 | 900 | 348 | 7 | 114.9 | 81.2 | 90.2 | 21125 | 1214 |
| MLL12-4 | 1340 | 314.5 | 8.5 | 116.7 | 122.7 | 91.6 | 19040 | 1210 |
| MLL13-1 | 1400 | 315.5 | 9.5 | 127.4 | 140 | 100 | 20973 | 1330 |
| MLL13-2 | 1540 | 349.5 | 9 | 117.6 | 142.2 | 92.3 | 22949 | 1312 |
| MLL13-3 | 750 | 347.5 | 7 | 129.8 | 76.4 | 101.9 | 23218 | 1342 |
| MLL13-4 | 900 | 349 | 8 | 131.2 | 92.7 | 103 | 23944 | 1372 |
| MLL13-5 | 1340 | 315.5 | 9.5 | 128.9 | 135.6 | 101.2 | 20916 | 1326 |
| MLL14-1 | 1400 | 316 | 10 | 133.4 | 146.6 | 104.7 | 21919 | 1387 |
| MLL14-2 | 1400 | 316.5 | 10.5 | 139.9 | 153.7 | 109.8 | 22678 | 1432 |
| MLL14-3 | 1540 | 350 | 9.5 | 123.4 | 149.3 | 96.9 | 23847 | 1362 |
| MLL14-4 | 1540 | 350.5 | 10 | 129.6 | 156.7 | 101.7 | 24977 | 1425 |
| MLL14-5 | 750 | 348 | 7.5 | 137.6 | 81 | 108 | 24529 | 1414 |
| MLL14-6 | 1340 | 316.5 | 10.5 | 141.4 | 148.8 | 111 | 22593 | 1428 |
| MLL14-7 | 900 | 316 | 10 | 156.4 | 110.5 | 122.8 | 22978 | 1454 |
| MLL15-1 | 750 | 348.5 | 8 | 147.1 | 86.6 | 115.5 | 26256 | 1512 |
| MLL15-2 | 900 | 350 | 9 | 147.6 | 104.3 | 115.9 | 26683 | 1525 |
| MLL16-1 | 1260 | 379 | 8.5 | 130.4 | 129.1 | 102.4 | 31326 | 1653 |

MLL - Cold Formed Sheet Piles

| Section | Width | Height | Thickness | Section Area | Weight | Weight | Moment of Inertia | Section Modulus |
|---------|-------|--------|-----------|--------------------|--------|-------------------|--------------------|--------------------|
| | mm | mm | mm | cm ² /m | kg/m | kg/m ² | cm ⁴ /m | cm ³ /m |
| MLL16-2 | 750 | 349 | 8.5 | 158.1 | 93.1 | 124.1 | 28026 | 1613 |
| MLL17-1 | 1400 | 423.5 | 8.5 | 126.0 | 138.5 | 98.9 | 36954 | 1745 |
| MLL17-2 | 750 | 349.5 | 9 | 167.4 | 98.5 | 131.4 | 29618 | 1702 |
| MLL18-1 | 1260 | 380 | 9.5 | 144.5 | 142.9 | 113.4 | 34659 | 1823 |
| MLL18-2 | 1400 | 424 | 9 | 132.4 | 145.5 | 103.9 | 38234 | 1802 |
| MLL18-3 | 750 | 350 | 9.5 | 176.7 | 104 | 138.7 | 31305 | 1798 |
| MLL18-4 | 1600 | 449 | 8.5 | 122.7 | 154.2 | 96.3 | 41530 | 1850 |
| MLL19-1 | 1260 | 381 | 10 | 151.2 | 149.5 | 118.7 | 35936 | 1886 |
| MLL19-2 | 1400 | 424.5 | 9.5 | 139.4 | 153.1 | 109.4 | 40303 | 1898 |
| MLL19-3 | 750 | 350.5 | 10 | 186.0 | 109.5 | 146 | 33050 | 1893 |
| MLL20-1 | 1260 | 381.5 | 10.5 | 161.8 | 160.1 | 127 | 39065 | 2047 |
| MLL20-2 | 1400 | 425 | 10 | 145.2 | 159.6 | 114 | 41428 | 1948 |
| MLL20-3 | 1600 | 450 | 9.5 | 136.9 | 172 | 107.5 | 46336 | 2059 |
| MLL22-1 | 1400 | 475 | 10 | 150.1 | 165 | 117.8 | 52048 | 2191 |
| MLL22-2 | 1600 | 451 | 10.5 | 149.8 | 188.2 | 117.6 | 49213 | 2182 |
| MLL23-1 | 1600 | 474.5 | 9.5 | 144.1 | 181 | 113.1 | 55650 | 2345 |
| MLL24-1 | 1260 | 426.2 | 11.2 | 178.2 | 176.3 | 139.9 | 52149 | 2446 |
| MLL24-2 | 1400 | 476.2 | 11.2 | 169.0 | 185.8 | 132.7 | 58512 | 2457 |
| MLL25-1 | 1600 | 475.5 | 10.5 | 158.7 | 199.4 | 124.6 | 60208 | 2532 |
| MLL26-1 | 1260 | 427.2 | 12.2 | 194.1 | 192 | 152.4 | 55990 | 2621 |
| MLL26-2 | 1400 | 477.2 | 12.2 | 183.7 | 201.9 | 144.2 | 62045 | 2601 |
| MLL27-1 | 1600 | 476.5 | 11.5 | 172.5 | 216.6 | 135.4 | 65401 | 2745 |
| MLL28-1 | 1260 | 428.2 | 13.2 | 211.7 | 209.4 | 166.2 | 60145 | 2808 |
| MLL28-2 | 1400 | 478.2 | 13.2 | 199.9 | 219.7 | 156.9 | 66192 | 2768 |
| MLL28-3 | 1500 | 509.2 | 10.2 | 166.8 | 196.4 | 130.9 | 72606 | 2851 |
| MLL29-1 | 1400 | 510.2 | 11.2 | 179.6 | 197.5 | 141 | 74056 | 2902 |
| MLL30-1 | 1500 | 510.2 | 11.2 | 179.0 | 210.7 | 140.5 | 76918 | 3015 |
| MLL31-1 | 1400 | 511 | 12 | 193.6 | 212.8 | 152 | 79733 | 3120 |
| MLL32-1 | 1400 | 511.5 | 12.5 | 201.9 | 221.9 | 158.5 | 80906 | 3163 |
| MLL32-2 | 1500 | 511 | 12 | 192.7 | 226.9 | 151.3 | 82772 | 3239 |
| MLL33-1 | 1400 | 512 | 13 | 209.3 | 230 | 164.3 | 84655 | 3306 |
| MLL40-1 | 1160 | 549.5 | 13.5 | 249.3 | 227 | 195.7 | 111652 | 4064 |
| MLL42-1 | 1160 | 550 | 14 | 259.2 | 236.1 | 203.5 | 115910 | 4215 |
| MLL44-1 | 1160 | 550.5 | 14.5 | 274.9 | 250.3 | 215.8 | 121797 | 4420 |
| MLL46-1 | 1160 | 551 | 15 | 285.2 | 259.8 | 223.9 | 126788 | 4602 |

| Section | Width | Height | Thickness | Section Area | Weight | Weight | Moment of Inertia | Section Modulus |
|---------|-------|--------|-----------|--------------------|--------|-------------------|--------------------|--------------------|
| | mm | mm | mm | cm ² /m | kg/m | kg/m ² | cm ⁴ /m | cm ³ /m |
| MLT1-1 | 600 | 78 | 6 | 80.9 | 38.1 | 63.5 | 704 | 180 |
| MLT1-2K | 600 | 78 | 6 | 81.8 | 38.5 | 64.2 | 726 | 185 |
| MLT1-3 | 650 | 78 | 6 | 79.4 | 40.5 | 62.3 | 700 | 180 |
| MLT1-4 | 550 | 78 | 6 | 79.9 | 34.8 | 62.7 | 698 | 178 |
| MLT1-5 | 500 | 78 | 6 | 84.6 | 33.2 | 66.4 | 688 | 176 |
| MLT1-6K | 742 | 92 | 6 | 69.8 | 40.7 | 54.8 | 896 | 194 |
| MLT1-7K | 400 | 50 | 6 | 70.7 | 22.2 | 55.5 | 250 | 100 |
| MLT1-8K | 400 | 48 | 4 | 47.1 | 14.8 | 37 | 165 | 69 |
| MLT1-9 | 300 | 36.5 | 3.4 | 48.4 | 11.4 | 38 | 84 | 46 |
| MLT1-10 | 330 | 37 | 4 | 51.7 | 13.4 | 40.6 | 99 | 53 |
| MLT1-11 | 400 | 36.6 | 3.5 | 43.3 | 13.6 | 34 | 85 | 47 |
| MLT1-12 | 400 | 37 | 4 | 49.7 | 15.6 | 39 | 92 | 53 |
| MLT2-1 | 600 | 80 | 8 | 108.0 | 50.9 | 84.8 | 942 | 237 |
| MLT2-2K | 742 | 94 | 8 | 93.4 | 54.4 | 73.3 | 1200 | 254 |
| MLT2-3K | 600 | 80 | 8 | 108.4 | 51.1 | 85.1 | 970 | 241 |
| MLT2-4K | 742 | 93 | 7 | 81.5 | 47.5 | 64 | 1045 | 225 |
| MLT2-8 | 880 | 152 | 4 | 59.6 | 41.2 | 46.8 | 1897 | 251 |
| MLT3-1 | 880 | 154 | 6 | 89.6 | 61.9 | 70.3 | 2848 | 372 |
| MLT4-1 | 880 | 156 | 8 | 122.4 | 84.6 | 96.1 | 3880 | 500 |

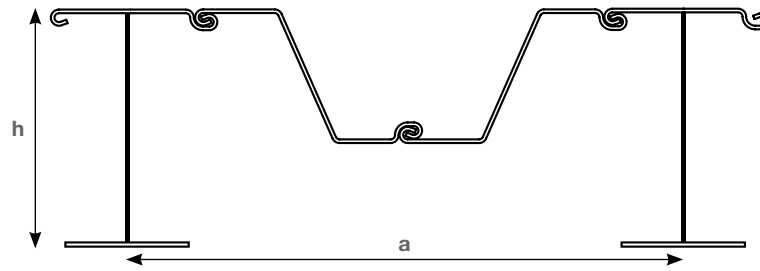
Pipe and Sheet Pile Combi Wall



Refer to Pipes Section page 20 for more combination & pipes sizes.

| Section | Diameter | | Intermediary Sheet Piles: Duple MMZ18-1 | | | | Intermediary Sheet Piles: Triple MMU18-3 | | | |
|---------------|----------|-----------|---|-------------------|--------------------|--------------------|--|-------------------|--------------------|--------------------|
| | D | Thickness | b | Mass | Isys/m | Wsys/m | bsys | Mass | Isys/m | Wsys/m |
| | mm | mm | m | kg/m ² | cm ⁴ /m | cm ³ /m | m | kg/m ³ | cm ⁴ /m | cm ³ /m |
| MMOZ1 | 914 | 10 | 2.23 | 175 | 149180 | 3264 | 2.77 | 170 | 127768 | 2796 |
| MMOZ2 | 914 | 12 | 2.23 | 194 | 174132 | 3810 | 2.77 | 186 | 147863 | 3236 |
| MMOZ3 | 914 | 14 | 2.23 | 214 | 198750 | 4349 | 2.77 | 202 | 167622 | 3669 |
| MMOZ4 | 1016 | 12 | 2.34 | 199 | 222648 | 4383 | 2.88 | 190 | 188201 | 3705 |
| MMOZ5 | 1016 | 14 | 2.34 | 220 | 255271 | 5025 | 2.88 | 207 | 214699 | 4226 |
| MMOZ6 | 1016 | 16 | 2.34 | 240 | 287501 | 5659 | 2.88 | 224 | 240877 | 4742 |
| MMOZ7 | 1219 | 14 | 2.54 | 230 | 395902 | 6496 | 3.08 | 216 | 333340 | 5469 |
| MMOZ8 | 1219 | 16 | 2.54 | 253 | 447898 | 7349 | 3.08 | 235 | 376217 | 6173 |
| MMOZ9 | 1219 | 18 | 2.54 | 276 | 499372 | 8193 | 3.08 | 254 | 418663 | 6869 |
| MMOZ10 | 1422 | 16 | 2.74 | 263 | 652705 | 9180 | 3.28 | 245 | 551760 | 7760 |
| MMOZ11 | 1422 | 18 | 2.74 | 288 | 729298 | 10257 | 3.28 | 266 | 615751 | 8660 |
| MMOZ12 | 1422 | 20 | 2.74 | 313 | 805231 | 11325 | 3.28 | 287 | 679191 | 9553 |
| MMOZ13 | 1524 | 16 | 2.84 | 268 | 772873 | 10143 | 3.38 | 249 | 655795 | 8606 |
| MMOZ14 | 1524 | 18 | 2.84 | 294 | 864225 | 11342 | 3.38 | 271 | 732570 | 9614 |
| MMOZ15 | 1524 | 20 | 2.84 | 320 | 954844 | 12531 | 3.38 | 293 | 808728 | 10613 |
| MMOZ16 | 1626 | 18 | 2.95 | 299 | 1012366 | 12452 | 3.49 | 276 | 861615 | 10598 |
| MMOZ17 | 1626 | 20 | 2.95 | 326 | 1119126 | 13765 | 3.49 | 299 | 951837 | 17089 |
| MMOZ18 | 1626 | 22 | 2.95 | 352 | 1225081 | 15069 | 3.49 | 321 | 1041380 | 12809 |
| MMOZ19 | 1829 | 18 | 3.15 | 308 | 1347086 | 14730 | 3.69 | 285 | 1155634 | 12637 |
| MMOZ20 | 1829 | 20 | 3.15 | 336 | 1490373 | 16297 | 3.69 | 309 | 1277946 | 13974 |
| MMOZ21 | 1829 | 22 | 3.15 | 364 | 1632701 | 17853 | 3.69 | 333 | 1399440 | 15303 |
| MMOZ22 | 2032 | 20 | 3.35 | 346 | 1921455 | 18912 | 3.89 | 319 | 1660297 | 16342 |
| MMOZ23 | 2032 | 22 | 3.35 | 375 | 2106103 | 20729 | 3.89 | 344 | 1819326 | 17907 |
| MMOZ24 | 2032 | 24 | 3.35 | 404 | 2289640 | 22536 | 3.89 | 369 | 1977398 | 19463 |
| MMOZ25 | 2540 | 21 | 3.86 | 381 | 3426296 | 26979 | 4.4 | 353 | 3010605 | 23706 |
| MMOZ26 | 2540 | 23 | 3.86 | 413 | 3742696 | 29470 | 4.4 | 381 | 3288174 | 25891 |
| MMOZ27 | 2540 | 25 | 3.86 | 445 | 4057578 | 31949 | 4.4 | 409 | 3564411 | 28066 |
| MMOZ28 | 2997 | 21 | 4.32 | 396 | 5045198 | 33668 | 4.86 | 369 | 4488631 | 29954 |
| MMOZ29 | 2997 | 23 | 4.32 | 429 | 5513686 | 36795 | 4.86 | 399 | 4905033 | 32733 |
| MMOZ30 | 2997 | 25 | 4.32 | 463 | 5980273 | 39908 | 4.86 | 429 | 5319744 | 35500 |

MMHZ - Cold Formed Combi Wall



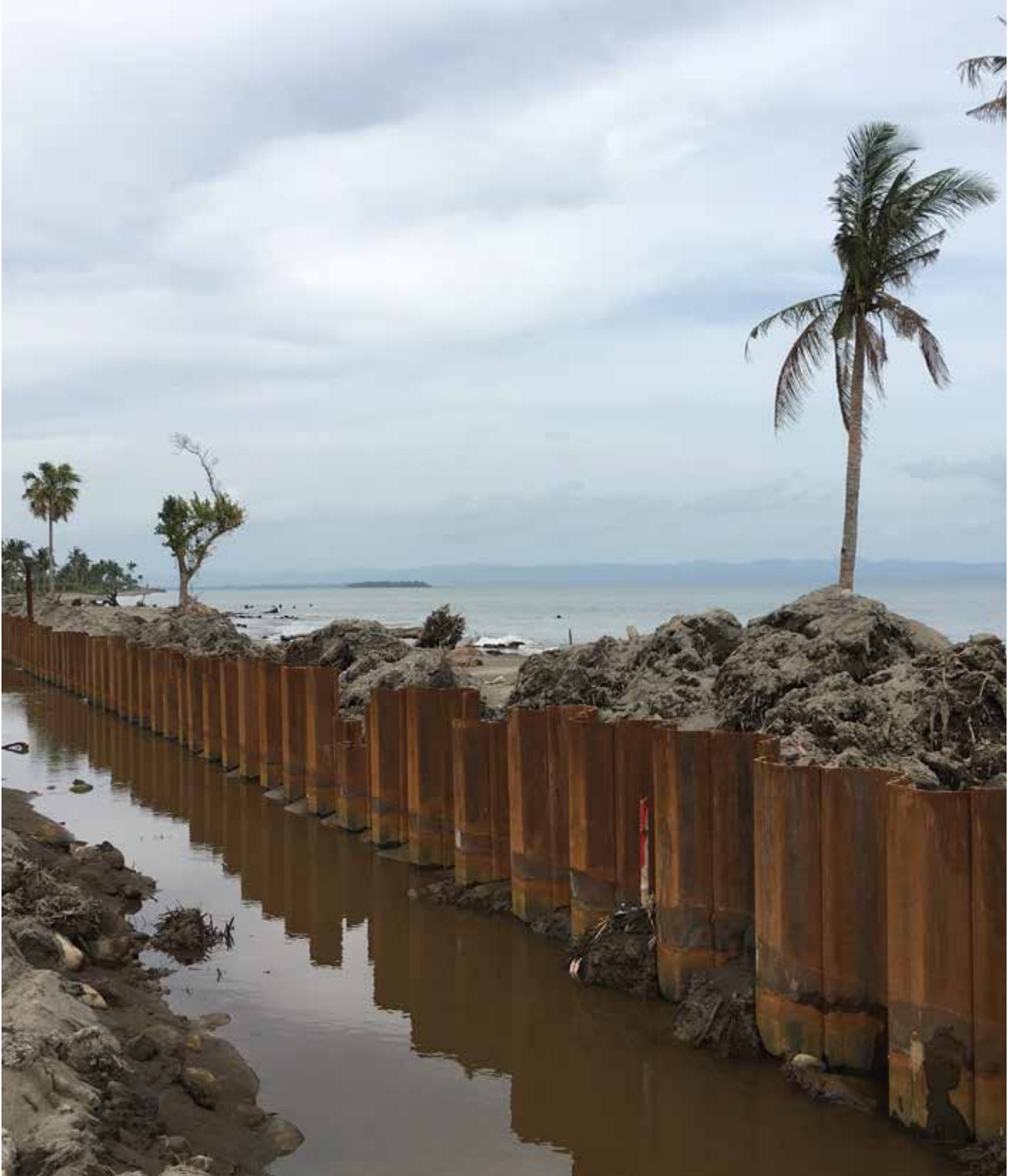
Advances in rolling technology has enabled this breakthrough combination. Beams made of high tensile elements giving excellent section modulus to weight ratio. The designs have been conceptualised to meet and replace commonly found Hot Rolled alternatives such as HZM from Arcelormittal and piles from Peiner.

| Section HZ+MMZ13-700 | Width a | Height h | Beam Width | Section Area | Weight | Moment of Inertia | Section Modulus |
|-------------------------|------------|-------------|---------------|--------------------|-------------------|----------------------|--------------------|
| | mm | mm | mm | cm ² /m | kg/m ² | cm ⁴ /m | cm ³ /m |
| MMHZ I 880A | 1.93 | 830 | 530 | 255 | 200 | 215290 | 4815 |
| MMHZ I 880B | 1.93 | 830 | 530 | 270.4 | 212 | 232560 | 5230 |
| MMHZ I 880C | 1.93 | 830 | 530 | 277.4 | 218 | 244270 | 5485 |
| MMHZ I 1080A | 1.93 | 1075 | 530 | 293.6 | 230 | 404030 | 7065 |
| MMHZ I 1080B | 1.93 | 1075 | 530 | 304.8 | 239 | 435500 | 7615 |
| MMHZ I 1080C | 1.93 | 1075 | 530 | 324.8 | 255 | 473410 | 8295 |
| MMHZ I 1080D | 1.93 | 1075 | 530 | 341.1 | 268 | 510400 | 8920 |
| MMHZ I 1180A | 1.93 | 1075 | 530 | 354.1 | 278 | 538200 | 9375 |
| MMHZ I 1180B | 1.93 | 1075 | 530 | 362.4 | 284 | 562590 | 9800 |
| MMHZ I 1180C | 1.93 | 1085 | 530 | 378.5 | 297 | 598400 | 10355 |
| MMHZ I 1180D | 1.93 | 1090 | 530 | 391.2 | 307 | 626580 | 10875 |

| Section HZ+MMZ18-700 | Width a | Height h | Beam Width | Section Area | Weight | Moment of Inertia | Section Modulus |
|-------------------------|------------|-------------|---------------|--------------------|-------------------|----------------------|--------------------|
| | mm | mm | mm | cm ² /m | kg/m ² | cm ⁴ /m | cm ³ /m |
| MMHZ I 880A | 1.93 | 830 | 530 | 274.1 | 215 | 240500 | 5380 |
| MMHZ I 880B | 1.93 | 830 | 530 | 290.5 | 228 | 259000 | 5820 |
| MMHZ I 880C | 1.93 | 830 | 530 | 298 | 234 | 271570 | 6100 |
| MMHZ I 1080A | 1.93 | 1075 | 530 | 315.5 | 248 | 443030 | 7745 |
| MMHZ I 1080B | 1.93 | 1075 | 530 | 327.5 | 257 | 476790 | 8340 |
| MMHZ I 1080C | 1.93 | 1075 | 530 | 349 | 274 | 517420 | 9065 |
| MMHZ I 1080D | 1.93 | 1075 | 530 | 366.4 | 288 | 557070 | 9735 |
| MMHZ I 1180A | 1.93 | 1075 | 530 | 380.4 | 299 | 586870 | 10220 |
| MMHZ I 1180B | 1.93 | 1075 | 530 | 389.3 | 306 | 613030 | 10680 |
| MMHZ I 1180C | 1.93 | 1085 | 530 | 406.5 | 319 | 651410 | 11275 |
| MMHZ I 1180D | 1.93 | 1090 | 530 | 420.2 | 330 | 681600 | 11830 |

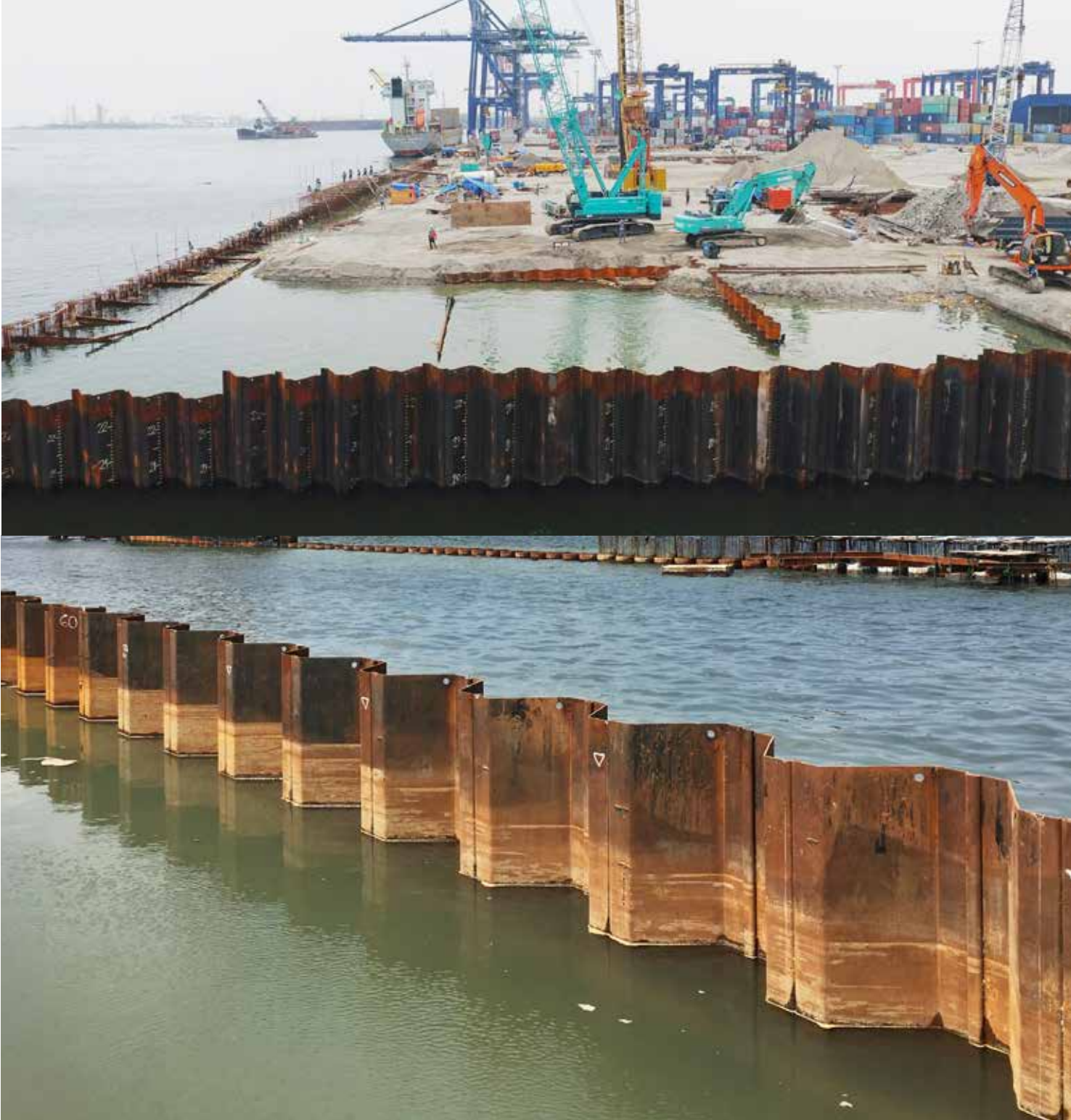
| Section HZ+MMZ26-1 | Width a | Height h | Beam Width | Section Area | Weight | Moment of Inertia | Section Modulus |
|-----------------------|------------|-------------|---------------|--------------------|-------------------|----------------------|--------------------|
| | mm | mm | mm | cm ² /m | kg/m ² | cm ⁴ /m | cm ³ /m |
| MMHZ I 880A | 1.79 | 830 | 530 | 325.9 | 256 | 268850 | 6010 |
| MMHZ I 880B | 1.79 | 830 | 530 | 343.6 | 270 | 288770 | 6490 |
| MMHZ I 880C | 1.79 | 830 | 530 | 351.7 | 276 | 302320 | 6790 |
| MMHZ I 1080A | 1.79 | 1075 | 530 | 370.7 | 291 | 487340 | 8520 |
| MMHZ I 1080B | 1.79 | 1075 | 530 | 383.6 | 301 | 523750 | 9160 |
| MMHZ I 1080C | 1.79 | 1075 | 530 | 406.7 | 319 | 567510 | 9940 |
| MMHZ I 1080D | 1.79 | 1075 | 530 | 425.5 | 334 | 610240 | 10665 |
| MMHZ I 1180A | 1.79 | 1075 | 530 | 440.5 | 346 | 642340 | 11185 |
| MMHZ I 1180B | 1.79 | 1075 | 530 | 450.1 | 353 | 670550 | 11685 |
| MMHZ I 1180C | 1.79 | 1085 | 530 | 468.7 | 368 | 711900 | 12320 |
| MMHZ I 1180D | 1.79 | 1090 | 530 | 483.4 | 379 | 744420 | 12920 |

Tacloban Storm Surge Barrier



Tacloban Storm Surge Barrier Project
Supplied MMU 13-6 Steel Sheet Piles

Manila North Harbour Port Inc



Deepening of Dredge in existing Pier
Supplied MMZ Sheet Piles complete with Tie Rods

Taguig Flood Control



Taguig River Flood Control
Supplied MMU Profile Sheet Piles