HIRNBÖCK
STABAU

**PURCHASE / REPURCHASE / RENTAL**

TRADITION AND EXPERTISE – HIRNBÖCK STABAU GMBH

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## HIRNBÖCK STABAU GMBH

### TRADITION AND EXPERTISE

In 2004, Friedrich Hirnböck founded Spundwand Handels- und Vermietungs GmbH, marking the company's entry into the trade of steel sheet piling. His father, Friedrich Hirnböck Sr., successfully introduced steel sheet piling to Austria over 50 years ago through his company Friedrich Hirnböck, Stahlhandel, Salzburg. In 2012, STABAU Holding GmbH, based in Haida, Germany, acquired a 50% stake in Spundwand Handels- und Vermietungs GmbH, leading to the renaming of the company as Hirnböck Stabau GmbH.

Together with our partner, STABAU Holding GmbH, we have an inventory of approximately 100,000 tonnes of new and used steel profiles for the specialist deep foundation sector.

Our company is your specialist partner for the **purchase, repurchase, and rental** of:

- **Steel sheet piles (hot-rolled / cold-formed)**
  for excavation support / flood protection / quay walls / sewage treatment plants / pumping stations / groundwater barriers.
- **Trench sheets** for canal and trench shoring.
- **Steel beams** for excavation shoring, scaffolding, temporary bridges, double-U profiles for walings and soldier pile walls.
- **Steel pipes** for foundations of noise barriers, forest roads, stream diversions, horizontal pressing, excavation bracing, tubular sheet pile walls, and tubular piles.
- **Rails** for driven piles and crane runways.
- **Steel plates** for trench covers, base plates for construction roads, and storage areas.

## OUR RANGE OF SERVICES

› **Consultation**
We offer expert advice on all your queries, drawing on our extensive experience in steel trading and deep foundation engineering.

› **Material Availability**
Our well-stocked warehouse, along with unrestricted access to our partner's storage facilities, ensures short-term availability of the required or an equivalent profile.

› **Sales**
Available for permanent installation in structures or to replenish your own stock.

› **Sales with Repurchase Agreement**
Ideal for projects where it is uncertain whether the profiles will be removed after use. We commit to repurchasing the delivered profiles at pre-agreed terms.

› **Rental**
A cost-effective solution for temporary applications. No need to have your own inventory, thus avoiding capital tie-up.

› **Delivery**
Our profiles are available for pick-up from our warehouse or can be delivered to your site by our logistics partners on fixed schedules.


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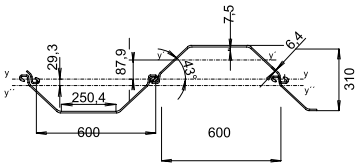
# SHEET PILES

# VL PROFILES

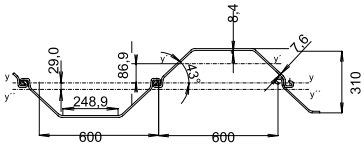
## STANDARD PROFILES

### VL 601



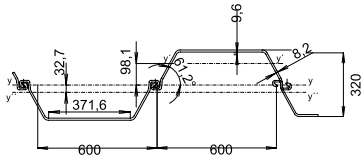

| | Weight | Section Modulus | Moment of Inertia |
|---|---|---|---|
| | kg/m | cm³/m | cm⁴/m |
| Per SS | 46.3 | 221 | 2360 |
| Per DS | 92.6 | 893 | 13836 |
| Per TS | 138.9 | 1044 | 19235 |
| Per m of wall | 77.2 | 744 | 11530 |

### VL 602



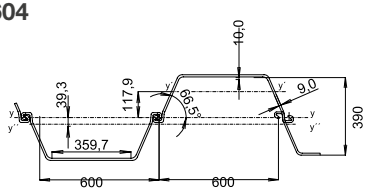

| | Weight | Section Modulus | Moment of Inertia |
|---|---|---|---|
| | kg/m | cm³/m | cm⁴/m |
| Per SS | 53.4 | 252 | 2698 |
| Per DS | 106.8 | 1010 | 15655 |
| Per TS | 160.2 | 1184 | 21773 |
| Per m of wall | 89.0 | 842 | 13046 |

### VL 603



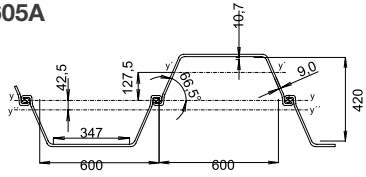

| | Weight | Section Modulus | Moment of Inertia |
|---|---|---|---|
| | kg/m | cm³/m | cm⁴/m |
| Per SS | 64.2 | 304 | 3641 |
| Per DS | 128.4 | 1440 | 23039 |
| Per TS | 192.6 | 1657 | 31933 |
| Per m of wall | 107.0 | 1200 | 19199 |

### VL 604




| | Weight | Section Modulus | Moment of Inertia |
|---|---|---|---|
| | kg/m | cm³/m | cm⁴/m |
| Per SS | 73.1 | 426 | 5984 |
| Per DS | 146.2 | 1941 | 37857 |
| Per TS | 219.3 | 2240 | 52471 |
| Per m of wall | 121.8 | 1618 | 31548 |

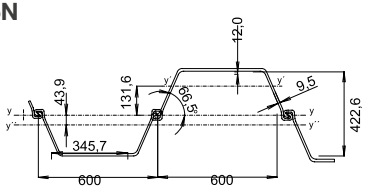
### VL 605A




| | Weight | Section Modulus | Moment of Inertia |
|---|---|---|---|
| | kg/m | cm³/m | cm⁴/m |
| Per SS | 76.5 | 475 | 7113 |
| Per DS | 153.0 | 2185 | 45892 |
| Per TS | 229.5 | 2517 | 63560 |
| Per m of wall | 127.5 | 1821 | 38243 |

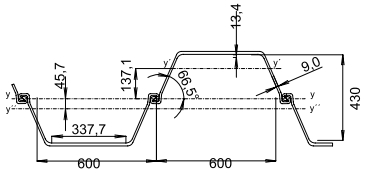
# VL PROFILES

## VL 605N



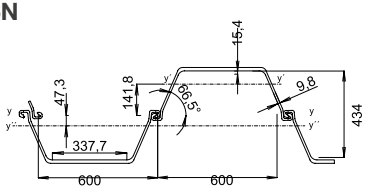

| | Weight | Section Modulus | Moment of Inertia |
|---|---|---|---|
| | kg/m | cm3/m | cm⁴/m |
| Per SS | 82.1 | 486 | 7448 |
| Per DS | 164.2 | 2423 | 51197 |
| Per TS | 246.4 | 2773 | 70759 |
| Per m of wall | 136.9 | 2019 | 42664 |

## VL 606A



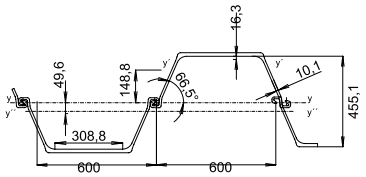

| | Weight | Section Modulus | Moment of Inertia |
|---|---|---|---|
| | kg/m | cm3/m | cm⁴/m |
| Per SS | 85.4 | 500 | 7981 |
| Per DS | 170.8 | 2646 | 56883 |
| Per TS | 256.2 | 3011 | 78504 |
| Per m of wall | 142.3 | 2205 | 47402 |

## VL 606N



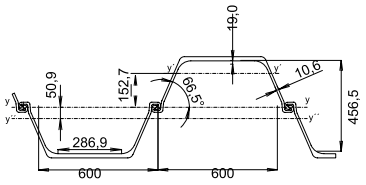

| | Weight | Section Modulus | Moment of Inertia |
|---|---|---|---|
| | kg/m | cm3/m | cm⁴/m |
| Per SS | 94.1 | 520 | 8545 |
| Per DS | 188.2 | 3008 | 65266 |
| Per TS | 282.3 | 3401 | 89870 |
| Per m of wall | 156.8 | 2506 | 54389 |

## VL 628




| | Weight | Section Modulus | Moment of Inertia |
|---|---|---|---|
| | kg/m | cm3/m | cm⁴/m |
| Per SS | 101.8 | 586 | 10053 |
| Per DS | 203.6 | 3409 | 77568 |
| Per TS | 305.4 | 3852 | 106775 |
| Per m of wall | 169.6 | 2841 | 64640 |

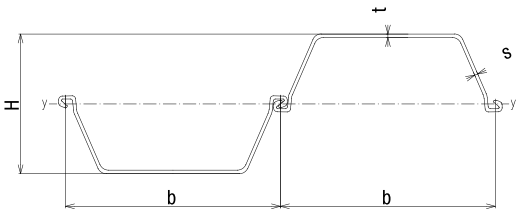
## VL 607




| | Weight | Section Modulus | Moment of Inertia |
|---|---|---|---|
| | kg/m | cm3/m | cm⁴/m |
| Per SS | 112.4 | 605 | 10617 |
| Per DS | 224.8 | 3854 | 87960 |
| Per TS | 337.1 | 4328 | 120819 |
| Per m of wall | 187.3 | 3211 | 73300 |

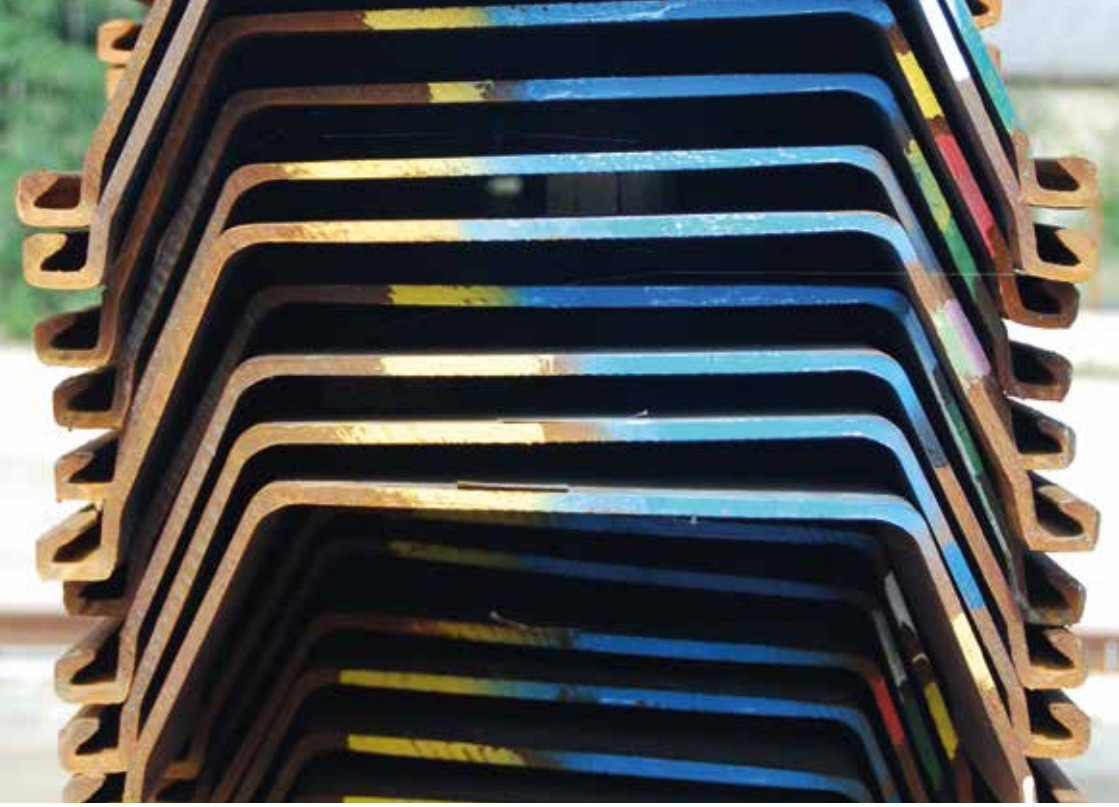
* SS = Single Sheet Pile / DS = Double Sheet Pile / TS = Triple Sheet Pile
The section modulus values for the profiles may only be used in static load calculations if at least every second sheet pile interlock in the wall is crimped to absorb shear forces.

# VL PROFILES



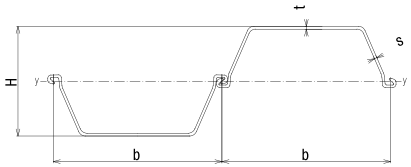

| Profile | Width | Height | Back Thickness | Web-Thickness | Weight | | | Section Modulus | Moment of Inertia |
|---|---|---|---|---|---|---|---|---|---|
| | w | h | bt | wt | SS | DS | Wall | | |
| | mm | mm | mm | mm | kg/m | kg/m | kg/m² | cm³/m | cm⁴/m |
| IIIn | 400 | 290.0 | 13.0 | 9.0 | 62.2 | 124.4 | 155.5 | 1600 | 23206 |
| | | | | | | | | | |
| VL 504 | 500 | 340.0 | 12.0 | 9.0 | 66.6 | 133.2 | 133.2 | 1504 | 25575 |
| VL 504A | 500 | 340.0 | 11.2 | 8.7 | 63.5 | 127.0 | 127.0 | 1423 | 24198 |
| VL 504K | 500 | 340.0 | 13.0 | 9.3 | 70.3 | 140.6 | 140.6 | 1602 | 27233 |
| VL 507A | 500 | 437.0 | 17.5 | 10.2 | 92.3 | 184.6 | 184.6 | 2800 | 61185 |
| | | | | | | | | | |
| VL 601 | 600 | 310.0 | 7.5 | 6.4 | 46.3 | 92.6 | 77.2 | 744 | 11530 |
| VL 601FP | 600 | 310.0 | 7.2 | 7.0 | 47.4 | 94.8 | 79.0 | 745 | 11547 |
| VL 601K | 600 | 310.0 | 7.8 | 6.8 | 48.5 | 97.0 | 80.8 | 775 | 12019 |
| VL 602A | 600 | 310.0 | 8.0 | 7.3 | 51.3 | 102.6 | 85.5 | 806 | 12499 |
| VL 602 | 600 | 310.0 | 8.4 | 7.6 | 53.4 | 106.8 | 89.0 | 842 | 13046 |
| VL 602K | 600 | 310.0 | 8.8 | 7.9 | 55.4 | 110.8 | 92.3 | 877 | 13590 |
| VL 603 | 600 | 320.0 | 9.6 | 8.2 | 64.2 | 128.4 | 107.0 | 1200 | 19199 |
| VL 603A | 600 | 320.0 | 9.0 | 8.0 | 61.5 | 123.0 | 102.5 | 1138 | 18205 |
| VL 603KN | 600 | 320.0 | 9.8 | 8.6 | 66.9 | 133.8 | 111.5 | 1230 | 19682 |
| VL 603K | 600 | 320.0 | 9.8 | 9.0 | 67.8 | 135.6 | 113.0 | 1241 | 19853 |
| VL 603N | 600 | 381.2 | 9.8 | 7.9 | 63.4 | 126.8 | 105.7 | 1273 | 24269 |
| VL 603Z | 600 | 322.0 | 10.0 | 10.0 | 72.1 | 144.2 | 120.2 | 1300 | 20930 |
| VL 603Z11 | 600 | 320.0 | 11.0 | 11.0 | 78.6 | 157.2 | 131.0 | 1404 | 22470 |
| VL 604 | 600 | 390.0 | 10.0 | 9.0 | 73.1 | 146.2 | 121.8 | 1618 | 31548 |
| VL 604A | 600 | 390.0 | 9.6 | 8.8 | 71.0 | 142.0 | 118.3 | 1564 | 30495 |
| VL 604K | 600 | 390.0 | 10.4 | 9.2 | 75.2 | 150.4 | 125.3 | 1672 | 32600 |
| VL 605A | 600 | 420.0 | 10.7 | 9.0 | 76.5 | 153.0 | 127.5 | 1821 | 38243 |
| VL 605N | 600 | 422.6 | 12.0 | 9.5 | 82.1 | 164.2 | 136.9 | 2019 | 42664 |
| VL 606A | 600 | 430.0 | 13.4 | 9.0 | 85.4 | 170.8 | 142.3 | 2205 | 47402 |
| VL 606AN | 600 | 432.0 | 14.4 | 9.4 | 89.8 | 179.6 | 149.6 | 2355 | 50878 |
| VL 606N | 600 | 434.0 | 15.4 | 9.8 | 94.1 | 188.2 | 156.8 | 2506 | 54389 |
| VL 628-1.5 | 600 | 452.1 | 14.8 | 9.5 | 95.2 | 190.4 | 158.6 | 2607 | 58938 |
| VL 628AN | 600 | 453.3 | 15.4 | 9.8 | 97.9 | 195.8 | 163.1 | 2701 | 61219 |
| VL 628 | 600 | 455.1 | 16.3 | 10.1 | 101.8 | 203.6 | 169.6 | 2841 | 64640 |
| VL 628A | 600 | 454.7 | 16.1 | 10.0 | 100.8 | 201.6 | 168.0 | 2809 | 63856 |
| VL 628K | 600 | 455.9 | 16.7 | 10.3 | 103.5 | 207.0 | 172.5 | 2903 | 66165 |
| VL 607 | 600 | 456.5 | 19.0 | 10.6 | 112.4 | 224.8 | 187.3 | 3211 | 73300 |
| VL 607K | 600 | 458.5 | 20.0 | 11.0 | 116.8 | 233.6 | 194.7 | 3365 | 77153 |

* The section modulus values for the profiles may only be used in static load calculations if at least every second sheet pile interlock in the wall is crimped to absorb shear forces.



# LARSSEN PROFILES

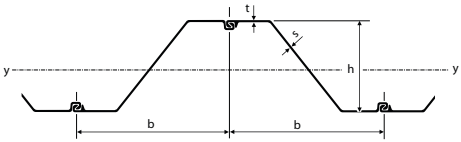
**(DIN EN 10248-2)**




| Profile | Width | Height | Back Thickness | Web-Thickness | Weight | | | Section of Inertia | Moment of Inertia |
|---|---|---|---|---|---|---|---|---|---|
| | w | h | bt | wt | SS | DS | Wall | | |
| | mm | mm | mm | mm | kg/m | kg/m | kg/m² | cm³/m | cm⁴/m |
| Larssen 22 | 500 | 340 | 10.0 | 9.0 | 61.8 | 123.6 | 123.6 | 1260 | 21420 |
| Larssen 23 | 500 | 420 | 11.5 | 10.0 | 77.5 | 155.0 | 155.0 | 2000 | 42000 |
| Larssen 24 | 500 | 420 | 15.6 | 10.0 | 87.5 | 175.0 | 175.0 | 2500 | 52500 |
| Larssen 25 | 500 | 420 | 20.0 | 11.5 | 103.0 | 206.0 | 206.0 | 3040 | 63840 |
| | | | | | | | | | |
| Larssen 703 | 700 | 400 | 9.5 | 8.0 | 67.5 | 135.0 | 96.4 | 1210 | 24200 |
| Larssen 716 | 700 | 440 | 10.2 | 9.5 | 79.9 | 159.8 | 114.2 | 1600 | 35200 |
| Larssen 720 | 750 | 450 | 12.0 | 10.0 | 96.4 | 192.8 | 128.5 | 2000 | 45000 |

* The section modulus values for the profiles may only be used in static load calculations if at least every second sheet pile interlock in the wall is crimped to absorb shear forces.

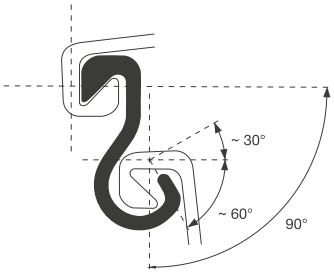
# Z PROFILES



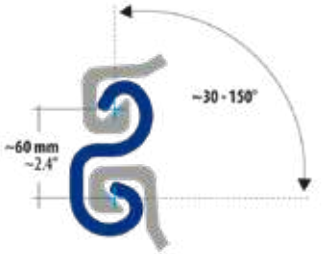

| Profile | Width | Height | Back Thickness | Web Thickness | Weight | | | Section of Inertia | Moment of Inertia |
|---|---|---|---|---|---|---|---|---|---|
| | w | h | bt | wt | SS | DS | Wall | | |
| | mm | mm | mm | mm | kg/m | kg/m | kg/m² | cm³ | cm⁴ |
| ZZ12-770 | 770 | 344 | 8.6 | 8.5 | 72.8 | 145.6 | 94.5 | 1252 | 21496 |
| ZZ13-770 | 770 | 344 | 9.1 | 9.0 | 76.2 | 152.4 | 99.0 | 1304 | 22433 |
| ZZ14-770 | 770 | 345 | 9.6 | 9.5 | 79.6 | 159.2 | 103.4 | 1357 | 23370 |
| | | | | | | | | | |
| ZZ17-700 | 700 | 420 | 8.5 | 8.4 | 73.3 | 146.6 | 104.7 | 1735 | 36425 |
| ZZ18-700 | 700 | 421 | 9.1 | 9.0 | 76.7 | 153.4 | 109.6 | 1807 | 38001 |
| ZZ19-700 | 700 | 421 | 9.6 | 9.5 | 80.2 | 160.4 | 114.6 | 1880 | 39578 |
| ZZ20-700 | 700 | 422 | 10.1 | 10.0 | 83.7 | 167.4 | 119.5 | 1953 | 41155 |
| | | | | | | | | | |
| ZZ24-700 | 700 | 460 | 11.3 | 11.2 | 95.8 | 191.6 | 136.9 | 2437 | 55949 |
| ZZ26-700 | 700 | 460 | 12.3 | 12.2 | 103.0 | 206.0 | 147.1 | 2601 | 59843 |
| ZZ27-700 | 700 | 461 | 12.8 | 12.7 | 106.4 | 121.8 | 152.0 | 2676 | 61641 |
| ZZ28-700 | 700 | 461 | 13.3 | 13.2 | 110.1 | 220.2 | 157.3 | 2764 | 63740 |
| | | | | | | | | | |
| ZZ36-700 | 700 | 500 | 15.1 | 11.2 | 118.7 | 237.4 | 169.6 | 3596 | 89753 |
| ZZ38-700 | 700 | 500 | 16.1 | 12.2 | 126.5 | 253.0 | 180.7 | 3798 | 94984 |
| ZZ40-700 | 700 | 501 | 17.1 | 13.2 | 134.3 | 268.6 | 191.8 | 3999 | 100219 |
| | | | | | | | | | |
| ZZ42-700 | 700 | 500 | 18.1 | 14.0 | 143.0 | 286.0 | 204.2 | 4228 | 105543 |
| ZZ44-700 | 700 | 500 | 19.1 | 15.0 | 150.7 | 301.4 | 215.3 | 4436 | 110942 |
| ZZ46-700 | 700 | 501 | 20.1 | 16.0 | 158.5 | 317.0 | 226.5 | 4635 | 116159 |
| | | | | | | | | | |
| ZZ48-700 | 700 | 503 | 22.1 | 15.0 | 159.3 | 318.6 | 227.6 | 4788 | 120467 |
| ZZ50-700 | 700 | 504 | 23.1 | 16.0 | 166.7 | 333.4 | 238.2 | 4973 | 125358 |
| ZZ52-700 | 700 | 505 | 24.1 | 17.0 | 174.3 | 348.6 | 249.0 | 5162 | 130403 |

# CORNER PROFILES

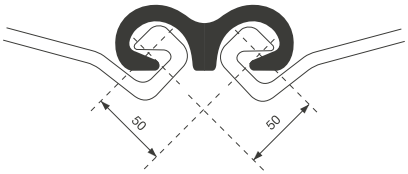
**E20XL** 11.7 kg/m



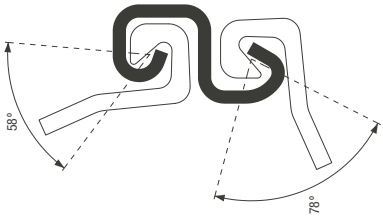

**LV20n** 13.8 kg/m



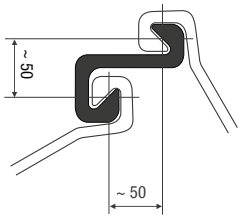

**OMEGA** 17.3 kg/m



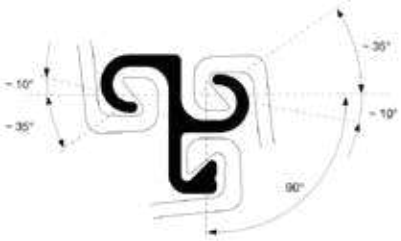

**S20** 14.7 kg/m



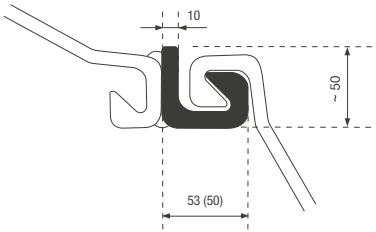

**E20** 15.4 kg/m



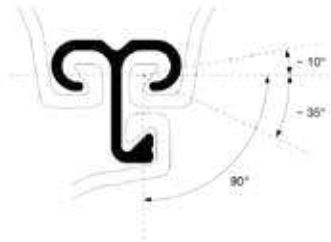

**VTS / LT** 17.6 kg/m



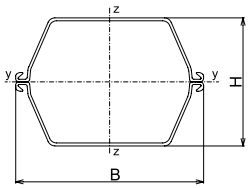

**E22** 10.2 kg/m




**VT / LOT** 17.7 kg/m

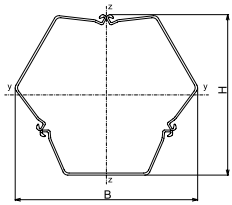


# SHEET PILES




## DOUBLE BOX

| Profile | Dimensions | | Perim-eter | Area | | Weight | Moment of Inertia | | Section Modulus | | Coating Surface Area |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | W | H | | Single Sheet | Box | | y-y | z-z | y-y | z-z | |
| | mm | mm | cm | $cm^2$ | $cm^2$ | kg/m | $cm^4$ | $cm^4$ | $cm^3$ | $cm^3$ | $m^2/m$ |
| VL 601 | 632 | 348 | 188 | 118.0 | 1593 | 92.6 | 18229 | 48407 | 1047 | 1532 | 1.61 |
| VL 602 | 633 | 350 | 188 | 136.0 | 1608 | 106.8 | 20976 | 56067 | 1197 | 1771 | 1.61 |
| VL 603 | 637 | 363 | 202 | 163.6 | 1831 | 128.4 | 30718 | 70370 | 1692 | 2209 | 1.74 |
| VL 604 | 638 | 435 | 214 | 186.3 | 2180 | 146.2 | 48661 | 82354 | 2238 | 2582 | 1.86 |
| VL 605A | 638 | 465 | 218 | 194.9 | 2299 | 153.0 | 58035 | 84324 | 2497 | 2643 | 1.90 |
| VL 606A | 638 | 475 | 219 | 217.6 | 2340 | 170.8 | 71383 | 87654 | 3006 | 2748 | 1.92 |
| VL 606N | 638 | 479 | 220 | 239.7 | 2362 | 188.2 | 81740 | 93307 | 3414 | 2925 | 1.93 |
| VL 628 | 638 | 501 | 224 | 259.3 | 2445 | 203.6 | 96749 | 99749 | 3854 | 3127 | 1.91 |
| VL 607 | 638 | 502 | 223 | 286.3 | 2445 | 224.8 | 105163 | 109326 | 4190 | 3427 | 1.97 |

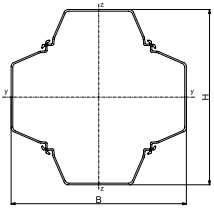



## TRIPLE BOX

| Profile | Dimensions | | Perim-eter | Area | | Weight | Moment of Inertia | | Section Modulus | | Coating Surface Area |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | W | H | | Single Sheet | Box | | y-y | z-z | y-y | z-z | |
| | mm | mm | cm | $cm^2$ | $cm^2$ | kg/m | $cm^4$ | $cm^4$ | $cm^3$ | $cm^3$ | $m^2/m$ |
| VL 601 | 745 | 724 | 278 | 177.0 | 4035 | 138.9 | 111704 | 111704 | 3000 | 2999 | 2.41 |
| VL 602 | 747 | 727 | 279 | 204.0 | 4062 | 160.2 | 129056 | 129056 | 3457 | 3454 | 2.42 |
| VL 603 | 818 | 737 | 299 | 245.3 | 4407 | 192.6 | 167522 | 167522 | 4450 | 4097 | 2.61 |
| VL 604 | 879 | 773 | 317 | 279.4 | 4936 | 219.3 | 213276 | 213276 | 5379 | 4850 | 2.80 |
| VL 605A | 899 | 789 | 324 | 292.4 | 5115 | 229.5 | 232134 | 232134 | 5641 | 5165 | 2.86 |
| VL 605N | 901 | 791 | 324 | 313.8 | 5136 | 246.3 | 251195 | 251195 | 6085 | 5573 | 2.87 |
| VL 606A | 906 | 794 | 326 | 326.4 | 5176 | 256.2 | 264870 | 265870 | 6359 | 5850 | 2.88 |
| VL 606N | 909 | 796 | 327 | 359.6 | 5209 | 282.3 | 294669 | 294669 | 7041 | 6483 | 2.89 |
| VL 628 | 929 | 809 | 332 | 389.0 | 5333 | 305.4 | 329063 | 329063 | 7664 | 7083 | 2.95 |
| VL 607 | 923 | 807 | 331 | 429.5 | 5334 | 337.2 | 364602 | 364602 | 8478 | 7898 | 2.92 |

* The weld seam mass is not included in the calculation.
External coating surface area excluding the inner surface of the interlocks.

# SHEET PILES




## QUADRUPLE BOX

| Profile | Dimensions | | Perim-eter | Area | | Weight | Moment of Inertia | | Section Modulus | | Coating Surface Area |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | W | H | | Single Sheet | Box | | y-y | z-z | y-y | z-z | |
| | mm | mm | cm | $cm^2$ | $cm^2$ | kg/m | $cm^4$ | $cm^4$ | $cm^3$ | $cm^3$ | $m^2/m$ |
| VL 601 | 968 | 968 | 369 | 236.0 | 7027 | 185.2 | 258198 | 258198 | 5335 | 5335 | 3.20 |
| VL 602 | 971 | 971 | 369 | 272.0 | 7068 | 213.6 | 298312 | 298312 | 6145 | 6145 | 3.21 |
| VL 603 | 986 | 986 | 397 | 327.1 | 7545 | 256.8 | 381896 | 381896 | 7744 | 7744 | 3.45 |
| VL 604 | 1059 | 1059 | 421 | 372.6 | 8257 | 292.4 | 475644 | 475644 | 8982 | 8982 | 3.71 |
| VL 605A | 1092 | 1092 | 430 | 418.5 | 8523 | 328.4 | 557375 | 6E+06 | 10211 | 20211 | 3.80 |
| VL 605N | 1092 | 1092 | 430 | 418.5 | 8523 | 328.4 | 557375 | 557375 | 10211 | 10211 | 3.80 |
| VL 606A | 1099 | 1099 | 432 | 435.2 | 8576 | 341.6 | 587726 | 587726 | 10695 | 10695 | 3.82 |
| VL 606N | 1103 | 1103 | 433 | 479.5 | 8620 | 376.4 | 654278 | 654278 | 11863 | 11863 | 3.83 |
| VL628 | 1125 | 1125 | 441 | 518.7 | 8785 | 407.2 | 726613 | 726613 | 12920 | 12920 | 3.91 |
| VL 607 | 1126 | 1126 | 439 | 572.6 | 8787 | 449.6 | 806845 | 806845 | 14329 | 14329 | 3.87 |

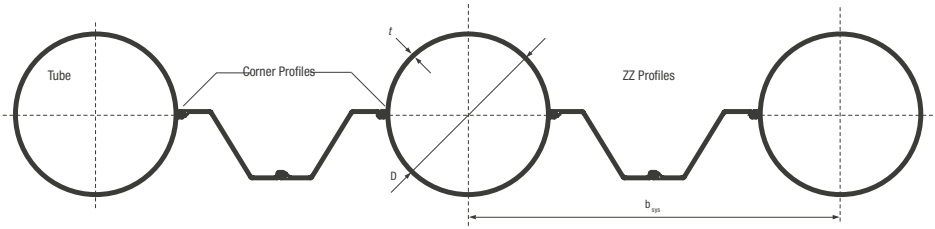
* The weld seam mass is not included in the calculation.
Base coating surface area excluding the inner surface of the interlocks.

# COMBINED TUBULAR SHEET PILE WALLS

An increasingly large proportion of large elevation changes is now being secured using combined tubular pile walls.

In this cost-effective wall construction method, load-bearing steel piles alternate with steel sheet piles. For a secure load-bearing connection, corner profiles are welded onto the steel pipes, allowing the sheet piles to be threaded in and driven to the required depth during installation. Both Z-piles and U-piles can be used as intermediate sheet piles in this system. The result is a cost-effective, high-load-bearing wall.

The following tables provide some examples.

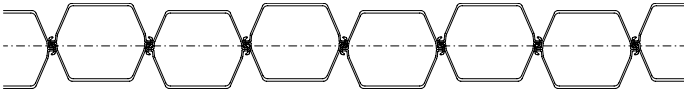


| Combined Tubular Sheet Pile Walls | | | Intermediate Sheet Pile ZZ 12-770 with Corner Profile C 9 | | | | |
|---|---|---|---|---|---|---|---|
| Tube Diameter | Wall Thickness | System Width | Weight 60% | Weight 80% | Weight 100% | Moment of Inertia | Section Modulus |
| mm | mm | m | kg/m2 | kg/m2 | kg/m2 | cm4/m | cm3/m |
| 813 | 10 | 2.40 | 123.41 | 137.08 | 150.74 | 98 410 | 2 421 |
| | 12 | | 139.64 | 153.31 | 166.98 | 114 586 | 2 819 |
| | 14 | | 155.80 | 169.46 | 183.13 | 130 517 | 3 211 |
| 914 | 10 | 2.50 | 128.38 | 141.49 | 154.61 | 129 098 | 2 825 |
| | 12 | | 145.95 | 159.06 | 172.18 | 151 360 | 3 312 |
| | 14 | | 163.44 | 176.56 | 189.67 | 173 323 | 3 793 |
| 1 016 | 10 | 2.61 | 133.01 | 145.61 | 158.21 | 166 141 | 3 271 |
| | 12 | | 151.82 | 164.42 | 177.02 | 195 740 | 3 853 |
| | 14 | | 170.56 | 183.16 | 195.76 | 224 983 | 4 429 |
| 1 220 | 12 | 2.81 | 162.28 | 173.97 | 185.66 | 307 435 | 5 040 |
| | 14 | | 183.24 | 194.93 | 206.61 | 355 012 | 5 820 |
| | 16 | | 204.13 | 215.81 | 227.50 | 402 113 | 6 592 |
| 1 420 | 14 | 3.01 | 194.01 | 204.92 | 215.83 | 518 717 | 7 306 |
| | 16 | | 216.78 | 227.69 | 238.60 | 588 793 | 8 293 |
| | 18 | | 239.49 | 250.40 | 261.31 | 658 266 | 9 271 |
| 1 620 | 18 | 3.21 | 252.23 | 262.46 | 272.69 | 915 777 | 11 306 |
| | 20 | | 276.54 | 286.77 | 297.00 | 1 012 651 | 12 502 |
| | 22 | | 300.78 | 311.02 | 321.25 | 1 108 791 | 13 689 |

| Combined Tubular Sheet Pile Walls | | | Intermediate Sheet Pile ZZ 20-700 with Corner Profile C 9 | | | | |
|---|---|---|---|---|---|---|---|
| Tube Diameter | Wall Thickness | System Width | Weight 60% | Weight 80% | Weight 100% | Moment of Inertia | Section Modulus |
| mm | mm | m | kg/m2 | kg/m2 | kg/m2 | cm4/m | cm3/m |
| 914 | 10 | 2.36 | 141.51 | 157.25 | 172.99 | 147 111 | 3 219 |
| | 12 | | 160.13 | 175.86 | 191.60 | 170 691 | 3 735 |
| | 14 | | 178.65 | 194.39 | 210.12 | 193 955 | 4 244 |
| 1 016 | 10 | 2.47 | 145.86 | 160.95 | 176.03 | 185 512 | 3 652 |
| | 12 | | 165.74 | 180.83 | 195.91 | 216 791 | 4 268 |
| | 14 | | 185.54 | 200.63 | 215.71 | 247 695 | 4 876 |
| 1 220 | 12 | 2.67 | 175.69 | 189.62 | 203.56 | 332 734 | 6 455 |
| | 14 | | 197.75 | 211.68 | 225.61 | 382 806 | 6 276 |
| | 16 | | 219.73 | 233.66 | 247.60 | 432 376 | 7 088 |
| 1 420 | 14 | 2.87 | 208.03 | 220.99 | 233.95 | 552 560 | 7 783 |
| | 16 | | 231.91 | 244.88 | 257.84 | 626 054 | 8 818 |
| | 18 | | 255.73 | 268.70 | 281.66 | 698 916 | 9 844 |
| 1 520 | 16 | 2.97 | 237.39 | 249.92 | 262.44 | 739 209 | 9 726 |
| | 18 | | 262.07 | 274.60 | 267.12 | 825 983 | 10 868 |
| | 20 | | 286.68 | 299.21 | 311.73 | 912 058 | 12 001 |
| 1 620 | 18 | 3.07 | 267.99 | 280.11 | 292.23 | 965 522 | 11 920 |
| | 20 | | 293.41 | 305.53 | 317.64 | 1 066 813 | 13 171 |
| | 22 | | 316.76 | 330.88 | 343.00 | 1 167 338 | 14 412 |
| 1 820 | 18 | 3.27 | 278.76 | 290.13 | 301.50 | 1 262 627 | 14 095 |
| | 20 | | 305.63 | 317.01 | 328.38 | 1 418 541 | 15 588 |
| | 22 | | 332.45 | 343.83 | 355.20 | 1 553 543 | 17 072 |
| 2 020 | 20 | 3.47 | 316.44 | 327.16 | 337.88 | 1 827 503 | 18 094 |
| | 22 | | 344.56 | 355.28 | 366.00 | 2 002 665 | 19 628 |
| | 24 | | 372.62 | 383.34 | 394.06 | 2 176 767 | 21 552 |

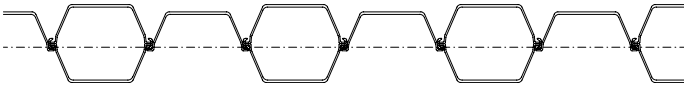
# COMBINED WALLS

## 1/1



| Profile | Weight | Section Modulus | Moment of Inertia |
|---|---|---|---|
| | kg/m² | cm³/m | cm⁴/m |
| VL 601 | 154.4 | 1754 | 30450 |
| VL 602 | 177.9 | 2007 | 35160 |
| VL 603 | 214.0 | 2835 | 51460 |
| VL 604 | 243.7 | 3742 | 81360 |
| VL 605A | 255.1 | 4170 | 96930 |
| VL 605N | 273.7 | 4615 | 107870 |
| VL 606A | 284.7 | 5016 | 119110 |
| VL 606N | 313.7 | 5693 | 136334 |
| VL 628 | 339.3 | 6425 | 160829 |
| VL 607 | 374.6 | 7258 | 182168 |

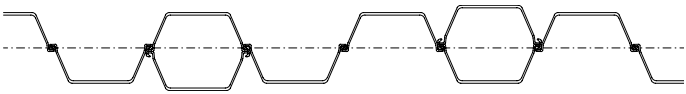
## 1/2



| Profile | Weight | Section Modulus | Moment of Inertia |
|---|---|---|---|
| | kg/m² | cm³/m | cm⁴/m |
| VL 601 | 115.8 | 1009 | 17570 |
| VL 602 | 133.4 | 1152 | 20170 |
| VL 603 | 160.5 | 1616 | 29330 |
| VL 604 | 182.8 | 2144 | 46630 |
| VL 605A | 191.3 | 2388 | 55500 |
| VL 605N | 205.3 | 2626 | 61379 |
| VL 606A | 213.5 | 2840 | 67420 |
| VL 606N | 235.2 | 3199 | 76593 |
| VL 628 | 254.5 | 3600 | 90124 |
| VL 607 | 280.9 | 4033 | 101233 |

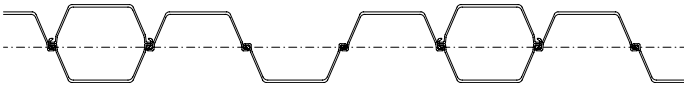
# COMBINED WALLS

## 1/3



| Profile | Weight | Section Modulus | Moment of Inertia |
|---|---|---|---|
| | kg/m² | cm³/m | cm⁴/m |
| VL 601 | 102.9 | 1032 | 17960 |
| VL 602 | 118.6 | 1173 | 20540 |
| VL 603 | 142.7 | 1660 | 30120 |
| VL 604 | 162.5 | 2225 | 48390 |
| VL 605A | 170.0 | 2498 | 58070 |
| VL 605N | 182.5 | 2768 | 64700 |
| VL 606A | 189.8 | 3017 | 71630 |
| VL 606N | 209.1 | 3428 | 82086 |
| VL 628 | 226.2 | 3881 | 97155 |
| VL 607 | 249.7 | 4387 | 110111 |

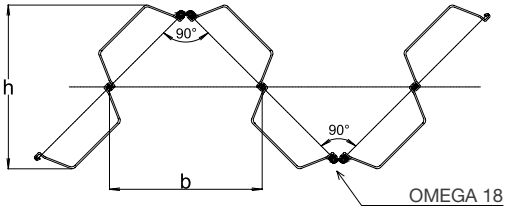
## 1/4



| Profile | Weight | Section Modulus | Moment of Inertia |
|---|---|---|---|
| | kg/m² | cm³/m | cm⁴/m |
| VL 601 | 96.5 | 897 | 15620 |
| VL 602 | 111.2 | 1017 | 17820 |
| VL 603 | 133.7 | 1439 | 26120 |
| VL 604 | 152.3 | 1940 | 42180 |
| VL 605A | 159.4 | 2182 | 50720 |
| VL 605N | 171.1 | 2416 | 56479 |
| VL 606A | 177.9 | 2634 | 62540 |
| VL 606N | 196.0 | 2991 | 71618 |
| VL 628 | 212.1 | 3389 | 84832 |
| VL 607 | 234.1 | 3827 | 96064 |

* The weld seam mass is not included in the calculation.

# JAGGED WALLS

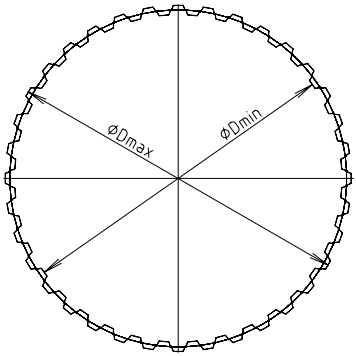



| Profile | Dimensions | | Weight | Moment of Inertia | | Section Modulus | |
|---|---|---|---|---|---|---|---|
| | W | H | | Omega 18 *) | Omega 18 **) | Omega 18 *) | Omega 18 **) |
| | mm | mm | kg/m | $cm^4$ | $cm^4$ | $cm^3$ | $cm^3$ |
| VL 601 | 912 | 910 | 116.4 | 126475 | 162021 | 2897 | 3562 |
| VL 602 | 912 | 910 | 131.9 | 145271 | 180817 | 3325 | 3975 |
| VL 603 | 912 | 930 | 155.6 | 184720 | 220266 | 3975 | 4739 |
| VL 604 | 912 | 978 | 175.2 | 230065 | 265611 | 4706 | 5433 |
| VL 605A | 912 | 990 | 182.6 | 249309 | 284855 | 5039 | 5757 |
| VL 605N | 912 | 992 | 194.9 | 270008 | 305554 | 5446 | 6162 |
| VL 606A | 912 | 994 | 202.1 | 284767 | 320313 | 5731 | 6446 |
| VL 606N | 912 | 997 | 221.2 | 317023 | 352569 | 6362 | 7075 |
| VL 628 | 912 | 1011 | 238.1 | 352163 | 387709 | 6964 | 7666 |
| VL 607 | 912 | 1004 | 261.3 | 390930 | 426475 | 7784 | 8492 |

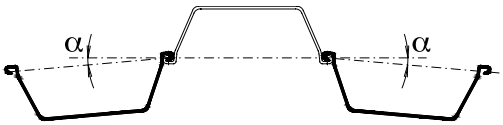
Omega 18 *) threaded and not welded to the double sheet pile, but only riveted.
Omega 18 **) threaded and welded to the double sheet pile.

# CIRCULAR DRIVING

| Profile | Dimensions | | 5-degree rotation | |
|---|---|---|---|---|
| | W | H | Ø Dmin | Ø Dmax |
| | mm | mm | m | m |
| IIIn | 400 | 290 | 8.87 | 9.45 |
| VL 504 | 500 | 340 | 11.11 | 11.79 |
| VL 507A | 500 | 437 | 11.01 | 11.88 |
| VL 601 | 600 | 310 | 13.43 | 14.05 |
| VL 602 | 600 | 310 | 13.43 | 14.05 |
| VL 603 | 600 | 320 | 13.42 | 14.06 |
| VL 603N | 600 | 422.6 | 13.32 | 14.16 |
| VL 604 | 600 | 390 | 13.35 | 14.13 |
| VL 605 | 600 | 420 | 13.32 | 14.16 |
| VL 606 | 600 | 430 | 13.31 | 14.17 |
| VL 628 | 600 | 455.1 | 13.29 | 14.20 |




**Theoretical rotation of the interlock**
Maximum rotation angle of the interlock
a-max = 5°



# STEEL GRADES

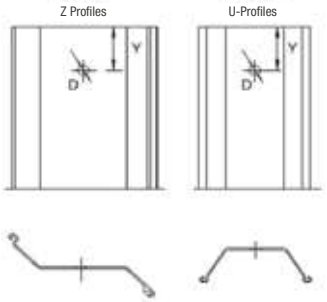
## HOT-ROLLED SHEET PILES IN ACCORDANCE WITH DIN EN 10248-1

| Steel Grades | Minimum Yield Strength | Minimum Tensile Strength | Minimum Elongation at Break |
|---|---|---|---|
| | N/mm² | N/mm² | % |
| S240GP | 240 | 340 | 26 |
| S270GP | 270 | 410 | 24 |
| S320GP | 320 | 440 | 23 |
| S355GP | 355 | 480 | 22 |
| S390GP | 390 | 490 | 20 |
| S430GP | 430 | 510 | 19 |
| S460GP | 460 | 530 | 17 |
| S500GP | 500 | 580 | 15 |

# PERFORATION

## STANDARD DIMENSIONS

Diameter D 40mm
Distance Y 300mm



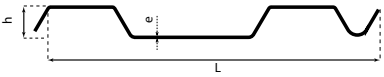
# DIMENSIONAL TOLERANCES

## LIMIT DIMENSIONS AND DIMENSIONAL TOLERANCES FOR HOT-ROLLED SHEET PILES MADE OF NON-ALLOY STEELS IN ACCORDANCE WITH DIN EN 10248-2.

| | |
|---|---|
| › **Sheet Pile Width** | ± 2% for single sheet piles; ± 3% for double or triple sheet piles. |
| › **Wall Thickness** | t: Up to 8.5 mm = ± 0.5 mm; Over 8.5 mm = ± 6% t |
| › **U-Profiles** | s: Up to 8.5 mm = – 0.5 mm; Over 8.5 mm = – 6% t |
| › **Wall Thickness for Z profiles and flat profiles** | t, s: Up to 8.5 mm = ± 0.5 mm; Over 8.5 mm = ± 6% s, t |
| › **Height of U-profiles** | h: Up to 200 mm = ± 4 mm; Over 200 mm = ± 5 mm |
| › **Height of Z profiles** | h: Up to 200 mm = ± 5 mm; 200 to 300 mm = ± 6 mm; Over 300 mm = ± 7 mm |
| › **Straightness Deviation** | The deviation from straightness in the longitudinal direction must not exceed 0.2% of the sheet pile length. |
| › **Sheet Pile Length** | May deviate by ± 200 mm from the ordered length. |
| › **Cutting Tolerance** | Perpendicular cut relative to the longitudinal axis. The total deviation between the highest and lowest points of the cutting plane, measured along the longitudinal axis of a single sheet pile, must not exceed 2% of the sheet pile width. |
| › **Weight Tolerance** | The difference between the calculated weight (as per profile tables) and the actual measured weight of the total delivery must not exceed ± 5%. |
| › **Interlock Connections** | The interlocks must fit together with sufficient clearance to ensure that the sheet piles can be easily interlocked and that the required forces for the designed structural connection can be transferred. |

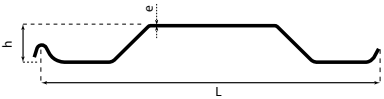
# TRENCH SHEETS

## CR 430 - CR 450



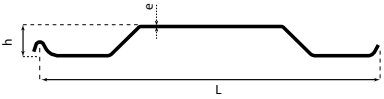

| Profile | Width | Height | Thickness | Weight | | Section Modulus |
|---|---|---|---|---|---|---|
| | L | h | e | | | |
| | mm | mm | mm | kg/m | kg/m² | cm³/m |
| CR 430 | 330 | 34 | 3 | 9.72 | 29.45 | 40 |
| CR 435 | 330 | 35 | 3.5 | 11.21 | 33.96 | 44 |
| CR 440 | 330 | 35 | 4 | 12.96 | 39.29 | 52 |
| CR 450 | 330 | 36 | 5 | 16.09 | 48.76 | 63 |

## KD 400



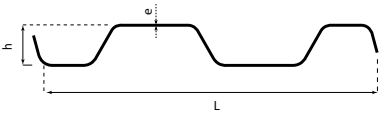

| | | | | | | |
|---|---|---|---|---|---|---|
| KD 400-5 | 400 | 49 | 5 | 18.52 | 46.30 | 84 |
| KD 400-6 | 400 | 50 | 6 | 22.23 | 55.57 | 99 |

## KD 500



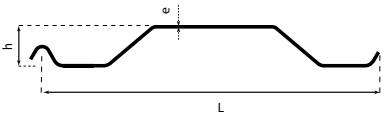

| | | | | | | |
|---|---|---|---|---|---|---|
| KD 500-5 | 500 | 49 | 5 | 22.45 | 44.90 | 86 |
| KD 500-6 | 500 | 50 | 6 | 26.94 | 53.88 | 101 |

## KD 600




| | | | | | | |
|---|---|---|---|---|---|---|
| KD 600-6 | 600 | 78 | 6 | 37.50 | 62.00 | 184 |
| KD 600-8 | 600 | 80 | 8 | 50.00 | 83.00 | 237 |
| KD 600-9 | 600 | 81 | 9 | 55.53 | 92.55 | 263 |

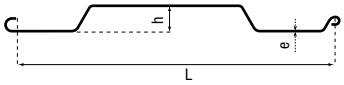
## KD 750




| | | | | | | |
|---|---|---|---|---|---|---|
| KD 750-5 | 742 | 91 | 5 | 33.79 | 45.54 | 163 |
| KD 750-6 | 742 | 92 | 6 | 40.90 | 54.66 | 194 |
| KD 750-7 | 742 | 93 | 7 | 47.03 | 63.40 | 224 |
| KD 750-8 | 742 | 94 | 8 | 53.56 | 72.18 | 254 |
| KD 750-9 | 742 | 95 | 9 | 60.26 | 81.21 | 283 |

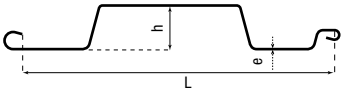
# LIGHTWEIGHT PROFILES

## L 8



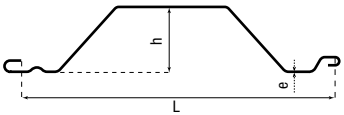

| Profile | Width | Height | Thickness | Weight | | Section Modulus |
|---|---|---|---|---|---|---|
| | L | h | e | | | |
| | mm | mm | mm | kg/m | kg/m² | cm³/m |
| L 8 | 434 | 38 | 3.5 | 14.39 | 33.15 | 52 |

## FLP 500



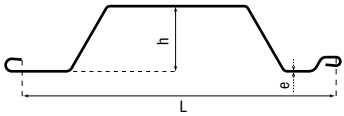

| | | | | | | |
|---|---|---|---|---|---|---|
| FLP 500-5 | 494 | 74 | 5 | 28.02 | 56.72 | 156 |
| FLP 500-6 | 494 | 75 | 6 | 33.53 | 67.88 | 186 |

## FLP 600



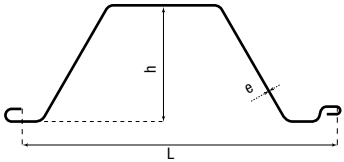

| | | | | | | |
|---|---|---|---|---|---|---|
| FLP 600-3 | 600 | 127 | 3 | 19.73 | 32.90 | 156 |
| FLP 600-3.5 | 600 | 128 | 3.5 | 23.08 | 38.30 | 183 |
| FLP 600-4 | 600 | 128 | 4 | 26.15 | 43.58 | 207 |
| FLP 600-5 | 600 | 129 | 5 | 32.72 | 54.10 | 257 |
| FLP 600-6 | 600 | 130 | 6 | 38.80 | 64.60 | 306 |

## FLP 700



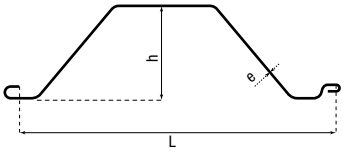

| | | | | | | |
|---|---|---|---|---|---|---|
| FLP 700-4 | 700 | 147 | 4 | 31.40 | 44.85 | 276 |
| FLP 700-5 | 700 | 148 | 5 | 39.40 | 56.20 | 343 |
| FLP 700-6 | 700 | 149 | 6 | 47.20 | 66.90 | 409 |
| FLP 700-7 | 700 | 150 | 7 | 54.34 | 77.60 | 474 |
| FLP 700-8 | 700 | 151 | 8 | 61.90 | 88.45 | 540 |

## FLP 750



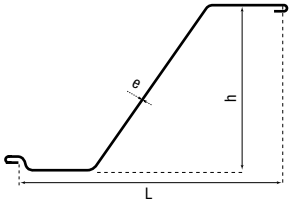

| | | | | | | |
|---|---|---|---|---|---|---|
| FLP 750-6 | 750 | 283 | 6 | 57.46 | 76.60 | 788 |
| FLP 750-7 | 750 | 284 | 7 | 67.00 | 89.30 | 912 |
| FLP 750-8 | 750 | 285 | 8 | 76.60 | 102.00 | 1044 |
| SLP 750-8XL | 750 | 348 | 8 | 85.60 | 115.50 | 1512 |
| SLP 750-9XL | 750 | 349 | 9 | 98.50 | 131.40 | 1702 |

## FLP 840



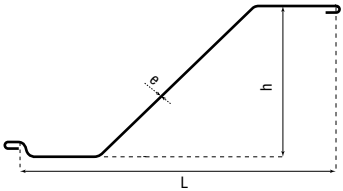

| Profile | Width | Height | Thickness | Weight | | Section Modulus |
|---|---|---|---|---|---|---|
| | L | h | e | | | |
| | mm | mm | mm | kg/m | kg/m² | cm³/m |
| FLP 840-6 | 840 | 250 | 6 | 57.46 | 68.40 | 617 |
| FLP 840-7 | 840 | 251 | 7 | 67.00 | 79.76 | 718 |
| FLP 840-8 | 840 | 252 | 8 | 76.61 | 91.20 | 817 |

## ZP 700



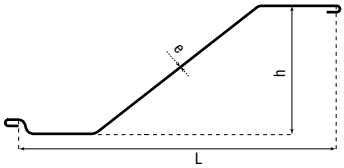

| | | | | | | |
|---|---|---|---|---|---|---|
| ZP 700-6 | 1400 | 440 | 6 | 51.00 | 72.85 | 1289 |
| ZP 700-7 | 1400 | 441 | 7 | 59.50 | 85.00 | 1500 |
| ZP 700-8 | 1400 | 442 | 8 | 68.00 | 97.14 | 1709 |

## ZP 774




| | | | | | | |
|---|---|---|---|---|---|---|
| ZP 774-6 | 1548 | 375 | 6 | 51.00 | 65.90 | 982 |
| ZP 774-7 | 1548 | 376 | 7 | 59.50 | 76.90 | 1142 |
| ZP 774-8 | 1548 | 377 | 8 | 68.00 | 87.90 | 1300 |

## ZP 809




| | | | | | | |
|---|---|---|---|---|---|---|
| ZP 809-6 | 1618 | 335 | 6 | 51.00 | 63.00 | 830 |
| ZP 809-7 | 1618 | 336 | 7 | 59.50 | 75.50 | 965 |
| ZP 809-8 | 1618 | 337 | 8 | 68.00 | 84.00 | 1100 |

# MELAVILL® INTERLOCK SEALANT

# BITUMINOUS HOT SEALING COMPOUND
## FOR SHEET PILE INTERLOCKS

Melavill® is a solvent-free bituminous adhesive designed for sealing sheet pile interlocks prior to driving or threading the sheet piles.

## REGISTERED TRADEMARK


EUIPO

Eingetragen / Registered 19/09/2024

No 019037866

AMT DER EUROPÄISCHEN UNION FÜR GEISTIGES EIGENTUM

EINTRAGUNGSURKUNDE

Dieses Eintragungsurkunde wird für die unten angegebene Unionsmarke ausgestellt. Die betreffenden Angaben sind in das Register der Unionsmarken eingetragen worden.

EUROPEAN UNION INTELLECTUAL PROPERTY OFFICE

CERTIFICATE OF REGISTRATION

This Certificate of Registration is hereby issued for the European Union trade mark identified below. The corresponding entries have been recorded in the Register of European Union trade marks.

Melavill

Der Exekutivdirektor / The Executive Director

João Negrão

**Product Standard**
EN 13304

**Application**
Melavill® offers excellent adhesion to metal surfaces. Depending on the ambient temperature, the material can be liquid, soft to tough, or hard.

Additionally, the sealant prevents soil particles from entering the sheet pile interlock, reducing the risk of interlock seizure during pile driving. Furthermore, Melavill® acts as a lubricant, reducing interlock friction.

**Properties**
Bitumen contains no water-soluble or water-polluting substances.
Due to these properties, bitumen has been classified as non-water-polluting by the Commission for the Evaluation of Water-Polluting Substances (German Federal Environmental Agency, Bitumen ID No. 326).

**Processing**
Melavill® must be heated in an indirectly heated agitator boiler to a maximum temperature of 200°C. Melavill® should be heated gently and continuously extracted, and it must not be reheated more than twice. Once the material has cooled, the sheet pile can be further processed.

On average, approximately 0.35 kg is consumed per linear metre of sheet pile interlock. The interlock must be dry, clean, free from loose particles, grease, oil, and dust before pouring the sealant.

Overheated sealant should not be used. During cold weather, Melavill® should be stored frost-free at a minimum of +5°C for at least 12 hours before processing.

**Storage**
**Melavill®** is packaged in an internally coated folding carton. It should be protected from sunlight, UV radiation, and extreme environmental conditions such as heat, cold, and moisture.

**Packaging**
Blocks in folding cartons, approx. 15 kg per unit.

| Technical Data | Test Method/Classification | Unit | Value |
|---|---|---|---|
| Colour | | | Black |
| Density | EN ISO 3838 | g/cm³ | 1.0 -1.1 |
| Softening Point (Ring & Ball) | EN 1427 | °C | 80 – 90 |
| Needle Penetration at 25°C | EN 1426 | °C | 20 – 30 |
| Breaking Point | EN 12593 | °C | ≤ -10 |
| Flash Point (Cleveland) | EN ISO | °C | ≥ 250 |

# MELAVILL PLUS®

## VISCOSITY-ENHANCING ADDITIVE FOR MELAVILL®

Melavill Plus® is a special additive for enhancing the viscosity of Melavill ® in cold temperatures.

**Application**
Melavill Plus® is a solid additive (granules – fine to coarse) that is added to hot-applied, modified bitumen sealant Melavill® during processing.

The enhanced properties of Melavill® improve its workability in cold temperatures and enhance the lubrication effect during sheet pile driving.

**Processing**
Melavill Plus® is added directly to Melavill® while it is being heated in a suitable indirectly heated agitator boiler at a maximum temperature of 200°C. It must be added in small amounts and thoroughly mixed with the sealant to achieve a homogeneous blend.
Overheated sealant should not be used.

The amount of additive required depends on the ambient temperature:

Above +5°C: No additive required
Down to 0°C: Approx. 1.5% (= 5 kg) per pallet of Melavill®
Below 0°C: Approx. 3.0% (= 10 kg) per pallet of Melavill®

**Storage**
The product should be stored in its original packaging, protected from sunlight, UV radiation, and extreme environmental conditions such as heat, cold, and moisture.

# APPLICATION RECOMMENDATIONS

**Processing**
Melavill® must be removed from its packaging and heated in an indirectly heated agitator boiler at a maximum of 200°C.

**Preparation**
The sheet pile interlocks must be dry, clean, and free from loose particles, grease, oil, and dust. To ensure proper adhesion of Melavill® within the interlocks, cleaning with compressed air, a wire brush, or a high-pressure water jet is recommended if necessary. The sheet piles must be laid out in a completely horizontal position. To prevent the liquid Melavill® from flowing out at the ends of the interlocks, these must be sealed with putty or a similar material.

**Consumption**
Approx. 0.30 kg per linear metre in threaded interlock.
Approx. 0.10 kg per linear metre in compressed middle interlock.
Approx. 0.35 kg per m² of sheet pile wall – for 600 mm sheet pile width
Approx. 0.30 kg per m² of sheet pile wall – for 700 mm sheet pile width
Approx. 0.25 kg per m² of sheet pile wall – for 750 mm sheet pile width

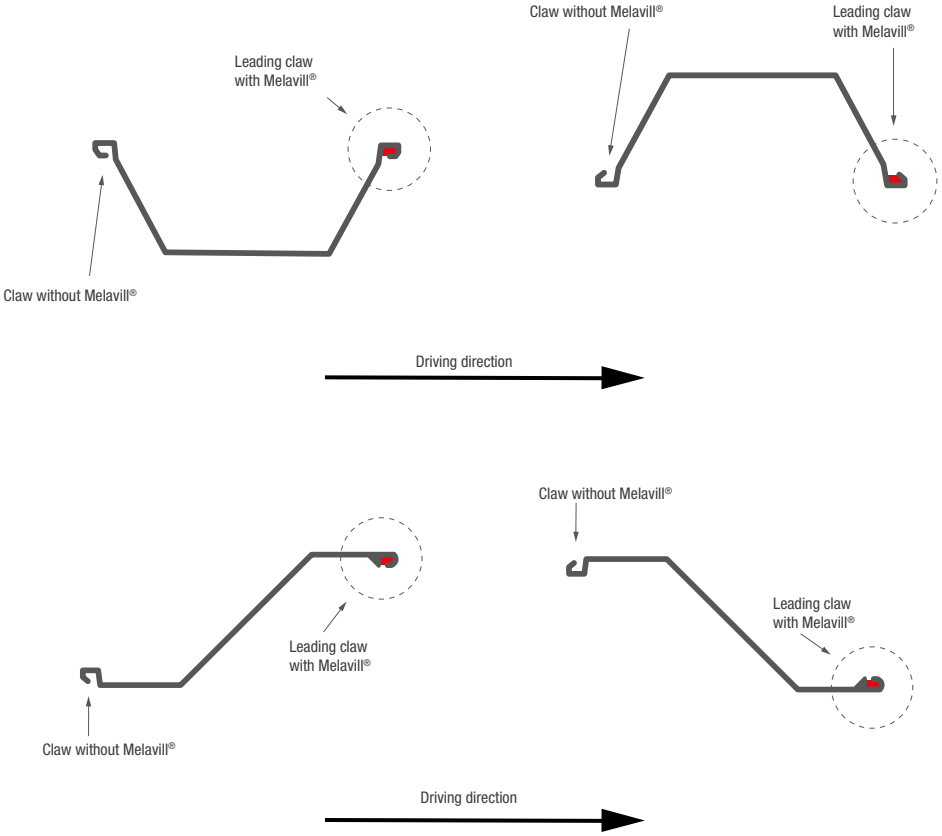
The above quantities are based on Larssen interlocks in accordance with EN 10248. Actual consumption may vary for other interlock designs.

**Durability**
The durability of Melavill® inside the filled sheet pile wall is:

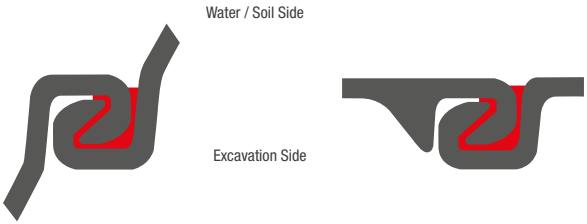
| | |
|---|---|
| In water with a pH value of 3.5 to 11.5: | Very good |
| In seawater: | Very good |
| In mineral oil: | Low |
| In gasoline and crude oil: | Very low |

## Hot application of Melavill® in sheet pile interlocks

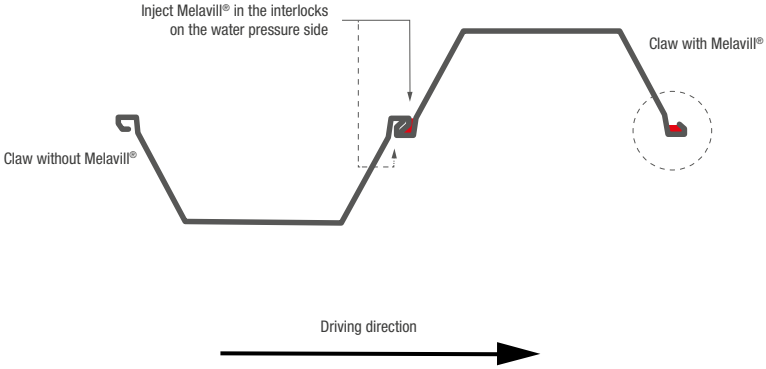

## Hot application of Melavill® in the claws of individual sheet piles

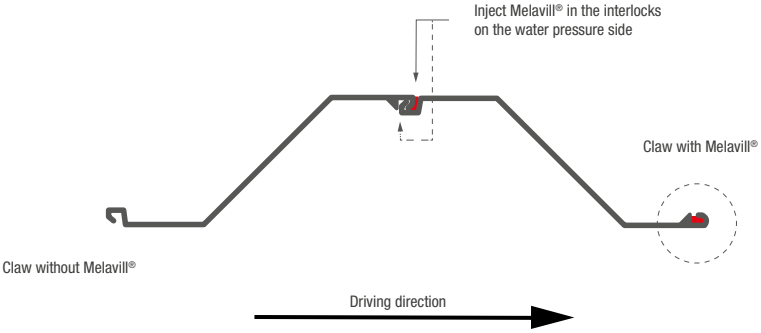


## Hot application of Melavill® in sheet pile interlocks




## Hot application of Melavill® in the interlocks of assembled sheet piles

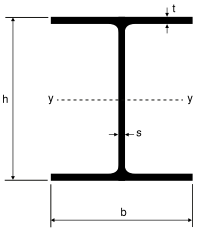


# STEEL BEAMS

# HEB WIDE FLANGE BEAMS

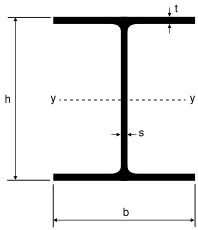
**(DIN 1025-2/ EN 10 034)**




| HEB | Height | Width | Web Thickness | Flange Thickness | Section Modulus | Commercial Weight |
|---|---|---|---|---|---|---|
| | h | w | wt | bt | | |
| | mm | mm | mm | mm | WX/cm³ | kg/m |
| 100 | 100 | 100 | 6 | 10 | 90 | 20.9 |
| 120 | 120 | 120 | 6.5 | 11 | 144 | 27.4 |
| 140 | 140 | 140 | 7 | 12 | 216 | 34.5 |
| 160 | 160 | 160 | 8 | 13 | 311 | 43.7 |
| 180 | 180 | 180 | 8.5 | 14 | 426 | 52.5 |
| 200 | 200 | 200 | 9 | 15 | 570 | 63 |
| 220 | 220 | 220 | 9.5 | 16 | 736 | 73 |
| 240 | 240 | 240 | 10 | 17 | 938 | 85 |
| 260 | 260 | 260 | 10 | 17.5 | 1150 | 95 |
| 280 | 280 | 280 | 10.5 | 18 | 1380 | 106 |
| 300 | 300 | 300 | 11 | 19 | 1680 | 120 |
| 320 | 320 | 300 | 11.5 | 20.5 | 1930 | 130 |
| 340 | 340 | 300 | 12 | 21.5 | 2160 | 137 |
| 360 | 360 | 300 | 12.5 | 22.5 | 2400 | 146 |
| 400 | 400 | 300 | 13.5 | 24 | 2880 | 159 |
| 450 | 450 | 300 | 14 | 26 | 3550 | 175 |
| 500 | 500 | 300 | 14.5 | 28 | 4290 | 192 |
| 550 | 550 | 300 | 15 | 29 | 4970 | 204 |
| 600 | 600 | 300 | 15.5 | 30 | 5700 | 217 |
| 650 | 650 | 300 | 16 | 31 | 6480 | 231 |
| 700 | 700 | 300 | 17 | 32 | 7340 | 247 |
| 800 | 800 | 300 | 17.5 | 33 | 8980 | 269 |
| 900 | 900 | 300 | 18.5 | 35 | 10980 | 298 |
| 1000 | 1000 | 300 | 19 | 36 | 12890 | 322 |

# HEA WIDE FLANGE BEAMS

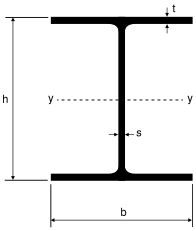
**(DIN 1025-2/ EN 10 034)**




| HEA | Height | Width | Web Thickness | Flange Thickness | Section Modulus | Commercial Weight |
|---|---|---|---|---|---|---|
| | h | w | wt | bt | | |
| | mm | mm | mm | mm | WX/cm³ | kg/m |
| 100 | 96 | 100 | 5 | 8 | 73 | 17.1 |
| 120 | 114 | 120 | 5 | 8 | 106 | 20.4 |
| 140 | 133 | 140 | 5.5 | 8.5 | 155 | 25.3 |
| 160 | 152 | 160 | 6 | 9 | 220 | 31.2 |
| 180 | 171 | 180 | 6 | 9.5 | 294 | 36.4 |
| 200 | 190 | 200 | 6.5 | 10 | 389 | 43 |
| 220 | 210 | 220 | 7 | 11 | 515 | 52 |
| 240 | 230 | 240 | 7.5 | 12 | 675 | 62 |
| 260 | 250 | 260 | 7.5 | 12.5 | 836 | 70 |
| 280 | 270 | 280 | 8 | 13 | 1010 | 78 |
| 300 | 290 | 300 | 8.5 | 14 | 1260 | 90 |
| 320 | 310 | 300 | 9 | 15.5 | 1480 | 100 |
| 340 | 330 | 300 | 9.5 | 16.5 | 1680 | 108 |
| 360 | 350 | 300 | 10 | 17.5 | 1890 | 115 |
| 400 | 390 | 300 | 11 | 19 | 2310 | 128 |
| 450 | 440 | 300 | 11.5 | 21 | 2900 | 143 |
| 500 | 490 | 300 | 12 | 23 | 3550 | 159 |
| 550 | 540 | 300 | 12.5 | 24 | 4150 | 170 |
| 600 | 590 | 300 | 13 | 25 | 4790 | 182 |
| 650 | 640 | 300 | 13.5 | 26 | 5470 | 195 |
| 700 | 690 | 300 | 14.5 | 27 | 6240 | 209 |
| 800 | 790 | 300 | 15 | 28 | 7680 | 230 |
| 900 | 890 | 300 | 16 | 30 | 9480 | 258 |
| 1000 | 990 | 300 | 16.5 | 31 | 11190 | 279 |

# HEM WIDE FLANGE BEAMS

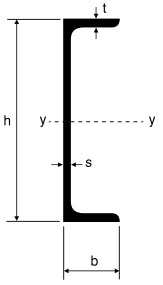
**(DIN 10 025-4 / EN 10 034)**




| HEM | Height | Width | Web Thickness | Flange Thickness | Section Modulus | Commercial Weight |
|---|---|---|---|---|---|---|
| | h | w | wt | bt | | |
| | mm | mm | mm | mm | WX/cm³ | kg/m |
| 100 | 120 | 106 | 12 | 20 | 190 | 42.8 |
| 120 | 140 | 126 | 12.5 | 21 | 288 | 53.4 |
| 140 | 160 | 146 | 13 | 22 | 411 | 64.8 |
| 160 | 180 | 166 | 14 | 23 | 566 | 78.1 |
| 180 | 200 | 186 | 14.5 | 24 | 748 | 91.1 |
| 200 | 220 | 206 | 15 | 25 | 967 | 106 |
| 220 | 240 | 226 | 15.5 | 26 | 1220 | 120 |
| 240 | 270 | 248 | 18 | 32 | 1800 | 161 |
| 260 | 290 | 268 | 18 | 32.5 | 2160 | 176 |
| 280 | 310 | 288 | 18.5 | 33 | 2550 | 194 |
| 300 | 340 | 310 | 21 | 39 | 3480 | 244 |
| 320 | 359 | 309 | 21 | 40 | 3800 | 251 |
| 340 | 377 | 309 | 21 | 40 | 4050 | 254 |
| 360 | 395 | 308 | 21 | 40 | 4300 | 256 |
| 400 | 432 | 307 | 21 | 40 | 4820 | 262 |
| 450 | 478 | 307 | 21 | 40 | 5500 | 270 |
| 500 | 524 | 306 | 21 | 40 | 6180 | 277 |
| 550 | 572 | 306 | 21 | 40 | 6920 | 285 |
| 600 | 620 | 305 | 21 | 40 | 7660 | 292 |
| 650 | 668 | 305 | 21 | 40 | 8430 | 300 |
| 700 | 716 | 304 | 21 | 40 | 9200 | 309 |
| 800 | 814 | 303 | 21 | 40 | 10870 | 325 |
| 900 | 910 | 302 | 21 | 40 | 12540 | 341 |
| 1000 | 1008 | 302 | 21 | 40 | 14330 | 358 |

# UPN SECTIONAL STEEL

**(DIN 10 026-1 / EN 10 279)**




| UPN | Height | Width | Web Thickness | Flange Thickness | Section Modulus | Single-U Commercial Weight | Double-U Commercial Weight |
|---|---|---|---|---|---|---|---|
| | h | w | wt | bt | | | |
| | mm | mm | mm | mm | WX/cm³ | kg/m | kg/m |
| 200 | 200 | 75 | 8.5 | 11.5 | 191 | 26 | 54.6 |
| 220 | 220 | 80 | 9 | 12.5 | 245 | 30 | 63 |
| 240 | 240 | 85 | 9.5 | 13 | 300 | 34 | 71.4 |
| 260 | 260 | 90 | 10 | 14 | 371 | 39 | 81.9 |
| 280 | 280 | 95 | 10 | 15 | 448 | 43 | 90.3 |
| 300 | 300 | 100 | 10 | 16 | 535 | 48 | 100.8 |
| 320 | 320 | 100 | 14 | 17.5 | 679 | 61 | 128.1 |
| 350 | 350 | 100 | 14 | 16 | 734 | 62 | 130.2 |
| 380 | 380 | 102 | 13.5 | 16 | 829 | 65 | 136.5 |
| 400 | 400 | 110 | 14 | 18 | 1020 | 74 | 155.4 |

**Double UPN 200 to 400:**

- **Standard version with 150 mm spread**
- **Flange size: 100 x 10 x 300 mm**
- **Flange positioning: 0.55 m from the beam head**
- **Flange spacing: 1.50 m**


# STEEL SHEETS

| Thickness | Weight | 1000 x 2000 mm | 1250 x 2500 mm | 1500 x 3000 mm | 2000 x 4000 mm | 2000 x 6000 mm |
|---|---|---|---|---|---|---|
| mm | kg/m² | kg/sheet | kg/sheet | kg/sheet | kg/sheet | kg/sheet |
| 5 | 40 | 80 | 125 | 180 | 320 | 480 |
| 6 | 48 | 96 | 150 | 216 | 384 | 576 |
| 8 | 64 | 128 | 200 | 288 | 512 | 768 |
| 10 | 80 | 160 | 250 | 360 | 640 | 960 |
| 12 | 96 | 192 | 300 | 432 | 768 | 1152 |
| 15 | 120 | 240 | 375 | 540 | 960 | 1440 |
| 20 | 160 | 320 | 500 | 720 | 1280 | 1920 |
| 25 | 200 | 400 | 625 | 900 | 1600 | 2400 |
| 30 | 240 | 480 | 750 | 1080 | 1920 | 2880 |
| 40 | 320 | 640 | 1000 | 1440 | 2560 | 3840 |
| 50 | 400 | 800 | 1250 | 1800 | 3200 | 4800 |

# STEEL PIPES

## SEAMLESS AND WELDED

| Outer diameter | Wall thickness | 4 | 4.5 | 5 | 5.6 | 6.3 | 7.1 | 8 | 8.8 | 10 | 11 | 12.5 | 14.2 | 16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| mm | mm | | | | | | | | | | | | | |
| 159 | Weight (kg/m) | 15.3 | 17.1 | 19 | 21.2 | 23.7 | 26.6 | 29.8 | 32.6 | 36.7 | 40.1 | 45.2 | 50.7 | |
| 165 | | 15.9 | 17.8 | 19.7 | 22 | 24.7 | 27.7 | 31 | 33.9 | 38.2 | 41.8 | 47 | 52.8 | |
| 168 | | 16.2 | 18.2 | 20.1 | 22.5 | 25.2 | 28.2 | 31.6 | 34.6 | 39 | 42.7 | 48 | 54 | |
| 177 | | 17.1 | 19.2 | 21.3 | 23.8 | 26.6 | 29.9 | 33.5 | 36.7 | 41.4 | 45.2 | 51 | 57.3 | |
| 193 | | 18.7 | 21 | 23.3 | 26 | 29.1 | 32.7 | 36.6 | 40.1 | 45.3 | 49.6 | 55.9 | 62.9 | |
| 219 | | 21.1 | 23.8 | 26.4 | 29.5 | 33.1 | 37.1 | 41.6 | 45.6 | 51.6 | 56.4 | 63.7 | 71.8 | |
| 244 | | 23.7 | 26.6 | 29.5 | 33 | 37 | 41.6 | 46.7 | 51.2 | 57.8 | 63.3 | 71.5 | 80.6 | |
| 273 | | 26.5 | 29.8 | 33 | 36.9 | 41.4 | 46.6 | 52.3 | 57.3 | 64.9 | 71.1 | 80.3 | 90.6 | |
| 323 | | 31.6 | 35.4 | 39.3 | 44 | 49.3 | 55.5 | 62.3 | 68.4 | 77.4 | 84.9 | 96 | 108.4 | |
| 355 | | 34.7 | 39 | 43.2 | 48.3 | 54.3 | 61 | 68.6 | 75.3 | 85.2 | 93.5 | 106 | 120 | |
| 406 | | 39.7 | 44.6 | 49.5 | 55.4 | 62.2 | 69.9 | 78.6 | 86.3 | 97.8 | 107 | 121 | 137 | 154 |
| 457 | | 44.7 | 50.2 | 55.7 | 62.3 | 70 | 78.8 | 88.6 | 97.3 | 110 | 121 | 137 | 155 | 174 |
| 508 | | 49.5 | 55.9 | 62 | 69.4 | 77.9 | 87.7 | 98.6 | 108 | 123 | 135 | 153 | 173 | 194 |
| 559 | | | 61.5 | 68.3 | 76.4 | 85.9 | 96.6 | 109 | 119 | 135 | 149 | 168 | 191 | 214 |
| 610 | | | 67.2 | 74.6 | 83.5 | 93.8 | 106 | 119 | 130 | 148 | 162 | 184 | 209 | 234 |
| 660 | | | 72.7 | 80.8 | 90.4 | 102 | 114 | 129 | 141 | 160 | 176 | 200 | 226 | 254 |
| 711 | | | 78.4 | 87.1 | 97.4 | 109 | 123 | 139 | 152 | 173 | 190 | 215 | 244 | 274 |
| 762 | | | 84.1 | 93.3 | 104 | 117 | 132 | 149 | 163 | 185 | 204 | 231 | 262 | 294 |
| 813 | | | 89.7 | 99.6 | 112 | 125 | 141 | 159 | 175 | 198 | 218 | 247 | 280 | 314 |
| 864 | | | 95.4 | 106 | 119 | 133 | 150 | 169 | 186 | 211 | 231 | 262 | 298 | 335 |
| 914 | | | 101 | 112 | 125 | 141 | 159 | 179 | 196 | 223 | 245 | 278 | 315 | 354 |
| 1,016 | | | 112 | 125 | 140 | 157 | 177 | 199 | 219 | 248 | 273 | 309 | 351 | 395 |
| 1,220 | | | | | 168 | 189 | 221 | 239 | 263 | 298 | 328 | 372 | 422 | 475 |
| 1,420 | | | | | | 220 | 247 | 279 | 306 | 348 | 382 | 434 | 492 | 554 |

## SPIRAL-WELDED STEEL PIPES

| Diameter (mm) | Wall thickness (mm) | Available Steel Grades: |
|---|---|---|
| 219 - 3,200 | 3.5 - 26 | According to EN standards, GOST standards, API 5L, and ASTM, available with or without certification. |

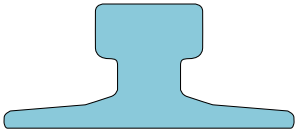
## LONGITUDINALLY WELDED STEEL PIPES

| Diameter (mm) | Wall thickness (mm) | Available Steel Grades: |
|---|---|---|
| 219 – 5,600 | 2 – 150 | According to EN standards, GOST standards, API 5L, and ASTM, available with or without certification. |

## SEAMLESS STEEL PIPES

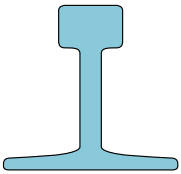
| Diameter (mm) | Wall thickness (mm) | Available Steel Grades: |
|---|---|---|
| 21.3 - 711 | 2.5 - 120 | According to GB standards, EN standards, DIN standards, and ASTM, all pipes are certified to EN 10204/3.1. |

# RAILS



## CRANE RAILS

| Type | Head Width K | Total Height H | Foot Width F | Weight kg/m |
|---|---|---|---|---|
| A45 | 45 | 55 | 125 | 22.1 |
| A55 | 55 | 65 | 150 | 31.8 |
| A65 | 65 | 75 | 175 | 43.1 |
| A75 | 75 | 85 | 200 | 56.2 |
| A100 | 100 | 95 | 200 | 74.3 |
| A120 | 120 | 105 | 220 | 100 |



## VIGNOLE RAILS

| Type | Head Width K | Total Height H | Foot Width F | Weight kg/m |
|---|---|---|---|---|
| S7 | 25 | 65 | 50 | 6.75 |
| S24 | 53 | 115 | 90 | 24.43 |
| XXIVa | 53 | 110 | 95 | 26.15 |
| S33 | 58 | 134 | 105 | 33.47 |
| Xa | 58 | 125 | 110 | 35.78 |
| S49 | 67 | 149 | 125 | 49.43 |
| S54 | 70 | 154 | 125 | 54.54 |
| UIC54E | 70 | 161 | 125 | 53.81 |
| UIC60 | 74 | 172 | 150 | 60.34 |

# TREATMENT / PROCESSING

# TREATMENT

**Treatment of used sheet piles after rental use or repurchase:**

› The piles are individually laid out, their profile and length are identified, and their dimensional accuracy is checked.
› If necessary, deformed pile heads are cut at right angles, and new extraction holes are burned.
› Existing welded attachments and adhesions are removed, and anchor holes are fully welded shut.
› Soiled piles and interlocks are cleaned as required.
› Bent profiles are realigned where possible.
› All defects are documented and photographed.

# PROCESSING

**Processing of sheet piles:**
› Threading of single piles into double or triple piles
› Welding of the middle interlocks to transfer shear forces
› Threading and welding of corner profiles onto sheet piles
› Bituminous sealing of sheet pile interlocks with Melavill®
› Galvanising of sheet piles

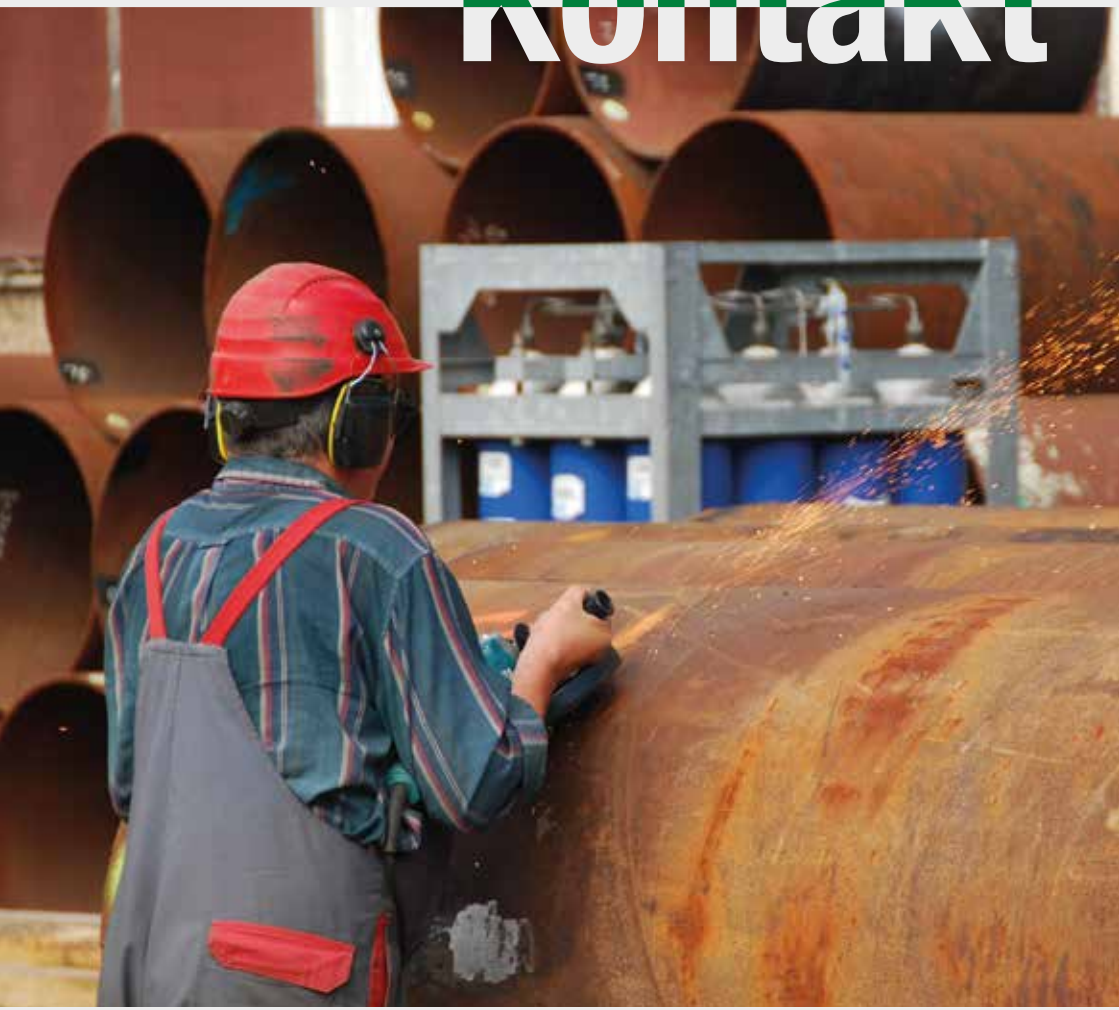
**Processing of steel beams**
› Tapering of the beam foot and burning of an extraction hole into the beam head for driven piles
› Production of double U-beams with welded brackets according to specifications

**Processing of steel pipes**
› Hot-dip galvanising of pipes

**Processing of steel plates**
› Production of flame-cut parts
› Drilling of handling holes

**The processed components are primarily supplied to construction sites in the specialist deep foundation, civil engineering, structural engineering, hydraulic engineering, road construction, pipeline, and infrastructure sectors.**

# Kontakt



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