# MPT-Support profiles Q100

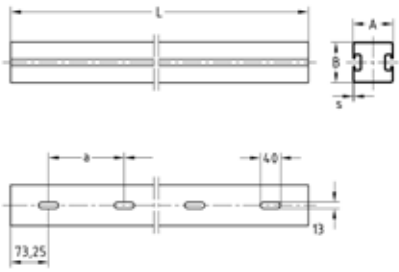
**hot-dip galvanised**

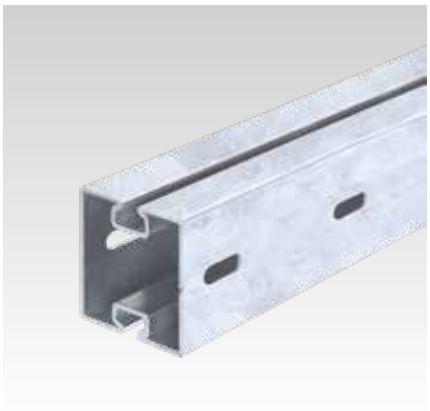
## Application

- For support structures used in heavy-duty building technology and on industrial and plant building sites

## Your advantages

- For construction of safe structures due to the high load-bearing capacity of the profiles
- High corrosion protection due to standardised hot-dip galvanising ensures flexible implementation outdoors and indoors
- Efficient installation due to the double fastening groove
- Saves time and costs due to functional accessories that are matched to the support profile
- System components with finished surface and ready for installation save set-up and installation time
- Product quality is ensured through the imprinted manufacturing code
- Continuous fastening groove for flexible arrangement of accessories and fastening components
- Clean-cut appearance by the use of MPT-protection caps



| Profile | Length L [mm] | Thickness s [mm] | Dimensions [mm] a | A | B | Weight [kg] | **Part no.** | Sales unit | Pack unit |
|---|---|---|---|---|---|---|---|---|---|
| Q100-2.5 | 6,000 | 2.5 | 150 | 100 | 100 | 59.82 | **131608** | 1 | Pieces |
| Q100-3.5 | | 3.5 | | | | 84.3 | **131609** | | |



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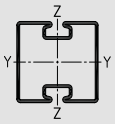
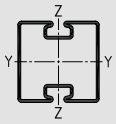
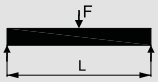
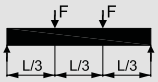
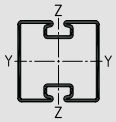
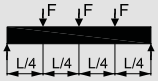
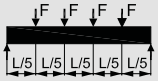
## Technical data of profile:

### Features

| Profile  | Material | Surface | Admissible steel stress $\sigma_{adm.}$ [N/mm²] | Available hammer head bolts | Profile weight [kg/m] | Profile cross-section [cm²] | Moment of inertia | | Resistance moment | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | $I_y$ [cm⁴] | $I_z$ [cm⁴] | $W_y$ [cm³] | $W_z$ [cm³] |
| Q100-2.5 | S235 | hot-dip galvanised | 158 | M10, M12 | 9.97 | 12.8 | 185.1 | 156 | 37 | 31.2 |
| Q100-3.5 | | | | | 14.05 | 17.3 | 249.1 | 213.9 | 49.8 | 42.8 |

## Max. load capacities of profile [N]:

| Profile | Bending into direction | L [m] | | | | | | L [m] | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 0.5 | 1.0 | 1.5 | 2.0 | 4.0 | 6.0 | 0.5 | 1.0 | 1.5 | 2.0 | 4.0 | 6.0 |
|  | |  | | | | | |  | | | | | |
| Q100-2.5 | ZZ | 37,101 | 21,807 | 15,047 | 11,398 | 5,586 | 2,225 | 25,268 | 15,188 | 10,873 | 8,360 | 3,279 | 1,306 |
| Q100-3.5 | | 50,653 | 29,493 | 20,296 | 15,357 | 7,502 | 2,971 | 34,767 | 20,636 | 14,703 | 11,280 | 4,404 | 1,744 |
| Q100-2.5 | YY | 33,105 | 18,787 | 12,869 | 9,747 | 4,914 | 2,184 | 23,335 | 13,331 | 9,393 | 7,193 | 2,885 | 1,282 |
| Q100-3.5 | | 45,733 | 25,820 | 17,670 | 13,378 | 6,738 | 2,995 | 32,325 | 18,358 | 12,910 | 9,878 | 3,955 | 1,758 |
|  | |  | | | | | |  | | | | | |
| Q100-2.5 | ZZ | 16,859 | 10,118 | 7,249 | 5,575 | 2,352 | 937 | 13,195 | 8,195 | 5,951 | 4,605 | 1,847 | 736 |
| Q100-3.5 | | 23,199 | 13,747 | 9,802 | 7,524 | 3,159 | 1,251 | 18,191 | 11,152 | 8,056 | 6,218 | 2,481 | 982 |
| Q100-2.5 | YY | 15,572 | 8,880 | 6,262 | 4,798 | 2,069 | 920 | 12,295 | 7,239 | 5,161 | 3,972 | 1,625 | 722 |
| Q100-3.5 | | 21,572 | 12,229 | 8,607 | 6,589 | 2,837 | 1,261 | 17,050 | 9,976 | 7,096 | 5,456 | 2,228 | 990 |

The determined loads apply for static loads. Calculation based on Eurocode (EC3).

The safety coefficient γ = 1.48 takes into account the partial and combination coefficients as well as the safety factor of the material.

For the given values, the permissible steel stress and the maximum permissible deflection $L_{/200}$ are not exceeded, taking the deadweight into consideration.



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# MPT-Support profiles

## Buckling loads

**Permissible buckling loads for profiles [N]:**

| Buckling length Lk [mm] | Q50-2.5 hot-dip galvanised | Q80-2.0 hot-dip galvanised | Q100-2.5 hot-dip galvanised | Q100-3.5 hot-dip galvanised | Q100-2.5 sendzimir galvanised | Q100-3.5 sendzimir galvanised | Q100-2.5 3-slots hot-dip galvanised | Q100-2.5 3-slots sendzimir galvanised | Q100-2.5 4-slots hot-dip galvanised | Q150-2.5 3-slots hot-dip galvanised |
|---|---|---|---|---|---|---|---|---|---|---|
| 200 | 128,182 | 126,656 | 195,325 | 209,821 | 207,792 | 280,844 | 229,642 | 208,766 | 263,994 | 247,208 |
| 400 | 127,400 | 126,656 | 195,325 | 209,821 | 207,792 | 280,844 | 229,642 | 208,766 | 263,994 | 247,208 |
| 600 | 122,358 | 124,732 | 195,325 | 209,821 | 207,792 | 280,844 | 229,642 | 208,766 | 263,994 | 247,208 |
| 800 | 116,925 | 121,003 | 192,269 | 206,737 | 203,728 | 275,861 | 224,569 | 205,067 | 260,028 | 244,946 |
| 1,000 | 110,833 | 117,063 | 187,954 | 202,159 | 198,904 | 269,488 | 219,064 | 200,331 | 254,244 | 239,937 |
| 1,200 | 103,867 | 112,799 | 183,477 | 197,414 | 193,870 | 262,856 | 213,302 | 195,403 | 248,247 | 234,784 |
| 1,400 | 95,963 | 108,111 | 178,763 | 192,425 | 188,538 | 255,850 | 207,174 | 190,197 | 241,938 | 229,409 |
| 1,600 | 87,313 | 102,923 | 173,738 | 187,116 | 182,821 | 248,358 | 200,578 | 184,631 | 235,220 | 223,739 |
| 1,800 | 78,371 | 97,214 | 168,338 | 181,417 | 176,644 | 240,284 | 193,428 | 178,631 | 228,007 | 217,702 |
| 2,000 | 69,681 | 91,042 | 162,510 | 175,273 | 169,952 | 231,551 | 185,668 | 172,143 | 220,227 | 211,238 |
| 2,200 | 61,661 | 84,554 | 156,224 | 168,650 | 162,726 | 222,125 | 177,288 | 165,140 | 211,839 | 204,298 |
| 2,400 | 54,519 | 77,964 | 149,485 | 161,547 | 154,996 | 212,028 | 168,343 | 157,638 | 202,845 | 196,861 |
| 2,600 | 48,291 | 71,499 | 142,342 | 154,010 | 146,848 | 201,356 | 158,960 | 149,709 | 193,304 | 188,935 |
| 2,800 | 42,918 | 65,344 | 134,888 | 146,130 | 138,425 | 190,273 | 149,327 | 141,473 | 183,335 | 180,572 |
| 3,000 | 38,301 | 59,625 | 127,255 | 138,039 | 129,904 | 178,996 | 139,665 | 133,093 | 173,109 | 171,866 |
| 3,200 | 34,333 | 54,399 | 119,596 | 129,894 | 121,470 | 167,762 | 130,187 | 124,744 | 162,824 | 162,948 |
| 3,400 | 30,915 | 49,677 | 112,059 | 121,851 | 113,286 | 156,790 | 121,073 | 116,589 | 152,681 | 153,968 |
| 3,600 | 27,959 | 45,440 | 104,771 | 114,047 | 105,478 | 146,258 | 112,450 | 108,761 | 142,852 | 145,079 |
| 3,800 | 25,393 | 41,652 | 97,827 | 106,589 | 98,130 | 136,291 | 104,393 | 101,352 | 133,467 | 136,416 |
| 4,000 | 23,153 | 38,269 | 91,288 | 99,547 | 91,285 | 126,961 | 96,935 | 94,415 | 124,613 | 128,089 |
| 4,200 | 21,191 | 35,248 | 85,186 | 92,958 | 84,955 | 118,298 | 90,074 | 87,975 | 116,337 | 120,172 |
| 4,400 | 19,462 | 32,546 | 79,527 | 86,836 | 79,131 | 110,300 | 83,790 | 82,028 | 108,653 | 112,713 |
| 4,600 | 17,933 | 30,126 | 74,303 | 81,174 | 73,790 | 102,944 | 78,049 | 76,558 | 101,551 | 105,733 |
| 4,800 | 16,575 | 27,954 | 69,495 | 75,955 | 68,901 | 96,194 | 72,809 | 71,539 | 95,007 | 99,233 |
| 5,000 | 15,364 | 25,999 | 65,077 | 71,153 | 64,429 | 90,007 | 68,028 | 66,939 | 88,989 | 93,200 |
| 5,200 | 14,279 | 24,236 | 61,020 | 66,740 | 60,338 | 84,338 | 63,665 | 62,723 | 83,460 | 87,615 |
| 5,400 | 13,304 | 22,641 | 57,296 | 62,684 | 56,595 | 79,144 | 59,679 | 58,860 | 78,380 | 82,450 |
| 5,600 | 12,425 | 21,194 | 53,875 | 58,956 | 53,167 | 74,380 | 56,035 | 55,318 | 73,712 | 77,678 |
| 5,800 | 11,629 | 19,879 | 50,730 | 55,527 | 50,023 | 70,007 | 52,697 | 52,066 | 69,420 | 73,268 |
| 6,000 | 10,908 | 18,680 | 47,837 | 52,370 | 47,136 | 65,988 | 49,636 | 49,077 | 65,469 | 69,192 |
| 6,200 | 10,250 | 17,585 | 45,171 | 49,460 | 44,481 | 62,289 | 46,823 | 46,326 | 61,827 | 65,423 |
| 6,400 | 9,651 | 16,581 | 42,712 | 46,774 | 42,036 | 58,879 | 44,235 | 43,790 | 58,467 | 61,934 |
| 6,600 | 9,102 | 15,660 | 40,441 | 44,293 | 39,781 | 55,733 | 41,849 | 41,450 | 55,363 | 58,702 |
| 6,800 | 8,598 | 14,813 | 38,339 | 41,996 | 37,697 | 52,823 | 39,647 | 39,286 | 52,490 | 55,704 |
| 7,000 | 8,136 | 14,032 | 36,392 | 39,868 | 35,768 | 50,129 | 37,609 | 37,283 | 49,828 | 52,920 |
| 7,200 | 7,709 | 13,311 | 34,586 | 37,893 | 33,980 | 47,631 | 35,721 | 35,425 | 47,358 | 50,332 |
| 7,400 | 7,315 | 12,643 | 32,907 | 36,057 | 32,319 | 45,311 | 33,969 | 33,700 | 45,062 | 47,922 |
| 7,600 | 6,950 | 12,024 | 31,345 | 34,348 | 30,776 | 43,153 | 32,341 | 32,094 | 42,926 | 45,676 |
| 7,800 | 6,612 | 11,449 | 29,890 | 32,756 | 29,338 | 41,142 | 30,825 | 30,599 | 40,934 | 43,580 |
| 8,000 | 6,298 | 10,914 | 28,531 | 31,269 | 27,997 | 39,267 | 29,412 | 29,204 | 39,076 | 41,622 |
| 8,200 | 6,006 | 10,416 | 27,262 | 29,880 | 26,745 | 37,515 | 28,093 | 27,901 | 37,338 | 39,789 |
| 8,400 | 5,733 | 9,951 | 26,074 | 28,579 | 25,574 | 35,875 | 26,859 | 26,682 | 35,713 | 38,073 |
| 8,600 | 5,479 | 9,516 | 24,961 | 27,361 | 24,477 | 34,340 | 25,704 | 25,540 | 34,190 | 36,463 |
| 8,800 | 5,241 | 9,108 | 23,917 | 26,218 | 23,449 | 32,900 | 24,621 | 24,469 | 32,761 | 34,951 |
| 9,000 | 5,018 | 8,727 | 22,936 | 25,144 | 22,483 | 31,548 | 23,605 | 23,463 | 31,418 | 33,530 |
| 9,200 | 4,810 | 8,368 | 22,014 | 24,134 | 21,575 | 30,276 | 22,650 | 22,518 | 30,156 | 32,193 |
| 9,400 | 4,613 | 8,032 | 21,145 | 23,183 | 20,721 | 29,080 | 21,751 | 21,628 | 28,967 | 30,933 |
| 9,600 | 4,429 | 7,715 | 20,327 | 22,286 | 19,916 | 27,952 | 20,904 | 20,789 | 27,846 | 29,744 |
| 9,800 | 4,256 | 7,416 | 19,555 | 21,441 | 19,157 | 26,888 | 20,106 | 19,998 | 26,789 | 28,622 |
| 10,000 | 4,092 | 7,135 | 18,825 | 20,642 | 18,440 | 25,883 | 19,352 | 19,250 | 25,791 | 27,562 |
| 10,200 | 3,938 | 6,869 | 18,136 | 19,886 | 17,762 | 24,933 | 18,639 | 18,544 | 24,846 | 26,559 |
| 10,400 | 3,792 | 6,617 | 17,483 | 19,171 | 17,121 | 24,034 | 17,965 | 17,875 | 23,953 | 25,609 |
| 10,600 | 3,654 | 6,380 | 16,865 | 18,494 | 16,513 | 23,183 | 17,326 | 17,242 | 23,106 | 24,709 |
| 10,800 | 3,524 | 6,154 | 16,278 | 17,851 | 15,938 | 22,376 | 16,721 | 16,642 | 22,303 | 23,855 |
| 11,000 | 3,400 | 5,941 | 15,722 | 17,241 | 15,391 | 21,610 | 16,147 | 16,072 | 21,541 | 23,044 |
| 11,200 | 3,283 | 5,738 | 15,194 | 16,662 | 14,873 | 20,882 | 15,602 | 15,531 | 20,818 | 22,274 |
| 11,400 | 3,172 | 5,546 | 14,691 | 16,112 | 14,380 | 20,191 | 15,084 | 15,017 | 20,129 | 21,541 |
| 11,600 | 3,066 | 5,363 | 14,213 | 15,588 | 13,910 | 19,533 | 14,591 | 14,527 | 19,475 | 20,844 |
| 11,800 | 2,966 | 5,189 | 13,758 | 15,089 | 13,464 | 18,906 | 14,122 | 14,061 | 18,851 | 20,180 |
| 12,000 | 2,870 | 5,023 | 13,324 | 14,614 | 13,038 | 18,310 | 13,675 | 13,618 | 18,257 | 19,547 |



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# MPT-Support profiles

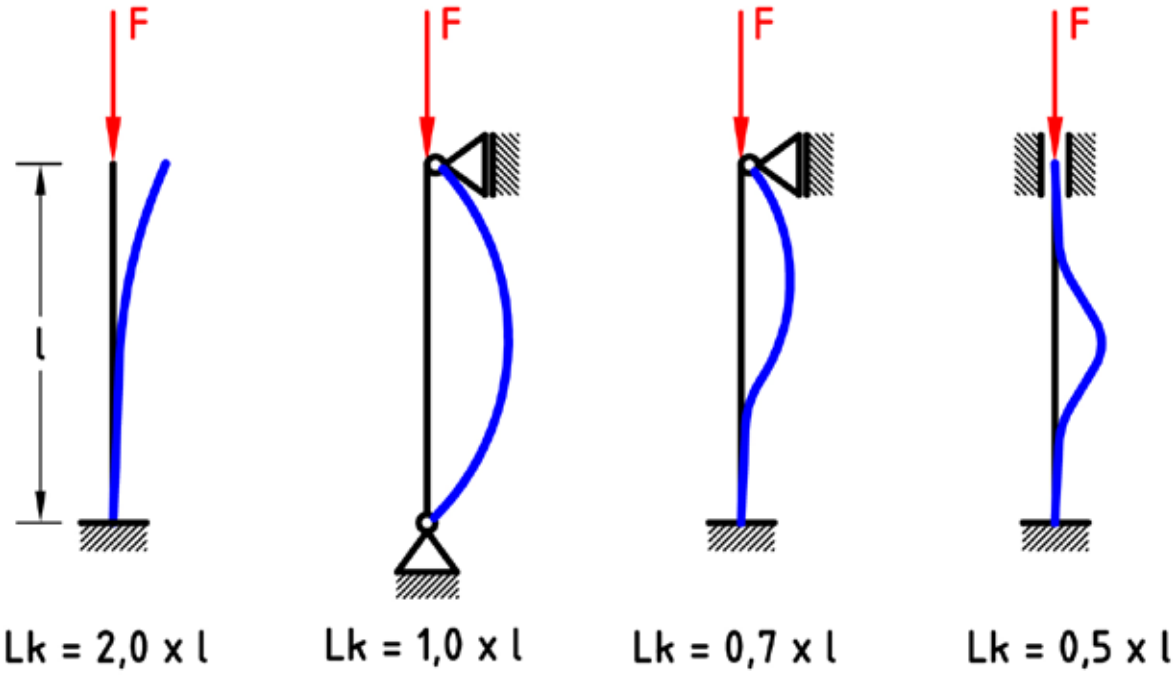
## Buckling loads

Buckling loads as per DIN EN 1993-1-1 sections 6.2 and 6.3.
The values in the table apply for fully bearing cross-sections and central load transmission!
The potentially lower slenderness parameter for buckling and lateral torsional buckling must be examined separately!

Buckling about the z-axis and the y-axis was considered.
The least favourable buckling load is documented in the table.

The safety coefficient γ = 1.54 takes into account the safety and combination coefficients as well as the safety factor of the material.

Determine the authoritative buckling length Lk depending on the storage conditions and the rod length l, as shown in the figure.
Read off the buckling load F as Lk from the table.





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