

MPR-Support channels

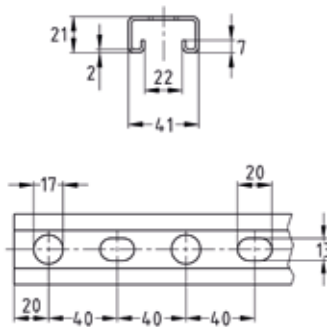
stainless steel

Application

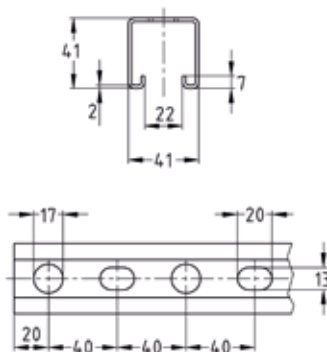
- Ideal for pipe installation as support structure for air ducts
- Variety of mounting options in combination with extensive range of system components
- For indoor and outdoor use

Your advantages

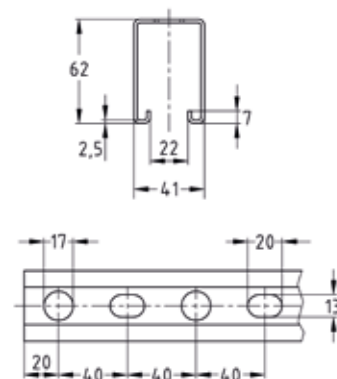
- Fast and efficient attachment of piping and pipe routes
- High bending stiffness due to the cross-section design
- Scale marks sideways and on the side with the slot simplify the alignment of the attachment elements during installation and facilitate the measuring and cutting to length of the section on site
- For secure fixing that is adjustable laterally and vertically
- For setting up structures with correctly measured static loads by means of diverse connection components
- Meshing into the channel slot for positive-fit attachment of add-on parts
- Clean-cut appearance by the use of MPR-protection caps



Profile 41/21/2.0



Profile 41/41/2.0



Profile 41/62/2.5

Features



| Profile | Length [mm] | Material | Part no. | Sales unit | Pack unit |
|-----------|-------------|----------|----------|------------|-----------|
| 41/21/2.0 | 2,000 | V4A | 154393 | 1 | Pieces |
| | 6,000 | | 154395 | | |
| 41/41/2.0 | 2,000 | | 154396 | | |
| | 6,000 | | 154398 | | |
| 41/62/2.5 | | | 154404 | | |

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Technical data

Technical data of profile:

| Features | | | | | | | | | |
|--------------|----------|--|----------------------------|-----------------------|--|--------------------------|--------------------------|--------------------------|--------------------------|
| Profile | Material | Admissible steel stress $\sigma_{adm.}$ [N/mm ²] | Available threaded plates* | Profile weight [kg/m] | Profile cross-section [cm ²] | Moment of inertia | | Resistance moment | |
| | | | | | | I_y [cm ⁴] | I_z [cm ⁴] | W_y [cm ³] | W_z [cm ³] |
| | | | | | | | | | |
| 41/21/2.0 | V4A | 149 | M8, M10, M12 | 1.45 | 1.62 | 0.8894 | 4.5246 | 0.839 | 2.207 |
| 41/41/2.0 | | | | 2.08 | 2.42 | 4.9736 | 7.5692 | 2.451 | 3.692 |
| 41/62/2.5 | | | | 3.38 | 3.98 | 17.209 | 12.9297 | 5.671 | 6.307 |
| 41/82/2.0 H | | | | 4.16 | 4.83 | 30.6876 | 15.1385 | 7.485 | 7.385 |
| 41/124/2.5 H | | | | 6.76 | 7.96 | 111.7528 | 25.8595 | 18.025 | 12.614 |

Load bearing capacities of profiles for bending around the y-axis [N]:

| Profile | 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 |
| | | | | | | | | | | | | |
| 41/21/2.0 | 995 | 418 | 176 | 89 | - | - | 741 | 246 | 104 | 52 | - | - |
| 41/41/2.0 | 2,895 | 1,450 | 960 | 571 | 98 | - | 2,141 | 1,085 | 612 | 335 | 58 | - |
| 41/62/2.5 | 6,659 | 3,358 | 2,230 | 1,659 | 433 | 105 | 4,891 | 2,508 | 1,668 | 1,187 | 254 | 62 |
| 41/82/2.0 H | 6,541 | 4,425 | 2,943 | 2,191 | 819 | 256 | 3,271 | 3,261 | 2,200 | 1,640 | 481 | 150 |
| 41/124/2.5 H | 13,612 | 10,625 | 7,096 | 5,309 | 2,557 | 1,241 | 6,806 | 6,790 | 5,292 | 3,963 | 1,871 | 729 |
| | | | | | | | | | | | | |
| 41/21/2.0 | 495 | 176 | 74 | 37 | - | - | 412 | 138 | 58 | 29 | - | - |
| 41/41/2.0 | 1,430 | 723 | 439 | 241 | 41 | - | 1,186 | 602 | 345 | 189 | 32 | - |
| 41/62/2.5 | 3,267 | 1,670 | 1,112 | 828 | 182 | 44 | 2,700 | 1,389 | 926 | 669 | 143 | 35 |
| 41/82/2.0 H | 2,181 | 2,174 | 1,467 | 1,094 | 345 | 108 | 1,635 | 1,630 | 1,221 | 911 | 271 | 85 |
| 41/124/2.5 H | 4,538 | 4,527 | 3,528 | 2,643 | 1,278 | 532 | 3,403 | 3,395 | 2,933 | 2,200 | 1,054 | 411 |

* Please note additional information on the catalog pages of threaded plates/hammer head fasteners.

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

The safety coefficient $\gamma = 1.54$ 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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Permissible buckling loads for profiles [N]:

| Buckling length Lk [mm] | 41/21/2.0 | 41/41/2.0 | 41/62/2.5 | 41/82/2.0 H | 41/124/2.5 H |
|-------------------------|-----------|-----------|-----------|-------------|--------------|
| 200 | 23,392 | 36,132 | 59,486 | 72,188 | 118,971 |
| 300 | 22,034 | 35,800 | 59,486 | 72,188 | 118,971 |
| 400 | 20,452 | 34,820 | 58,648 | 71,487 | 117,930 |
| 500 | 18,561 | 33,795 | 57,360 | 70,480 | 116,306 |
| 600 | 16,395 | 32,699 | 56,027 | 69,412 | 114,589 |
| 700 | 14,139 | 31,509 | 54,626 | 68,258 | 112,739 |
| 800 | 12,028 | 30,203 | 53,137 | 66,989 | 110,713 |
| 900 | 10,198 | 28,769 | 51,540 | 65,572 | 108,459 |
| 1,000 | 8,676 | 27,209 | 49,820 | 63,972 | 105,924 |
| 1,100 | 7,430 | 25,543 | 47,965 | 62,152 | 103,048 |
| 1,200 | 6,413 | 23,810 | 45,977 | 60,078 | 99,778 |
| 1,300 | 5,580 | 22,062 | 43,865 | 57,731 | 96,077 |
| 1,400 | 4,894 | 20,349 | 41,655 | 55,115 | 91,944 |
| 1,500 | 4,323 | 18,715 | 39,382 | 52,268 | 87,422 |
| 1,600 | 3,844 | 17,187 | 37,088 | 49,261 | 82,612 |
| 1,700 | 3,439 | 15,780 | 34,819 | 46,184 | 77,649 |
| 1,800 | 3,094 | 14,498 | 32,612 | 43,129 | 72,677 |
| 1,900 | 2,797 | 13,337 | 30,499 | 40,171 | 67,825 |
| 2,000 | 2,541 | 12,290 | 28,499 | 37,363 | 63,188 |
| 2,100 | 2,319 | 11,348 | 26,625 | 34,737 | 58,826 |
| 2,200 | 2,124 | 10,500 | 24,882 | 32,304 | 54,767 |
| 2,300 | 1,952 | 9,736 | 23,268 | 30,067 | 51,020 |
| 2,400 | 1,801 | 9,048 | 21,778 | 28,017 | 47,576 |
| 2,500 | 1,666 | 8,426 | 20,407 | 26,142 | 44,421 |
| 2,600 | 1,546 | 7,863 | 19,145 | 24,431 | 41,534 |
| 2,700 | 1,438 | 7,353 | 17,985 | 22,868 | 38,893 |
| 2,800 | 1,341 | 6,889 | 16,918 | 21,439 | 36,477 |
| 2,900 | 1,254 | 6,466 | 15,937 | 20,133 | 34,265 |
| 3,000 | 1,175 | 6,080 | 15,032 | 18,936 | 32,237 |
| 3,100 | 1,103 | 5,727 | 14,199 | 17,838 | 30,376 |
| 3,200 | 1,038 | 5,403 | 13,429 | 16,830 | 28,664 |
| 3,300 | 978 | 5,106 | 12,718 | 15,902 | 27,088 |
| 3,400 | 923 | 4,832 | 12,060 | 15,046 | 25,635 |
| 3,500 | 873 | 4,579 | 11,449 | 14,256 | 24,292 |
| 3,600 | 826 | 4,345 | 10,883 | 13,525 | 23,050 |
| 3,700 | 784 | 4,129 | 10,356 | 12,848 | 21,899 |
| 3,800 | 744 | 3,928 | 9,866 | 12,220 | 20,830 |
| 3,900 | 707 | 3,741 | 9,409 | 11,636 | 19,836 |
| 4,000 | 673 | 3,567 | 8,982 | 11,092 | 18,910 |
| 4,100 | 642 | 3,405 | 8,584 | 10,585 | 18,047 |
| 4,200 | 612 | 3,254 | 8,210 | 10,111 | 17,241 |
| 4,300 | 585 | 3,112 | 7,861 | 9,669 | 16,487 |
| 4,400 | 559 | 2,980 | 7,532 | 9,254 | 15,781 |
| 4,500 | 535 | 2,855 | 7,224 | 8,865 | 15,119 |
| 4,600 | 513 | 2,739 | 6,934 | 8,500 | 14,498 |
| 4,700 | 492 | 2,629 | 6,661 | 8,157 | 13,913 |
| 4,800 | 472 | 2,526 | 6,404 | 7,835 | 13,363 |
| 4,900 | 453 | 2,428 | 6,161 | 7,530 | 12,845 |
| 5,000 | 436 | 2,336 | 5,931 | 7,244 | 12,356 |
| 5,100 | 419 | 2,250 | 5,714 | 6,973 | 11,895 |
| 5,200 | 404 | 2,168 | 5,509 | 6,717 | 11,458 |
| 5,300 | 389 | 2,090 | 5,314 | 6,474 | 11,045 |
| 5,400 | 375 | 2,016 | 5,130 | 6,245 | 10,654 |
| 5,500 | 362 | 1,947 | 4,955 | 6,027 | 10,283 |
| 5,600 | 349 | 1,880 | 4,788 | 5,821 | 9,932 |
| 5,700 | 337 | 1,818 | 4,630 | 5,625 | 9,597 |
| 5,800 | 326 | 1,758 | 4,480 | 5,439 | 9,280 |
| 5,900 | 315 | 1,701 | 4,336 | 5,261 | 8,978 |
| 6,000 | 305 | 1,647 | 4,200 | 5,093 | 8,690 |



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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!

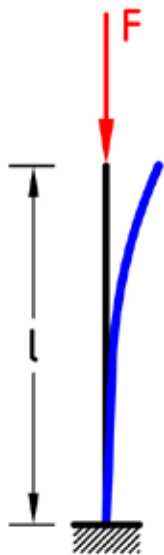
Buckling about the z-axis and the y-axis was considered.

The least favourable buckling load is documented in the table.

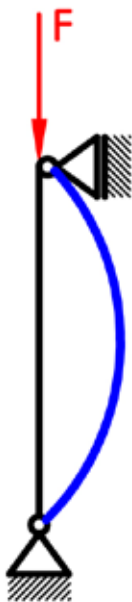
The safety coefficient $\gamma = 1.54$ takes into account the safety and combination coefficients as well as the safety factor of the material.

Determine the authoritative buckling length L_k depending on the storage conditions and the rod length l , as shown in the figure.

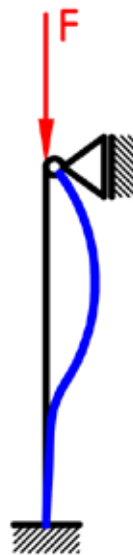
Read off the buckling load F as L_k from the table.



$$L_k = 2,0 \times l$$



$$L_k = 1,0 \times l$$



$$L_k = 0,7 \times l$$



$$L_k = 0,5 \times l$$

