Channels

## Imperial Series

| Designation |  | Depth of Section D | Width of Section B | Thickness |  | $\begin{aligned} & \text { Distance } \\ & \text { of } \\ & \text { Cy } \end{aligned}$ | Root radius $r_{1}$ | Toe radius $r_{2}$ | $\qquad$ <br> Depth between fillets d | Ratios for Local Buckling |  | Moment of inertia |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Serial size | Mass per metre |  |  | Web t | $\begin{aligned} & \text { Flange } \\ & \mathbf{T} \end{aligned}$ |  |  |  |  | Flange b/T | Web $d / t$ | $\begin{aligned} & \text { Axis } \\ & x-x \end{aligned}$ | $\begin{aligned} & \text { Axis } \\ & y-y \end{aligned}$ |
| mm | kg | mm | mm | mm | mm | cm | mm | mm | mm |  |  | $\mathrm{cm}^{4}$ | cm ${ }^{4}$ |
| $432 \times 102$ | 65.54 | 431.8 | 101.6 | 12.2 | 16.8 | 2.32 | 15.2 | 4.8 | 362.5 | 6.05 | 29.7 | 21399 | 628.6 |
| $381 \times 102$ | 55.10 | 381.0 | 101.6 | 10.4 | 16.3 | 2.52 | 15.2 | 4.8 | 312.6 | 6.23 | 30.0 | 14894 | 579.7 |
| $305 \times 102$ | 46.18 | 304.8 | 101.6 | 10.2 | 14.8 | 2.66 | 15.2 | 4.8 | 239.3 | 6.86 | 23.5 | 8214 | 499.5 |
| $305 \times 89$ | 41.69 | 304.8 | 88.9 | 10.2 | 13.7 | 2.18 | 13.7 | 3.2 | 245.4 | 6.49 | 24.1 | 7061 | 325.4 |
| $254 \times 89$ | 35.74 | 254.0 | 88.9 | 9.1 | 13.6 | 2.42 | 13.7 | 3.2 | 194.7 | 6.54 | 21.4 | 4448 | 302.4 |
| $254 \times 76$ | 28.29 | 254.0 | 75.2 | 8.1 | 10.9 | 1.86 | 12.2 | 3.2 | 203.9 | 6.99 | 25.2 | 3367 | 162.6 |
| $229 \times 89$ | 32.76 | 228.6 | 88.9 | 8.6 | 13.3 | 2.53 | 13.7 | 3.2 | 169.9 | 6.68 | 19.7 | 3387 | 285.0 |
| $229 \times 76$ | 26.06 | 228.6 | 76.2 | 11.2 | 2.00 | 12.2 | 3.2 | 177.8 | 6.80 | 23.4 | 2610 | 158.7 |  |
| $203 \times 89$ | 29.78 | 203.2 | 88.9 | 8.1 | 12.9 | 2.65 | 13.7 | 3.2 | 145.2 | 6.89 | 17.9 | 2491 | 264.4 |
| $203 \times 76$ | 23.82 | 203.2 | 76.2 | 7.1 | 11.2 | 2.13 | 12.2 | 3.2 | 152.4 | 6.80 | 21.5 | 1950 | 151.3 |
| $178 \times 89$ | 26.81 | 177.8 | 88.9 | 7.6 | 12.3 | 2.76 | 13.7 | 3.2 | 121.0 | 7.23 | 15.9 | 1753 | 241.0 |
| $178 \times 76$ | 20.84 | 177.8 | 76.2 | 6.6 | 10.3 | 2.20 | 12.2 | 3.2 | 128.8 | 7.40 | 19.5 | 1337 | 134.0 |
| $152 \times 89$ | 23.84 | 152.4 | 88.9 | 7.1 | 11.6 | 2.86 | 13.7 | 3.2 | 96.9 | 7.66 | 13.7 | 1166 | 215.1 |
| $152 \times 76$ | 17.88 | 152.4 | 76.2 | 6.4 | 9.0 | 2.21 | 12.2 | 2.4 | 105.9 | 8.47 | 16.5 | 851.5 | 113.8 |
| $127 \times 64$ | 14.90 | 127.0 | 63.5 | 6.4 | 9.2 | 1.94 | 10.7 | 2.4 | 84.0 | 6.90 | 13.1 | 482.5 | 67.23 |
| $100 \times 50$ | 9.36 | 100.0 | 50.0 | 5.0 | 7.5 | 1.55 | 8 | - | - | - | - | 189 | 26.9 |
| $75 \times 40$ | 6.92 | 75.0 | 40.0 | 5.0 | 7.0 | 1.57 | 8 | 4 | - | - | - | 75.9 | 12.4 |

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Imperial Series


| Radius of gyration |  | Elastic modulus |  | Plastic modulus |  | Buckling <br> Parameter <br> $u$ | Torsional Index x | Warping <br> Constant <br> H | Torsional Constant J | Area of Section | Designation |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Axis $x-x$ | Axis $y-y$ | $\begin{aligned} & \text { Axis } \\ & x-x \end{aligned}$ | Axis $y-y$ | Axis $x-x$ | Axis $y-y$ |  |  |  |  |  | Mass per metre | Serial size |
| cm | cm | $\mathrm{cm}^{3}$ | $\mathrm{cm}^{3}$ | $\mathrm{cm}^{3}$ | $\mathrm{cm}^{3}$ |  |  | $\mathrm{dm}^{6}$ | cm | $\mathrm{cm}^{2}$ | kg | mm |
| 16.0 | 2.74 | 991.1 | 80.14 | 1207 | 153.1 | 0.876 | 24.6 | 0.217 | 61.0 | 83.49 | 65.54 | $432 \times 102$ |
| 14.6 | 2.87 | 781.8 | 75.86 | 932.7 | 144.4 | 0.895 | 22.7 | 0.153 | 46.0 | 70.19 | 55.10 | $381 \times 102$ |
| 11.8 | 2.91 | 539.0 | 66.59 | 638.3 | 128.1 | 0.900 | 18.9 | 0.0842 | 35.4 | 58.83 | 46.18 | $305 \times 102$ |
| 11.5 | 2.48 | 463.3 | 48.49 | 557.1 | 92.60 | 0.887 | 20.4 | 0.0551 | 27.6 | 53.11 | 41.69 | $305 \times 89$ |
| 9.88 | 2.58 | 350.2 | 46.70 | 414.4 | 89.56 | 0.906 | 17.1 | 0.0347 | 22.9 | 45.52 | 35.74 | $254 \times 89$ |
| 9.67 | 2.12 | 265.1 | 28.21 | 317.4 ; | 54.14 | 0.886 | 21.2 | 0.0194 | 12.3 | 36.03 | 28.29 | $254 \times 76$ |
| 9.01 | 2.61 | 296.4 | 44.82 | 348.4 | 86.38 | 0.912 | 15.5 | 0.0263 | 20.4 | 41.73 | 32.76 | $229 \times 89$ |
| 8.87 | 2.19 | 228.3 | 28.22 | 270.3 | 54.24 | 0.900 | 18.8 | 0.0151 | 11.4 | 33.20 | 26.06 | $229 \times 76$ |
| 8.10 | 2.64 | 245.2 | 42.34 | 286.6 | 81.62 | 0.915 | 14.1 | 0.0192 | 17.8 | 37.94 | 29.78 | $203 \times 89$ |
| 8.02 | 2.23 | 192.0 | 27.59 | 225.2 | 53.32 | 0.911 | 16.7 | 0.0112 | 10.4 | 30.34 | 23.82 | $203 \times 76$ |
| 7.16 | 2.66 | 197.2 | 39.29 | 229.6 | 75.44 | 0.915 | 12.7 | 0.0134 | 15.1 | 34.15 | 26.81 | $178 \times 89$ |
| 7.10 | 2.25 | 150.4 | 24.72 | 175.4 | 48.07 | 0.911 | 15.5 | 0.00764 | 8.13 | 26.54 | 20.84 | $178 \times 76$ |
| 6.20 | 2.66 | 153.0 | 35.70 | 177.7 | 68.12 | 0.909 | 11.3 | 0.00881 | 12.4 | 30.36 | 23.84 | $152 \times 89$ |
| 6.11 | 2.24 | 111.8 | 21.05 | 130.0 | 41.26 | 0.902 | 14.5 | 0.00486 | 5.94 | 22.77 | 17.8 | $152 \times 76$ |
| 5.04 | 1.88 | 75.99 | 15.25 | 89.4 | 29.31 | 0.910 | 11.7 | 0.00187 | 4.92 | 18.98 | 14.90 | $127 \times 64$ |
| 3.98 | 1.50 | 37.8 | 7.82 | - | - | - | - | - | - | 11.92 | 9.36 | $100 \times 50$ |
| 2.93 | 1.19 | 20.2 | 4.54 | - | - | - | - | - | - | 8.21 | 5.92 | $75 \times 40$ |

