

# Freeman Roofing (FR) Purlins & Girts

We fabricate heavy duty C section purlins and girts from roll formed galvanised NZ Steel. These are tested and approved by structural engineers for the New Zealand construction industry and are perfect for pre-engineered sheds, garages and workshops.

AUTHORISED SUPPLIER



COLORSTEEL



New Zealand  
Steel



[freemanroofing.co.nz](http://freemanroofing.co.nz)







## FREEMAN ROOFING (FR) PURLINS & GIRTS

Freeman Roofing FR Purlin & Girts sections are continually roll-formed from zinc-coated high-tensile steel, punched in-line, and cut to length.

These versatile components find their intended use in various building applications. Whether you are constructing residential roofs, commercial buildings, or industrial structures, our FR Purlin & Girts are designed to meet your specific needs. Accessories are zinc-coated and crafted to bespoke sizes or provided as standard components. The optimised dimensions of FR Purlin & Girts and the extensive selection of depths and thicknesses position them as a leading performer among lightweight, cold-formed steel sections.

### LIMITATIONS OF USE:

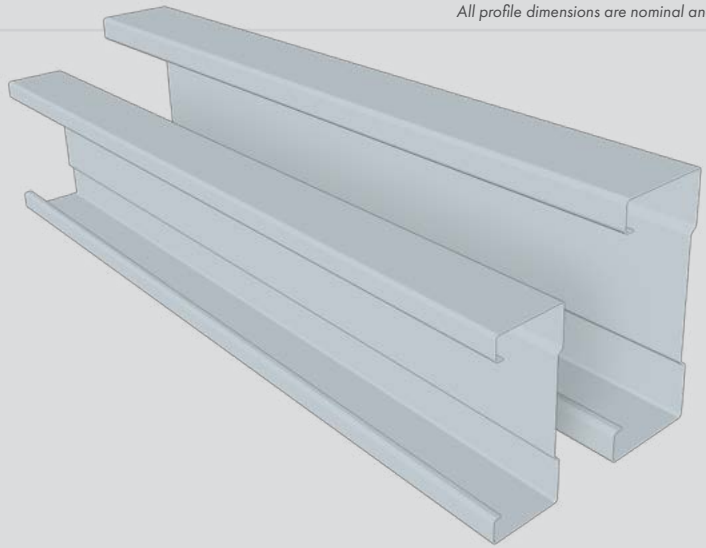
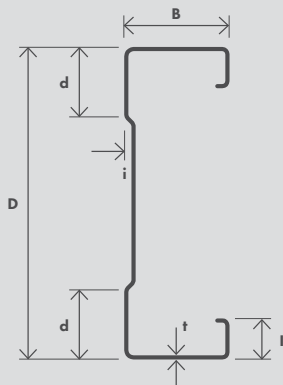
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## FULL SECTION PROPERTIES

### (FR) PURLINS & GIRTS

All profile dimensions are nominal and in mm

Dimensioned Drawing of (FR) Purlins & Girts



| Purlin Section | DxB<br>mm | t<br>mm | Mass<br>kg/m | Weight<br>kN/m | Area<br>mm <sup>2</sup> | d<br>mm | i<br>mm | b<br>mm | l<br>mm | I <sub>xx</sub><br>10 <sup>6</sup> mm <sup>4</sup> | I <sub>yy</sub><br>10 <sup>6</sup> mm | zxx<br>10 <sup>3</sup> mm <sup>3</sup> | J<br>mm <sup>4</sup> | I <sub>w</sub><br>10 <sup>9</sup> mm <sup>6</sup> |
|----------------|-----------|---------|--------------|----------------|-------------------------|---------|---------|---------|---------|----------------------------------------------------|---------------------------------------|----------------------------------------|----------------------|---------------------------------------------------|
| CLR 150/12     | 150x65    | 1.15    | 2.96         | 0.03           | 378                     | 54      | 4       | 10      | 23      | 1.33                                               | 0.244                                 | 17.73                                  | 168                  | 1.44                                              |
| CLR 150/15     | 150x65    | 1.45    | 3.72         | 0.04           | 474                     | 54      | 4       | 10      | 23      | 1.66                                               | 0.301                                 | 22.13                                  | 334                  | 1.76                                              |
| CLR 200/12     | 200x75    | 1.15    | 3.68         | 0.036          | 468                     | 63      | 6       | 12      | 25      | 2.845                                              | 0.377                                 | 28.78                                  | 206                  | 3.8                                               |
| CLR 200/15     | 200x75    | 1.45    | 4.59         | 0.045          | 584                     | 63      | 6       | 12      | 25      | 3.533                                              | 0.462                                 | 35.85                                  | 409                  | 4.5                                               |
| CLR 200/18     | 200x75    | 1.75    | 5.49         | 0.054          | 699                     | 63      | 6       | 12      | 25      | 4.199                                              | 0.539                                 | 42.74                                  | 713                  | 5.2                                               |
| CLR 250/13     | 250x85    | 1.25    | 5.00         | 0.049          | 638                     | 67      | 7       | 12      | 33      | 5.99                                               | 0.67                                  | 48.0                                   | 324                  | 97                                                |
| CLR 250/15     | 250x85    | 1.45    | 5.80         | 0.057          | 740                     | 67      | 7       | 12      | 33      | 6.92                                               | 0.77                                  | 55.4                                   | 506                  | 112                                               |
| CLR 250/18     | 250x85    | 1.75    | 7.00         | 0.069          | 893                     | 67      | 7       | 12      | 33      | 8.29                                               | 0.92                                  | 66.4                                   | 890                  | 134                                               |
| CLR 300/15     | 300x100   | 1.45    | 6.82         | 0.067          | 870                     | 67      | 7       | 12      | 38      | 11.86                                              | 1.26                                  | 79.1                                   | 600                  | 261                                               |
| CLR 300/18     | 300x100   | 1.75    | 8.23         | 0.081          | 1050                    | 67      | 7       | 12      | 38      | 14.11                                              | 1.49                                  | 94.2                                   | 1054                 | 310                                               |
| CLR 350/18     | 350x100   | 1.75    | 9.06         | 0.089          | 1155                    | 77      | 7       | 12      | 43      | 20.60                                              | 1.64                                  | 117.7                                  | 1161                 | 467                                               |
| CLR 350/23     | 350x100   | 2.25    | 12.42        | 0.122          | 1584                    | 77      | 7       | 12      | 43      | 27.90                                              | 2.19                                  | 160.0                                  | 2995                 | 633                                               |

### MANUFACTURING BRANCHES

#### Timaru

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# DESIGN CAPACITY CHARTS

## ULTIMATE UNIFORMLY DISTRIBUTED LOAD CAPACITY (kN/m) SINGLE SPAN

| CLR 150/12 |       |      |      |      |      | CLR 150/15 |       |      |      |      |      |
|------------|-------|------|------|------|------|------------|-------|------|------|------|------|
| Span (m)   | Brace |      |      |      |      | Span (m)   | Brace |      |      |      |      |
|            | OB    | 1B   | 2B   | FR   | Ws   |            | OB    | 1B   | 2B   | FR   | Ws   |
| 3.0        | 3.31  | 5.62 | 5.71 | 5.71 | 4.20 | 3.0        | 4.34  | 7.39 | 7.50 | 7.50 | 5.39 |
| 3.5        | 1.86  | 3.97 | 4.19 | 4.19 | 2.68 | 3.5        | 2.39  | 5.20 | 5.51 | 5.51 | 3.43 |
| 4.0        | 1.13  | 2.89 | 3.16 | 3.21 | 1.82 | 4.0        | 1.42  | 3.79 | 4.15 | 4.22 | 2.30 |
| 4.5        | 0.71  | 2.16 | 2.42 | 2.54 | 1.29 | 4.5        | 0.90  | 2.82 | 3.18 | 3.34 | 1.62 |
| 5.0        | 0.47  | 1.63 | 1.90 | 2.06 | 0.95 | 5.0        | 0.60  | 2.12 | 2.48 | 2.70 | 1.18 |
| 5.5        | 0.33  | 1.23 | 1.51 | 1.70 | 0.72 | 5.5        | 0.42  | 1.61 | 1.97 | 2.24 | 0.89 |
| 6.0        | 0.23  | 0.93 | 1.21 | 1.43 | 0.56 | 6.0        | 0.30  | 1.22 | 1.58 | 1.88 | 0.69 |
| 6.5        | 0.17  | 0.69 | 0.98 | 1.22 | 0.44 | 6.5        | 0.22  | 0.91 | 1.27 | 1.60 | 0.54 |
| 7.0        | 0.13  | 0.53 | 0.79 | 1.05 | 0.35 | 7.0        | 0.17  | 0.69 | 1.03 | 1.38 | 0.43 |
| 7.5        | 0.10  | 0.41 | 0.64 | 0.92 | 0.29 | 7.5        | 0.13  | 0.52 | 0.84 | 1.20 | 0.35 |
| 8.0        | 0.08  | 0.32 | 0.52 | 0.81 | 0.24 | 8.0        | 0.11  | 0.41 | 0.68 | 1.06 | 0.29 |

| CLR 150/18 |       |      |      |      |      |
|------------|-------|------|------|------|------|
| Span (m)   | Brace |      |      |      |      |
|            | OB    | 1B   | 2B   | FR   | Ws   |
| 3.0        | 4.87  | 8.53 | 8.53 | 8.53 | 7.51 |
| 3.5        | 2.68  | 6.27 | 6.27 | 6.27 | 4.73 |
| 4.0        | 1.60  | 4.50 | 4.80 | 4.80 | 3.17 |
| 4.5        | 1.02  | 3.25 | 3.79 | 3.79 | 2.22 |
| 5.0        | 0.69  | 2.36 | 3.07 | 3.07 | 1.62 |
| 5.5        | 0.48  | 1.70 | 2.47 | 2.54 | 1.22 |
| 6.0        | 0.35  | 1.22 | 2.00 | 2.13 | 0.94 |
| 6.5        | 0.26  | 0.89 | 1.61 | 1.82 | 0.74 |
| 7.0        | 0.20  | 0.67 | 1.30 | 1.57 | 0.59 |
| 7.5        | 0.15  | 0.51 | 1.05 | 1.37 | 0.48 |
| 8.0        | 0.12  | 0.40 | 0.84 | 1.20 | 0.40 |

| Full Section Properties |           |         |              |                |                         |         |         |         |         |         |                                                    |                                                    |                                                    |                      |
|-------------------------|-----------|---------|--------------|----------------|-------------------------|---------|---------|---------|---------|---------|----------------------------------------------------|----------------------------------------------------|----------------------------------------------------|----------------------|
|                         | DXB<br>mm | t<br>mm | Mass<br>kg/m | Weight<br>kN/m | Area<br>mm <sup>2</sup> | d<br>mm | i<br>mm | b<br>mm | l<br>mm | a<br>mm | I <sub>xx</sub><br>10 <sup>9</sup> mm <sup>4</sup> | I <sub>yy</sub><br>10 <sup>9</sup> mm <sup>4</sup> | Z <sub>xx</sub><br>10 <sup>3</sup> mm <sup>3</sup> | J<br>mm <sup>4</sup> |
| CLR 150/18              | 150x65    | 1.75    | 4.83         | 0.05           | 566.7                   | 54      | 4       | 10      | 23      | 23.9    | 1.98                                               | 0.354                                              | 26.40                                              | 578                  |

### LEGEND

FR = Compression flange fully restrained

WS = Serviceability load capacity for a deflection of span/150

# DESIGN CAPACITY CHARTS

| CLR 200/12 |       |      |      |      |      | CLR 200/15 |       |       |       |       |       |
|------------|-------|------|------|------|------|------------|-------|-------|-------|-------|-------|
| Span (m)   | Brace |      |      |      |      | Span (m)   | Brace |       |       |       |       |
|            | OB    | 1B   | 2B   | FR   | Ws   |            | OB    | 1B    | 2B    | FR    | Ws    |
| 3.0        | 6.48  | 9.19 | 9.19 | 9.19 | 9.08 | 3.0        | 8.61  | 12.41 | 12.41 | 12.41 | 11.97 |
| 3.5        | 3.80  | 6.61 | 6.75 | 6.75 | 5.82 | 3.5        | 4.97  | 8.91  | 9.12  | 9.12  | 7.66  |
| 4.0        | 2.30  | 4.88 | 5.17 | 5.17 | 3.95 | 4.0        | 3.01  | 6.58  | 6.98  | 6.98  | 5.19  |
| 4.5        | 1.48  | 3.70 | 4.03 | 4.09 | 2.81 | 4.5        | 1.92  | 4.98  | 5.43  | 5.52  | 3.68  |
| 5.0        | 1.00  | 2.85 | 3.18 | 3.31 | 2.07 | 5.0        | 1.27  | 3.83  | 4.28  | 4.47  | 2.71  |
| 5.5        | 0.70  | 2.22 | 2.55 | 2.74 | 1.57 | 5.5        | 0.88  | 2.98  | 3.44  | 3.69  | 2.05  |
| 6.0        | 0.50  | 1.74 | 2.08 | 2.30 | 1.22 | 6.0        | 0.62  | 2.32  | 2.79  | 3.11  | 1.59  |
| 6.5        | 0.36  | 1.36 | 1.70 | 1.96 | 0.97 | 6.5        | 0.46  | 1.81  | 2.29  | 2.65  | 1.26  |
| 7.0        | 0.27  | 1.07 | 1.41 | 1.69 | 0.78 | 7.0        | 0.35  | 1.40  | 1.89  | 2.28  | 1.01  |
| 7.5        | 0.21  | 0.83 | 1.17 | 1.47 | 0.64 | 7.5        | 0.27  | 1.09  | 1.57  | 1.99  | 0.83  |
| 8.0        | 0.16  | 0.65 | 0.97 | 1.30 | 0.53 | 8.0        | 0.21  | 0.85  | 1.30  | 1.75  | 0.68  |
| 8.5        | 0.13  | 0.52 | 0.81 | 1.15 | 0.45 | 8.5        | 0.17  | 0.68  | 1.08  | 1.55  | 0.57  |
| 9.0        | 0.11  | 0.42 | 0.67 | 1.03 | 0.38 | 9.0        | 0.13  | 0.55  | 0.89  | 1.38  | 0.48  |
| 9.5        | 0.09  | 0.34 | 0.56 | 0.92 | 0.32 | 9.5        | 0.11  | 0.45  | 0.73  | 1.24  | 0.41  |
| 10.0       | 0.07  | 0.28 | 0.46 | 0.83 | 0.28 | 10.0       | 0.09  | 0.37  | 0.60  | 1.12  | 0.35  |
| -          | -     | -    | -    | -    | -    | 10.5       | 0.08  | 0.30  | 0.50  | 1.02  | 0.30  |
| -          | -     | -    | -    | -    | -    | 11.0       | 0.07  | 0.25  | 0.42  | 0.93  | 0.27  |

| CLR 200/18 |       |       |       |       |       | CLR 250/13 |       |       |       |       |       |
|------------|-------|-------|-------|-------|-------|------------|-------|-------|-------|-------|-------|
| Span (m)   | Brace |       |       |       |       | Span (m)   | Brace |       |       |       |       |
|            | OB    | 1B    | 2B    | FR    | Ws    |            | OB    | 1B    | 2B    | FR    | Ws    |
| 3.0        | 10.68 | 15.67 | 15.67 | 15.67 | 14.87 | 3.0        | 11.83 | 14.89 | 14.89 | 14.89 | 18.07 |
| 3.5        | 6.16  | 11.22 | 11.52 | 11.52 | 9.48  | 3.5        | 7.47  | 10.94 | 10.94 | 10.94 | 11.56 |
| 4.0        | 3.65  | 8.26  | 8.82  | 8.82  | 6.41  | 4.0        | 4.65  | 8.20  | 8.38  | 8.38  | 7.85  |
| 4.5        | 2.30  | 6.23  | 6.84  | 6.97  | 4.55  | 4.5        | 2.99  | 6.27  | 6.62  | 6.62  | 5.58  |
| 5.0        | 1.53  | 4.78  | 5.39  | 5.65  | 3.33  | 5.0        | 2.01  | 4.90  | 5.32  | 5.37  | 4.11  |
| 5.5        | 1.06  | 3.70  | 4.31  | 4.67  | 2.51  | 5.5        | 1.40  | 3.88  | 4.30  | 4.43  | 3.12  |
| 6.0        | 0.76  | 2.88  | 3.49  | 3.92  | 1.93  | 6.0        | 1.01  | 3.10  | 3.52  | 3.73  | 2.43  |
| 6.5        | 0.56  | 2.25  | 2.86  | 3.34  | 1.52  | 6.5        | 0.75  | 2.50  | 2.92  | 3.18  | 1.92  |
| 7.0        | 0.42  | 1.74  | 2.35  | 2.88  | 1.22  | 7.0        | 0.56  | 2.02  | 2.44  | 2.74  | 1.55  |
| 7.5        | 0.33  | 1.34  | 1.94  | 2.51  | 0.99  | 7.5        | 0.43  | 1.63  | 2.06  | 2.39  | 1.27  |
| 8.0        | 0.26  | 1.05  | 1.61  | 2.21  | 0.82  | 8.0        | 0.33  | 1.31  | 1.74  | 2.10  | 1.05  |
| 8.5        | 0.21  | 0.83  | 1.33  | 1.96  | 0.68  | 8.5        | 0.26  | 1.05  | 1.48  | 1.86  | 0.88  |
| 9.0        | 0.17  | 0.66  | 1.10  | 1.75  | 0.58  | 9.0        | 0.21  | 0.85  | 1.26  | 1.66  | 0.75  |
| 9.5        | 0.14  | 0.54  | 0.90  | 1.57  | 0.49  | 9.5        | 0.17  | 0.69  | 1.07  | 1.49  | 0.64  |
| 10.0       | 0.11  | 0.44  | 0.75  | 1.42  | 0.42  | 10.0       | 0.14  | 0.57  | 0.91  | 1.34  | 0.55  |
| 10.5       | 0.10  | 0.37  | 0.62  | 1.28  | 0.36  | 10.5       | 0.12  | 0.47  | 0.77  | 1.22  | 0.48  |
| 11.0       | 0.08  | 0.31  | 0.51  | 1.17  | 0.32  | 11.0       | 0.10  | 0.40  | 0.65  | 1.11  | 0.42  |
| 11.5       | 0.07  | 0.26  | 0.43  | 1.07  | 0.28  | 11.5       | 0.08  | 0.34  | 0.55  | 1.02  | 0.37  |
| 12.0       | 0.06  | 0.22  | 0.37  | 0.98  | 0.25  | 12.0       | 0.07  | 0.29  | 0.47  | 0.94  | 0.33  |
| -          | -     | -     | -     | -     | -     | 12.5       | 0.06  | 0.25  | 0.40  | 0.86  | 0.29  |

## LEGEND

FR = Compression flange fully restrained

WS = Serviceability load capacity for a deflection of span/150



# DESIGN CAPACITY CHARTS

| CLR 250/15 |       |       |       |       |       | CLR 250/18 |       |       |       |       |       |
|------------|-------|-------|-------|-------|-------|------------|-------|-------|-------|-------|-------|
| Span (m)   | Brace |       |       |       |       | Span (m)   | Brace |       |       |       |       |
|            | OB    | 1B    | 2B    | FR    | Ws    |            | OB    | 1B    | 2B    | FR    | Ws    |
| 3.0        | 10.68 | 15.67 | 15.67 | 15.67 | 14.87 | 3.0        | 17.82 | 22.84 | 22.84 | 22.84 | 26.90 |
| 3.5        | 6.16  | 11.22 | 11.52 | 11.52 | 9.48  | 3.5        | 11.12 | 16.78 | 16.78 | 16.78 | 17.21 |
| 4.0        | 3.65  | 8.26  | 8.82  | 8.82  | 6.41  | 4.0        | 6.85  | 12.54 | 12.85 | 12.85 | 11.66 |
| 4.5        | 2.30  | 6.23  | 6.84  | 6.97  | 4.55  | 4.5        | 4.39  | 9.59  | 10.15 | 10.15 | 8.27  |
| 5.0        | 1.53  | 4.78  | 5.39  | 5.65  | 3.33  | 5.0        | 2.91  | 7.46  | 8.14  | 8.23  | 6.07  |
| 5.5        | 1.06  | 3.70  | 4.31  | 4.67  | 2.51  | 5.5        | 2.00  | 5.89  | 6.57  | 6.80  | 4.60  |
| 6.0        | 0.76  | 2.88  | 3.49  | 3.92  | 1.93  | 6.0        | 1.43  | 4.69  | 5.38  | 5.71  | 3.56  |
| 6.5        | 0.56  | 2.25  | 2.86  | 3.34  | 1.52  | 6.5        | 1.04  | 3.76  | 4.45  | 4.87  | 2.82  |
| 7.0        | 0.42  | 1.74  | 2.35  | 2.88  | 1.22  | 7.0        | 0.78  | 3.02  | 3.71  | 4.20  | 2.27  |
| 7.5        | 0.33  | 1.34  | 1.94  | 2.51  | 0.99  | 7.5        | 0.60  | 2.42  | 3.12  | 3.66  | 1.86  |
| 8.0        | 0.26  | 1.05  | 1.61  | 2.21  | 0.82  | 8.0        | 0.47  | 1.93  | 2.63  | 3.22  | 1.54  |
| 8.5        | 0.21  | 0.83  | 1.33  | 1.96  | 0.68  | 8.5        | 0.37  | 1.54  | 2.22  | 2.85  | 1.28  |
| 9.0        | 0.17  | 0.66  | 1.10  | 1.75  | 0.58  | 9.0        | 0.30  | 1.24  | 1.88  | 2.54  | 1.08  |
| 9.5        | 0.14  | 0.54  | 0.90  | 1.57  | 0.49  | 9.5        | 0.24  | 1.01  | 1.60  | 2.28  | 0.92  |
| 10.0       | 0.11  | 0.44  | 0.75  | 1.42  | 0.42  | 10.0       | 0.20  | 0.84  | 1.35  | 2.06  | 0.79  |
| 10.5       | 0.10  | 0.37  | 0.62  | 1.28  | 0.36  | 10.5       | 0.17  | 0.69  | 1.14  | 1.87  | 0.68  |
| 11.0       | 0.08  | 0.31  | 0.51  | 1.17  | 0.32  | 11.0       | 0.14  | 0.58  | 0.96  | 1.70  | 0.60  |
| 11.5       | 0.07  | 0.26  | 0.43  | 1.07  | 0.28  | 11.5       | 0.12  | 0.48  | 0.81  | 1.56  | 0.52  |
| 12.0       | 0.06  | 0.22  | 0.37  | 0.98  | 0.25  | 12.0       | 0.10  | 0.41  | 0.69  | 1.43  | 0.46  |
| 12.5       | -     | -     | -     | -     | -     | 12.5       | 0.09  | 0.35  | 0.59  | 1.32  | 0.41  |
| 13.0       |       |       |       |       |       | 13.0       | 0.08  | 0.30  | 0.51  | 1.22  | 0.36  |
|            |       |       |       |       |       | 13.5       | 0.07  | 0.26  | 0.44  | 1.13  | 0.32  |
|            |       |       |       |       |       | 14.0       | 0.06  | 0.23  | 0.38  | 1.05  | 0.29  |

| CLR300/15 |      |      |      |      |      | CLR 300/18 |      |      |      |      |      |
|-----------|------|------|------|------|------|------------|------|------|------|------|------|
| Span (m)  | 1B   | 2B   | 3B   | FR   | Ws   | Span (m)   | 1B   | 2B   | 3B   | FR   | Ws   |
| 5.0       | 7.78 | 7.78 | 7.78 | 7.78 | 9.71 | 5.0        | -    | -    | -    | -    | -    |
| 5.5       | 6.43 | 6.43 | 6.43 | 6.43 | 7.3  | 5.5        | -    | -    | -    | -    | -    |
| 6.0       | 5.27 | 5.4  | 5.4  | 5.4  | 5.62 | 6.0        | -    | -    | -    | -    | -    |
| 6.5       | 4.3  | 4.6  | 4.6  | 4.6  | 4.42 | 6.5        | 5.44 | 5.86 | 5.86 | 5.86 | 5.26 |
| 7.0       | 3.52 | 3.97 | 3.97 | 3.97 | 3.54 | 7.0        | 4.46 | 5.05 | 5.05 | 5.05 | 4.21 |
| 7.5       | 2.89 | 3.46 | 3.46 | 3.46 | 2.88 | 7.5        | 3.66 | 4.40 | 4.40 | 4.40 | 3.43 |
| 8.0       | 2.38 | 3.04 | 3.04 | 3.04 | 2.37 | 8.0        | 3.01 | 3.87 | 3.87 | 3.87 | 2.82 |
| 8.5       | 1.95 | 2.69 | 2.69 | 2.69 | 1.98 | 8.5        | 2.46 | 3.42 | 3.42 | 3.42 | 2.35 |
| 9.0       | 1.58 | 2.38 | 2.4  | 2.4  | 1.67 | 9.0        | 1.99 | 3.02 | 3.06 | 3.06 | 1.98 |
| 9.5       | 1.3  | 2.08 | 2.15 | 2.15 | 1.42 | 9.5        | 1.63 | 2.64 | 2.74 | 2.74 | 1.69 |
| 10.0      | 1.08 | 1.83 | 1.94 | 1.94 | 1.21 | 10.0       | 1.35 | 2.32 | 2.47 | 2.47 | 1.45 |
| 10.5      | 0.9  | 1.61 | 1.76 | 1.76 | 1.05 | 10.5       | 1.12 | 2.03 | 2.24 | 2.24 | 1.25 |
| 11.0      | 0.75 | 1.42 | 1.61 | 1.61 | 0.91 | 11.0       | 0.94 | 1.79 | 2.05 | 2.05 | 1.09 |
| 11.5      | 0.64 | 1.25 | 1.47 | 1.47 | 0.8  | 11.5       | 0.80 | 1.58 | 1.87 | 1.87 | 0.95 |
| 12.0      | 0.54 | 1.1  | 1.35 | 1.35 | 0.7  | 12.0       | 0.68 | 1.39 | 1.72 | 1.72 | 0.84 |
| 12.5      | 0.47 | 0.97 | 1.24 | 1.24 | 0.62 | 12.5       | 0.59 | 1.23 | 1.58 | 1.58 | 0.74 |
| 13.0      | 0.4  | 0.85 | 1.15 | 1.15 | 0.55 | 13.0       | 0.51 | 1.08 | 1.45 | 1.46 | 0.66 |
| 13.5      | 0.35 | 0.75 | 1.04 | 1.07 | 0.49 | 13.5       | 0.44 | 0.94 | 1.32 | 1.36 | 0.59 |
| 14.0      | 0.31 | 0.66 | 0.95 | 0.99 | 0.44 | 14.0       | 0.38 | 0.82 | 1.21 | 1.26 | 0.53 |
| 14.5      | 0.27 | 0.58 | 0.87 | 0.92 | 0.4  | 14.5       | 0.34 | 0.72 | 1.1  | 1.18 | 0.47 |
| 15.0      | 0.24 | 0.51 | 0.8  | 0.86 | 0.36 | 15.0       | 0.30 | 0.64 | 1.01 | 1.1  | 0.43 |
| 15.5      | 0.21 | 0.45 | 0.73 | 0.81 | 0.33 | 15.5       | 0.26 | 0.56 | 0.92 | 1.03 | 0.39 |
|           |      |      |      |      |      | 16.0       | 0.23 | 0.5  | 0.85 | 0.97 | 0.35 |
|           |      |      |      |      |      | 16.5       | 0.2  | 0.45 | 0.78 | 0.91 | 0.32 |

## LEGEND

FR = Compression flange fully restrained

WS = Serviceability load capacity for a deflection of span/150

## DESIGN CAPACITY CHARTS

| CLR350/18 |      |      |      |      |      | CLR 350/24 |      |      |      |      |       |
|-----------|------|------|------|------|------|------------|------|------|------|------|-------|
| Span (m)  | 1B   | 2B   | 3B   | FR   | Ws   | Span (m)   | 1B   | 2B   | 3B   | FR   | Ws    |
| 7.0       | 5.57 | 6.21 | 6.21 | 6.21 | 6.14 | 7.0        | 8.46 | 9.56 | 9.56 | 9.56 | 8.33  |
| 7.5       | 4.59 | 5.41 | 5.41 | 5.41 | 4.99 | 7.5        | 6.95 | 8.32 | 8.32 | 8.32 | 6.77b |
| 8.0       | 3.78 | 4.76 | 4.76 | 4.76 | 4.11 | 8.0        | 5.70 | 7.32 | 7.32 | 7.32 | 5.58  |
| 8.5       | 3.11 | 4.21 | 4.21 | 4.21 | 3.43 | 8.5        | 4.67 | 6.48 | 6.48 | 6.48 | 4.65  |
| 9.0       | 2.54 | 3.75 | 3.76 | 3.76 | 2.89 | 9.0        | 3.80 | 5.75 | 5.78 | 5.78 | 3.92  |
| 9.5       | 2.08 | 3.29 | 3.37 | 3.37 | 2.46 | 9.5        | 3.11 | 5.03 | 5.19 | 5.19 | 3.33  |
| 10.0      | 1.72 | 2.89 | 3.04 | 3.04 | 2.11 | 10.0       | 2.56 | 4.4  | 4.68 | 4.68 | 2.86  |
| 10.5      | 1.43 | 2.54 | 2.76 | 2.76 | 1.82 | 10.5       | 2.14 | 3.87 | 4.25 | 4.25 | 2.47  |
| 11.0      | 1.21 | 2.24 | 2.52 | 2.52 | 1.58 | 11.0       | 1.79 | 3.4  | 3.87 | 3.87 | 2.15  |
| 11.5      | 1.02 | 1.98 | 2.30 | 2.30 | 1.39 | 11.5       | 1.51 | 3.0  | 3.54 | 3.54 | 1.88  |
| 12.0      | 0.87 | 1.75 | 2.11 | 2.11 | 1.22 | 12.0       | 1.27 | 2.64 | 3.25 | 3.25 | 1.65  |
| 12.5      | 0.75 | 1.54 | 1.95 | 1.95 | 1.08 | 12.5       | 1.08 | 2.33 | 3.0  | 3.0  | 1.46  |
| 13.0      | 0.64 | 1.36 | 1.80 | 1.80 | 0.96 | 13.0       | 0.93 | 2.05 | 2.76 | 2.77 | 1.3   |
| 13.5      | 0.56 | 1.2  | 1.64 | 1.67 | 0.86 | 13.5       | 0.80 | 1.80 | 2.52 | 2.57 | 1.16  |
| 14.0      | 0.49 | 1.05 | 1.50 | 1.55 | 0.77 | 14.0       | 0.70 | 1.57 | 2.30 | 2.39 | 1.04  |
| 14.5      | 0.43 | 0.92 | 1.38 | 1.45 | 0.69 | 14.5       | 0.61 | 1.38 | 2.10 | 2.23 | 0.94  |
| 15.0      | 0.38 | 0.82 | 1.26 | 1.35 | 0.62 | 15.0       | 0.53 | 1.22 | 1.92 | 2.08 | 0.85  |
| 15.5      | 0.33 | 0.72 | 1.16 | 1.27 | 0.57 | 15.5       | 0.47 | 1.08 | 1.76 | 1.95 | 0.77  |
| 16.0      | 0.29 | 0.64 | 1.06 | 1.19 | 0.51 | 16.0       | 0.41 | 0.95 | 1.61 | 1.83 | 0.70  |
| 16.5      | 0.26 | 0.57 | 0.97 | 1.12 | 0.47 | 16.5       | 0.37 | 0.85 | 1.47 | 1.72 | 0.64  |
| 17.0      | 0.23 | 0.51 | 0.89 | 1.05 | 0.43 | 17.0       | 0.33 | 0.76 | 1.35 | 1.62 | 0.58  |
| 17.5      | 0.21 | 0.46 | 0.82 | 0.99 | 0.39 | 17.5       | 0.29 | 0.68 | 1.24 | 1.53 | 0.53  |
| 18.0      | 0.18 | 0.41 | 0.75 | 0.94 | 0.36 | 18.0       | 0.26 | 0.61 | 1.14 | 1.45 | 0.49  |

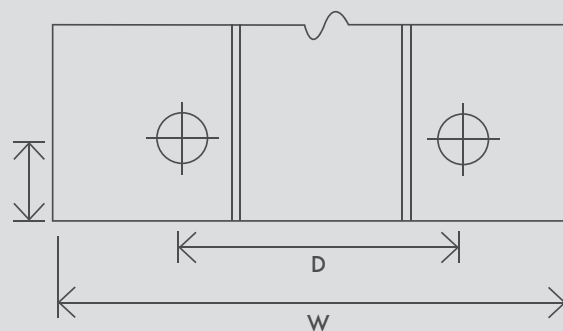
### LEGEND

FR = Compression flange fully restrained

WS = Serviceability load capacity for a deflection of span/150

## BOLT CENTRE AND EDGE DISTANCE TABLE

| HOLE CENTRES |     |
|--------------|-----|
| D            | W   |
| 150          | 80  |
| 200          | 120 |
| 250          | 160 |
| 300          | 200 |
| 350          | 240 |



## ADHERENCE TO BUILDING CODE STANDARDS

Freeman Roofing FR Purlins and Girts are designed per AS/NZS 4600 and manufactured from materials that comply with AS 1397. Therefore, they are expected to fulfill the performance criteria specified in the following Building Code Clauses:

The New Zealand Standard regulates the mechanical properties of the coil used to produce FR Purlins and Girts.

### B1 STRUCTURE:

Please contact Freeman Roofing Timaru to obtain information regarding design capacity and spans.

### B2 DURABILITY:

FR Purlins and Girts adhere to clauses B2.1, B2.2, B2.3.1, B2.3.2 of clause B2 in the NZBC (when employed in accordance with our durability statement).

### F2 HAZARDOUS BUILDING MATERIALS:

FR Purlins and Girts comply with clause F2 of the NZBC.

It is the designer's responsibility to ensure the adoption of the relevant version of any standards referenced in this document, depending on the desired compliance pathway. In cases where a new (either in draft form or published) version of a standard has yet to be included in a Verification Method, Steel & Tube recommends that the designer embrace the more demanding design requirements of any conflicting clauses.

## DURABILITY

Galvsteel™ material, when used for purlins, girts or framing will have a durability of 50 years when used and maintained as defined below.

### 1. Specifications

|                        |                                                                                  |
|------------------------|----------------------------------------------------------------------------------|
| Zinc coating weight;   | 275g/m <sup>2</sup> (Z275) or 450g/m <sup>2</sup> (Z450)                         |
| Complying with;        | AS 1397:2001                                                                     |
| Steel Grade;           | G250, G300, G450, G500 or 0550                                                   |
| Steel Thickness Range; | 1.15-2.25mm                                                                      |
| Bend diameter;         | G250, G300; 2 2T<br>G450, G500, G550; 2 4T<br>(where T = total coated thickness) |

### 2. Fixing, Handling and Maintenance according to the following publications:

- New Zealand Steel Limited, Specifiers and Builders Guide, and Installers Guide (refer [www.nzsteel.co.nz](http://www.nzsteel.co.nz) for most current version)
- NZ Metal Roof & Wall Cladding, Code of Practice, Version 2 - Apr. 2008.
- AS/NZS 2312:2002 (Incorporating Amendment No. 1) Guide to the protection of structural steel against atmospheric corrosion by the use of protective coatings.
- Instructions and literature published by individual purlin and steel framing manufacturers.

## MAINTENANCE

Maintenance is necessary when the galvanised coating ceases to provide sacrificial protection to the steel base, or where the appearance is no longer aesthetically acceptable.

Rust staining or the growth of rust spots usually indicates the breakdown of the galvanised coating. At the first sign of breakdown, the surface should be treated with an appropriate maintenance

coating system. All maintenance should be carried out in accordance with AS/NZS 2312:2002 (Incorporating Amendment No.1) [c] and New Zealand Steelwork Corrosion Coatings Guide (HERA Report R4-133) [d].

Regular inspection and maintenance at the first signs of a problem will extend the durability of the sections.

## STATEMENT IN REGARD TO SECTION 26 OF THE BUILDING ACT

Freeman Roofing (FR) Purlins and Girts products are not subject to any warnings or bans under Section 26 of the Building Act.





**[freemanroofing.co.nz](http://freemanroofing.co.nz)**

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