

# RTL-24

## STANDING SEAM ROOF

### SECTION PROPERTIES (Per Foot of Width)

#### IMPERIAL

| THICKNESS |           | Yield Strength (ksi) | Coated Steel Thickness (AZ55) (in) | Coated Mass (psf) | Section Modulus            |                            | Deflection Moment of Inertia |                            | Specified Web Crippling    |                                 | Clip Compression Capacity (kips/ft) |
|-----------|-----------|----------------------|------------------------------------|-------------------|----------------------------|----------------------------|------------------------------|----------------------------|----------------------------|---------------------------------|-------------------------------------|
| Gauge     | Base (in) |                      |                                    |                   | Midspan (in <sup>3</sup> ) | Support (in <sup>3</sup> ) | Midspan (in <sup>4</sup> )   | Support (in <sup>4</sup> ) | End 2.5" Bearing (kips/ft) | Interior 2.5" Bearing (kips/ft) |                                     |
| 24        | 0.0221    | 50                   | 0.0236                             | 1.133             | 0.1517                     | 0.0924                     | 0.3620                       | 0.1520                     | 0.322                      | 0.507                           | 0.596                               |
| 22        | 0.0275    | 50                   | 0.029                              | 1.406             | 0.1875                     | 0.1235                     | 0.4475                       | 0.1965                     | 0.493                      | 0.932                           |                                     |

#### NOTE:

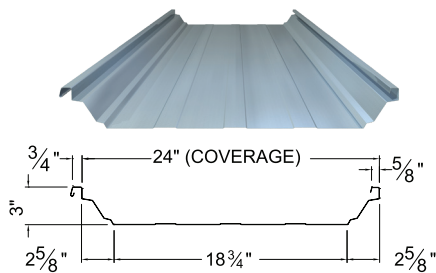
- Section properties are calculated in accordance with CSA Standard S136-12.
- Section modulus values are allowable/specified.
- Specified web crippling values are for bare panel only. End bearing assumes panel fastened to support; interior bearing panel not fastened to support. Clip compression capacity as tested in system assembly governs the interior bearing capacity.
- All values are for one foot of panel width.
- Minimum deliverable bare steel thickness should not be less than 0.95 of design base thickness.
- Material shall be ASTM A792, grade 50.

### MAXIMUM UNIFORMLY DISTRIBUTED SPECIFIED LOAD (psf)

| SPAN LENGTH (ft) |   | 1 - SPAN                  |        | 2- SPAN                   |                    | 3 - SPAN                  |                    |
|------------------|---|---------------------------|--------|---------------------------|--------------------|---------------------------|--------------------|
|                  |   | BASE STEEL THICKNESS (in) |        | BASE STEEL THICKNESS (in) |                    | BASE STEEL THICKNESS (in) |                    |
|                  |   | 0.0221                    | 0.0275 | 0.0221                    | 0.0275             | 0.0221                    | 0.0275             |
| 2.0              | S | 757                       | 938    | 238 <sup>(7)</sup>        | 238 <sup>(7)</sup> | 261 <sup>(7)</sup>        | 261 <sup>(7)</sup> |
|                  | D | 3955                      | 4889   | 9519                      | 11767              | 7463                      | 9226               |
| 2.5              | S | 484                       | 600    | 191 <sup>(7)</sup>        | 191 <sup>(7)</sup> | 208 <sup>(7)</sup>        | 208 <sup>(7)</sup> |
|                  | D | 2025                      | 2503   | 4873                      | 6025               | 3821                      | 4724               |
| 3.0              | S | 336                       | 417    | 159 <sup>(7)</sup>        | 159 <sup>(7)</sup> | 174 <sup>(7)</sup>        | 174 <sup>(7)</sup> |
|                  | D | 1172                      | 1449   | 2820                      | 3486               | 2211                      | 2733               |
| 3.5              | S | 247                       | 306    | 136 <sup>(7)</sup>        | 136 <sup>(7)</sup> | 149 <sup>(7)</sup>        | 149 <sup>(7)</sup> |
|                  | D | 738                       | 912    | 1776                      | 2195               | 1392                      | 1721               |
| 4.0              | S | 189                       | 234    | 109                       | 119 <sup>(7)</sup> | 125                       | 130 <sup>(7)</sup> |
|                  | D | 494                       | 611    | 1189                      | 1471               | 933                       | 1153               |
| 4.5              | S | 149                       | 185    | 87                        | 106 <sup>(7)</sup> | 100                       | 116 <sup>(7)</sup> |
|                  | D | 347                       | 429    | 835                       | 1033               | 655                       | 810                |
| 5.0              | S | 121                       | 150    | 71                        | 95                 | 82                        | 104 <sup>(7)</sup> |
|                  | D | 253                       | 313    | 609                       | 753                | 477                       | 590                |
| 6.0              | S | 84                        | 104    | 50                        | 66                 | 57                        | 77                 |
|                  | D | 146                       | 181    | 352                       | 435                | 276                       | 341                |

#### NOTE:

- The maximum uniformly distributed specified load obtained from the load table must be equal to or greater than the (Specified live load + 0.833 times the specified dead load). Where 0.833 = 1.25/1.5.
- Allowable/specified load based on smallest load due to bending, shear and combined bending and shear.
- Allowable/specified load based on deflection cannot exceed allowable/specified load based on bending.
- These loads are for panel strength. Frames, clips, fasteners and all supports must be designed to resist all loads imposed on panels.
- Values in row "S" are based on strength.
- Values in row "D" are based on deflection of 1/180th span.
- Governed by 4" floating clip capacity.



# RTL-24

STANDING SEAM ROOF

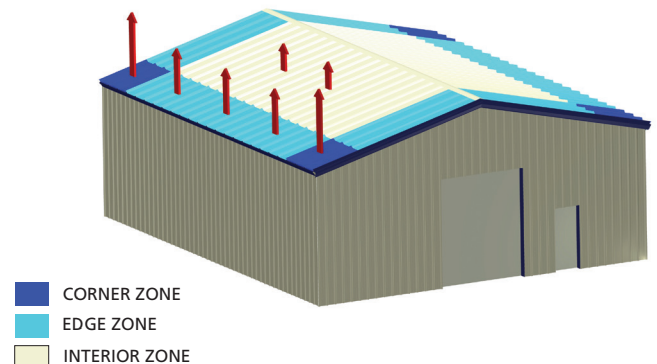
## MAXIMUM SPECIFIED UNIFORMLY DISTRIBUTED WIND UPLIFT LOAD (psf) IMPERIAL

| FIELD SEAM TYPE  | Support Spacing (ft) | Standard 4.5" wide clip<br>Base Steel Thickness (in.) |        | 12" wide clip<br>Base Steel Thickness (in.) |         |
|--|----------------------|---|--------|---|---------|
|  |                      | 0.0221  | 0.0275 | 0.0221                                      | 0.00275 |
| <b>RollLoc Seam</b><br>(hand seamed at eave, ridge, and each clip) | 2.0                  |   |        |   |         |
|  | 2.5                  | 36.7  | 49.8   |   |         |
|  | 3.0                  | 33.6  | 45.7   |   |         |
|  | 3.5                  | 30.0  | 41.6   |   |         |
|  | 4.0                  | 26.3  | 36.8   |   |         |
|  | 4.5                  | 23.3  | 32.7   |   |         |
|  | 5.0                  | 21.0  | 29.4   |   |         |
| <b>TripleLoc Seamed</b>  | 2.0                  |   |        | 110.8                                       |         |
|  | 2.5                  | 54.3  | 52.0   | 101.2                                       |         |
|  | 3.0                  | 50.8  | 48.4   | 89.1  |         |
|  | 3.5                  | 47.3  | 44.8   | 76.3  |         |
|  | 4.0                  | 43.7  | 41.2   | 66.8  |         |
|  | 4.5                  | 40.2  | 37.6   | 59.4  |         |
|  | 5.0                  | 36.6  | 33.9   | 53.4  |         |
| <b>QuadLoc Seamed</b>  | 2.0                  |   |        | 158.8                                       |         |
|  | 2.5                  | 78.8  |        | 144.5                                       |         |
|  | 3.0                  | 70.0  |        | 121.9                                       |         |
|  | 3.5                  | 60.0  |        | 104.5                                       |         |
|  | 4.0                  | 52.5  |        | 91.5  |         |
|  | 4.5                  | 46.6  |        | 81.3  |         |
|  | 5.0                  | 42.0  |        | 73.2  |         |

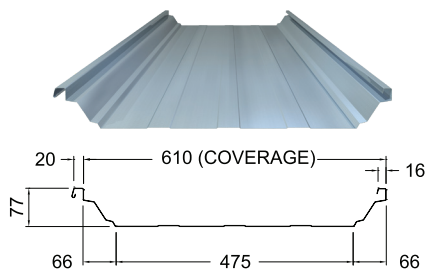
### NOTE:

1. Shaded areas have not been tested.
2. The above tabulated loads are generated from certified ASTM E-1592 testing.
3. Intermediate design loads are interpolated from ultimate test loads for 2'-0" and 5'-0" support spacing.
4. Design loads contain a safety factor of 1.896 calculated per CSA Standard S136-12.
5. Tested loads are based on minimum purlin thickness of 0.054 in., grade 50; two screws per clip.
6. Calculation of corner, edge and interior zone wind uplift loads (used to determine panel seaming requirements as listed above) for roof panels is not the responsibility of ExSteel or Steelway. Appropriate external and internal wind pressures/suctions must be used as per applicable building code.
7. RTL-24 panels, RollLoc only, no hand seaming, have an uplift capacity of approximately 10 psf.
8. Ensure that both the RTL-24 installation and seaming manuals have been completely reviewed before installing roof system.

### WIND UPLIFT



**STEELWAY**  
BUILDING SYSTEMS



# RTL-24

## STANDING SEAM ROOF

### SECTION PROPERTIES (Per Metre of Width)

### METRIC

| THICKNESS |           | Yield Strength (MPa) | Coated Steel Thickness (AZM165)(mm) | Coated Mass (kg/m <sup>2</sup> ) | Section Modulus                             |   | Deflection Moment of Inertia                |   | Specified Web Crippling |                              | Clip Compression Capacity (kN/m) |
|-----------|-----------|----------------------|-------------------------------------|----------------------------------|---|---|---|---|-------------------------|------------------------------|----------------------------------|
| Gauge     | Base (mm) |                      |                                     |                                  | Midspan (x10 <sup>3</sup> mm <sup>3</sup> ) | Support (x10 <sup>3</sup> mm <sup>3</sup> ) | Midspan (x10 <sup>6</sup> mm <sup>4</sup> ) | Support (x10 <sup>6</sup> mm <sup>4</sup> ) | End 64mm Bearing (kN/m) | Interior 64mm Bearing (kN/m) |                                  |
| 24        | 0.5613    | 345                  | 0.5994                              | 5.53                             | 8.15  | 4.97  | 0.494                                       | 0.208                                       | 4.70                    | 7.40                         | 8.70                             |
| 22        | 0.6985    | 345                  | 0.7366                              | 6.86                             | 10.08                                       | 6.64  | 0.611                                       | 0.268                                       | 7.19                    | 13.60                        |                                  |

#### NOTE:

1. Section properties are calculated in accordance with with CSA Standard S136-12.
2. Section modulus values are allowable/specified.
3. Specified web crippling values are for bare panel only. End bearing assumes panel fastened to support; interior bearing panel not fastened to support. Clip compression capacity as tested in system assembly governs the interior bearing capacity.
4. All values are for one metre of panel width.
5. Minimum deliverable bare steel thickness should not be less than 0.95 of design base thickness.
6. Material shall be ASTM A792M, grade 345.

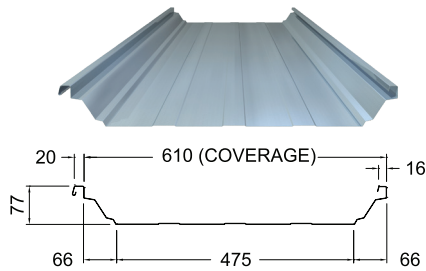
### MAXIMUM UNIFORMLY DISTRIBUTED SPECIFIED LOAD (kPa)

| SPAN LENGTH (m) |   | 1 - SPAN                  |        | 2- SPAN                   |                     | 3 - SPAN                  |                     |
|-----------------|---|---------------------------|--------|---------------------------|---------------------|---------------------------|---------------------|
|                 |   | BASE STEEL THICKNESS (mm) |        | BASE STEEL THICKNESS (mm) |                     | BASE STEEL THICKNESS (mm) |                     |
|                 |   | 0.5613                    | 0.6985 | 0.5113                    | 0.6985              | 0.5613                    | 0.6985              |
| 0.6             | S | 36.2                      | 44.9   | 11.4 <sup>(7)</sup>       | 11.4 <sup>(7)</sup> | 12.5 <sup>(7)</sup>       | 12.5 <sup>(7)</sup> |
|                 | D | 189.4                     | 234.1  | 455.8                     | 563.4               | 357.3                     | 441.7               |
| 0.8             | S | 23.2                      | 28.7   | 9.1 <sup>(7)</sup>        | 9.1 <sup>(7)</sup>  | 10.0 <sup>(7)</sup>       | 10.0 <sup>(7)</sup> |
|                 | D | 97.0                      | 119.8  | 233.3                     | 288.5               | 182.9                     | 226.2               |
| 0.9             | S | 16.1                      | 20.0   | 7.6 <sup>(7)</sup>        | 7.6 <sup>(7)</sup>  | 8.3 <sup>(7)</sup>        | 8.3 <sup>(7)</sup>  |
|                 | D | 56.1                      | 69.4   | 135.0                     | 166.9               | 105.9                     | 130.9               |
| 1.1             | S | 11.8                      | 14.7   | 6.5 <sup>(7)</sup>        | 6.5 <sup>(7)</sup>  | 7.1 <sup>(7)</sup>        | 7.1 <sup>(7)</sup>  |
|                 | D | 35.3                      | 43.7   | 85.0                      | 105.1               | 66.6                      | 82.4                |
| 1.2             | S | 9.0                       | 11.2   | 5.2                       | 5.7 <sup>(7)</sup>  | 6.0                       | 6.2                 |
|                 | D | 23.7                      | 29.3   | 56.9                      | 70.4                | 44.7                      | 55.2                |
| 1.4             | S | 7.1                       | 8.9    | 4.2                       | 5.1 <sup>(7)</sup>  | 4.8                       | 5.6 <sup>(7)</sup>  |
|                 | D | 16.6                      | 20.5   | 40.0                      | 49.5                | 31.4                      | 38.8                |
| 1.5             | S | 5.8                       | 7.2    | 3.4                       | 4.5                 | 3.9                       | 5.0 <sup>(7)</sup>  |
|                 | D | 12.1                      | 15.0   | 29.2                      | 36.1                | 22.8                      | 28.2                |
| 1.8             | S | 4.0                       | 5.0    | 2.4                       | 3.2                 | 2.7                       | 3.7                 |
|                 | D | 7.0                       | 8.7    | 16.9                      | 20.8                | 13.2                      | 16.3                |

#### NOTE:

1. The maximum uniformly distributed specified load obtained from the load table must be equal to or greater than the (Specified live load + 0.833 times the specified dead load). Where 0.833 = 1.25/1.5.
2. Allowable/specified load based on smallest load due to bending, shear and combined bending and shear.
3. Allowable/specified load based on deflection cannot exceed allowable/specified load based on bending.
4. These loads are for panel strength. Frames, clips, fasteners and all supports must be designed to resist all loads imposed on panels.
5. Values in row "S" are based on strength.
6. Values in row "D" are based on deflection of 1/180th span.
7. Governed by 102mm floating clip capacity.

**STEELWAY**  
BUILDING SYSTEMS



# RTL-24

STANDING SEAM ROOF

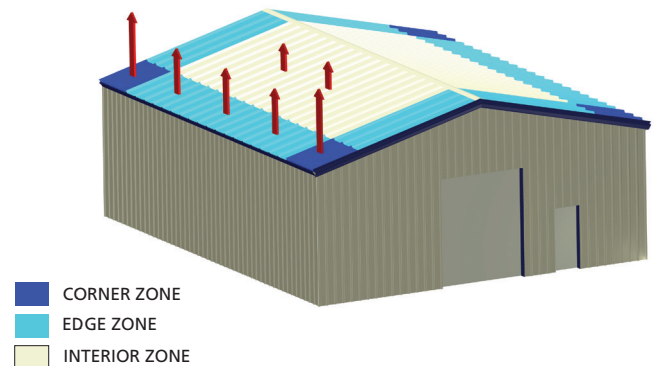
## MAXIMUM SPECIFIED UNIFORMLY DISTRIBUTED WIND UPLIFT LOAD (kPa) METRIC

| FIELD SEAM TYPE  | Support Spacing (m) | Standard 114mm wide clip<br>Base Steel Thickness (mm) |        | 305mm wide clip<br>Base Steel Thickness (mm) |        |
|--|---------------------|---|--------|--|--------|
|  |                     | 0.5613  | 0.6985 | 0.5613                                       | 0.6985 |
| <b>RollLoc Seam</b><br>(hand seamed at eave, ridge, and each clip) | 0.6                 |   |        |  |        |
|  | 0.8                 | 1.8   | 2.4    |  |        |
|  | 0.9                 | 1.6   | 2.2    |  |        |
|  | 1.1                 | 1.4   | 2.0    |  |        |
|  | 1.2                 | 1.3   | 1.8    |  |        |
|  | 1.4                 | 1.1   | 1.6    |  |        |
|  | 1.5                 | 1.0   | 1.4    |  |        |
| <b>TripleLoc Seamed</b>  | 0.6                 |   |        | 5.3  |        |
|  | 0.8                 | 2.6   | 2.5    | 4.8  |        |
|  | 0.9                 | 2.4   | 2.3    | 4.3  |        |
|  | 1.1                 | 2.3   | 2.1    | 3.7  |        |
|  | 1.2                 | 2.1   | 2.0    | 3.2  |        |
|  | 1.4                 | 1.9   | 1.8    | 2.8  |        |
|  | 1.5                 | 1.8   | 1.6    | 2.6  |        |
| <b>QuadLoc Seamed</b>  | 0.6                 |   |        | 7.6  |        |
|  | 0.8                 | 3.8   |        | 6.9  |        |
|  | 0.9                 | 3.4   |        | 5.8  |        |
|  | 1.1                 | 2.9   |        | 5.0  |        |
|  | 1.2                 | 2.5   |        | 4.4  |        |
|  | 1.4                 | 2.2   |        | 3.9  |        |
|  | 1.5                 | 2.0   |        | 3.5  |        |

### NOTE:

1. Shaded areas have not been tested.
2. The above tabulated loads are generated from certified ASTM E-1592 testing.
3. Intermediate design loads are interpolated from ultimate test loads for 0.6m and 1.5m support spacing.
4. Design loads contain a safety factor of 1.896 calculated per CSA Standard S136-12.
5. Tested loads are based on minimum purlin thickness of 1.37 mm, grade 345; two screws per clip.
6. Calculation of corner, edge and interior zone wind uplift loads (used to determine panel seaming requirements as listed above) for roof panels is not the responsibility of ExSteel or Steelway. Appropriate external and internal wind pressures/suctions must be used as per applicable building code.
7. RTL-24 panels, RollLoc only, no hand seaming, have an uplift capacity of approximately 0.47 kPa.
8. Ensure that both the RTL-24 installation and seaming manuals have been completely reviewed before installing roof system.

### WIND UPLIFT



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