

U-Channel

U-Channel is used in many common bridging and bracing applications. U-channel is available in 54 mil (16ga.) steel with 1/2" legs. Standard widths are 3/4", 1-1/2", 2" and 2-1/2".

Designation

Industry standard nomenclature is used to identify MBA's products. The Steel Framing Industry Association has established standard designation codes for U-Channel. In each case, the identification starts with the measurement of the width of the member, followed by a letter (U = Channel Sections) followed by the flange dimension. A hyphen is used to separate all of this from the thickness of the metal.

Member Depth:

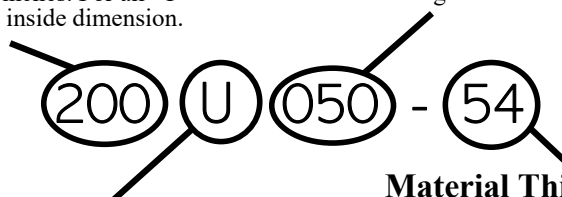
(Example: 2" = 200 x 1/100 inches)

All member depths are taken in 1/100 inches. For all "T" sections member depth is the inside to inside dimension.

Flange Width:

(Example: 1/2" = 0.50" = 050 x 1/100 inches)

All flange widths are taken in 1/100 inches.



Style:

(Example: Channel Section = U)

The alpha character utilized by the designation system is:

U = Channel Sections

Material Thickness:

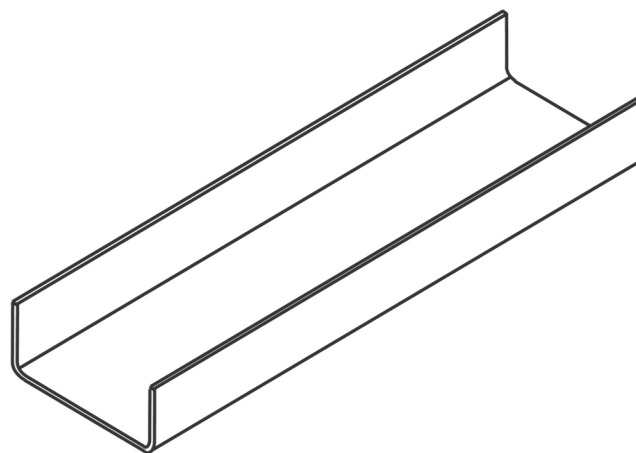
(Example: 0.054 in. = 54 mils; 1 mil = 1/1000 in.)

Material thickness is the minimum base metal thickness in mils.

Minimum base metal thickness represents 95% of the design thickness.

Steel Thickness

| Mils | Gauge | Thickness (in) | |
|------|-------|----------------|----------------------|
| | | Design | Minimum ¹ |
| 54 | 16 | 0.0566 | 0.0538 |



¹ Minimum Thickness represents 95% of the design thickness and is the minimum acceptable thickness delivered to the job site based on AISI S100-16/S2-20.

General Notes

1. Calculated properties are based on AISI S100-16/S2-20, "North American Specification for Design of Cold-Formed Steel Structural Members."
2. Structural framing members have a protective coating conforming to ASTM C 955.
3. Reference ASTM specification A 1003/A 1003 M table 1 for the universe of allowable coatings for light gauge steel framing.
4. All delivered material must be kept dry, preferably by being stored inside a building under a roof. If it is necessary to store material outside, it must be stacked off the ground, properly supported on a level platform, and fully protected from the weather. Reference ASTM C 754 section 8 and ASTM C 1007 section 4.

LEED Green Building Credits

MR Credit 2: Construction Waste Management – MBA steel framing is 100% recyclable.

MR Credit 4: Recycled Content – MBA steel framing is formed from no less than 25.5% post-consumer and 6.8% pre-consumer recycled content.

MR Credit 5: Regional Materials – MBA has manufacturing facilities in multiple states.

Channel Properties

U-Channel Section Properties

| Section | Design Thickness (in) | Gross Properties | | | | | Effective Properties ³ (33ksi) | | | |
|-----------|-----------------------|-------------------------|-----------------------------------|---------------------|-----------------------------------|---------------------|--|-----------------------------------|-----------|---------------------|
| | | Area (in ²) | I _x (in ⁴) | R _x (in) | I _y (in ⁴) | R _y (in) | I _x ² (in ⁴) | S _x (in ³) | Ma (in-k) | V _a (lb) |
| 075U50-54 | 0.0566 | 0.087 | 0.007 | 0.288 | 0.002 | 0.155 | 0.007 | 0.019 | 0.45 | 315 |
| 150U50-54 | 0.0566 | 0.129 | 0.039 | 0.547 | 0.003 | 0.144 | 0.039 | 0.052 | 1.22 | 840 |
| 200U50-54 | 0.0566 | 0.157 | 0.079 | 0.709 | 0.003 | 0.136 | 0.079 | 0.079 | 1.87 | 1190 |
| 250U50-54 | 0.0566 | 0.186 | 0.139 | 0.866 | 0.003 | 0.128 | 0.139 | 0.111 | 2.64 | 1540 |

¹ Minimum base metal thickness is 95% of design thickness.

² Moment of inertia given is for deflection calculations.

³ Effective properties are given as the minimum value for positive or negative bending.

U-Channel Allowable Ceiling Spans L/360

| Section | Spans | 4 psf | | | | | 6 psf | | | | | 13 psf | | | | | 15 psf | | | | |
|-----------|----------|---------------------------|--------|--------|-------|--------|---------------------------|--------|--------|--------|-------|---------------------------|-------|--------|--------|--------|---------------------------|--------|--------|--------|--------|
| | | Channel Spacing (in) o.c. | | | | | Channel Spacing (in) o.c. | | | | | Channel Spacing (in) o.c. | | | | | Channel Spacing (in) o.c. | | | | |
| | | 24 | 36 | 48 | 60 | 72 | 24 | 36 | 48 | 60 | 72 | 24 | 36 | 48 | 60 | 72 | 24 | 36 | 48 | 60 | 72 |
| 075U50-54 | Single | 3' 5" | 3' 0" | 2' 9" | 2' 6" | 2' 4" | 3' 0" | 2' 7" | 2' 4" | 2' 2" | 2' 1" | 2' 4" | 2' 0" | 1' 10" | 1' 8" | 1' 7" | 2' 2" | 1' 11" | 1' 9" | 1' 7" | 1' 6" |
| | Multiple | 4' 2" | 3' 8" | 3' 4" | 3' 1" | 2' 11" | 3' 8" | 3' 2" | 2' 11" | 2' 8" | 2' 7" | 2' 10" | 2' 6" | 2' 3" | 2' 1" | 1' 11" | 2' 8" | 2' 4" | 2' 2" | 2' 0" | 1' 9" |
| 150U50-54 | Single | 5' 6" | 4' 10" | 4' 5" | 4' 1" | 3' 10" | 4' 10" | 4' 3" | 3' 10" | 3' 7" | 3' 5" | 3' 9" | 3' 4" | 3' 0" | 2' 9" | 2' 7" | 3' 7" | 3' 2" | 2' 10" | 2' 7" | 2' 5" |
| | Multiple | 7' 1" | 6' 2" | 5' 8" | 5' 3" | 4' 11" | 6' 2" | 5' 5" | 4' 11" | 4' 7" | 4' 4" | 4' 10" | 4' 2" | 3' 9" | 3' 4" | 3' 0" | 4' 7" | 4' 0" | 3' 6" | 3' 1" | 2' 9" |
| 200U50-54 | Single | 5' 10" | 5' 1" | 4' 8" | 4' 4" | 4' 1" | 5' 1" | 4' 6" | 4' 1" | 3' 10" | 3' 7" | 4' 0" | 3' 6" | 3' 2" | 3' 0" | 2' 10" | 3' 10" | 3' 4" | 3' 1" | 2' 10" | 2' 8" |
| | Multiple | 7' 5" | 6' 6" | 5' 11" | 5' 6" | 5' 2" | 6' 6" | 5' 8" | 5' 2" | 4' 10" | 4' 7" | 5' 1" | 4' 5" | 4' 0" | 3' 9" | 3' 6" | 4' 10" | 4' 3" | 3' 10" | 3' 7" | 3' 2" |
| 250U50-54 | Single | 6' 1" | 5' 4" | 4' 10" | 4' 6" | 4' 3" | 5' 4" | 4' 8" | 4' 3" | 4' 0" | 3' 9" | 4' 2" | 3' 8" | 3' 4" | 3' 1" | 2' 11" | 4' 0" | 3' 6" | 3' 2" | 3' 0" | 2' 10" |
| | Multiple | 7' 9" | 6' 9" | 6' 2" | 5' 9" | 5' 5" | 6' 9" | 5' 11" | 5' 5" | 5' 0" | 4' 9" | 5' 3" | 4' 7" | 4' 3" | 3' 11" | 3' 9" | 5' 0" | 4' 5" | 4' 0" | 3' 9" | 3' 7" |

U-Channel Allowable Ceiling Spans L/240

| Section | Spans | 4 psf | | | | | 6 psf | | | | | 13 psf | | | | | 15 psf | | | | |
|-----------|----------|---------------------------|--------|--------|--------|--------|---------------------------|--------|--------|--------|--------|---------------------------|-------|-------|--------|--------|---------------------------|-------|--------|--------|--------|
| | | Channel Spacing (in) o.c. | | | | | Channel Spacing (in) o.c. | | | | | Channel Spacing (in) o.c. | | | | | Channel Spacing (in) o.c. | | | | |
| | | 24 | 36 | 48 | 60 | 72 | 24 | 36 | 48 | 60 | 72 | 24 | 36 | 48 | 60 | 72 | 24 | 36 | 48 | 60 | 72 |
| 075U50-54 | Single | 3' 11" | 3' 5" | 3' 1" | 2' 11" | 2' 9" | 3' 5" | 3' 0" | 2' 9" | 2' 6" | 2' 4" | 2' 8" | 2' 4" | 2' 1" | 1' 11" | 1' 9" | 2' 6" | 2' 2" | 2' 0" | 1' 10" | 1' 8" |
| | Multiple | 4' 10" | 4' 2" | 3' 10" | 3' 7" | 3' 4" | 4' 2" | 3' 8" | 3' 4" | 3' 1" | 2' 10" | 3' 3" | 2' 9" | 2' 4" | 2' 1" | 1' 11" | 3' 1" | 2' 7" | 2' 2" | 2' 0" | 1' 9" |
| 150U50-54 | Single | 5' 6" | 4' 10" | 4' 5" | 4' 1" | 3' 10" | 4' 10" | 4' 3" | 3' 10" | 3' 7" | 3' 5" | 3' 9" | 3' 4" | 3' 0" | 2' 9" | 2' 7" | 3' 7" | 3' 2" | 2' 10" | 2' 7" | 2' 5" |
| | Multiple | 7' 1" | 6' 2" | 5' 8" | 5' 3" | 4' 11" | 6' 2" | 5' 5" | 4' 11" | 4' 7" | 4' 4" | 4' 10" | 4' 2" | 3' 9" | 3' 4" | 3' 0" | 4' 7" | 4' 0" | 3' 6" | 3' 1" | 2' 9" |
| 200U50-54 | Single | 5' 10" | 5' 1" | 4' 8" | 4' 4" | 4' 1" | 5' 1" | 4' 6" | 4' 1" | 3' 10" | 3' 7" | 4' 0" | 3' 6" | 3' 2" | 3' 0" | 2' 10" | 3' 10" | 3' 4" | 3' 1" | 2' 10" | 2' 8" |
| | Multiple | 7' 5" | 6' 6" | 5' 11" | 5' 6" | 5' 2" | 6' 6" | 5' 8" | 5' 2" | 4' 10" | 4' 7" | 5' 1" | 4' 5" | 4' 0" | 3' 9" | 3' 6" | 4' 10" | 4' 3" | 3' 10" | 3' 7" | 3' 2" |
| 250U50-54 | Single | 6' 1" | 5' 4" | 4' 10" | 4' 6" | 4' 3" | 5' 4" | 4' 8" | 4' 3" | 4' 0" | 3' 9" | 4' 2" | 3' 8" | 3' 4" | 3' 1" | 2' 11" | 4' 0" | 3' 6" | 3' 2" | 3' 0" | 2' 10" |
| | Multiple | 7' 9" | 6' 9" | 6' 2" | 5' 9" | 5' 5" | 6' 9" | 5' 11" | 5' 5" | 5' 0" | 4' 9" | 5' 3" | 4' 7" | 4' 3" | 3' 11" | 3' 9" | 5' 0" | 4' 5" | 4' 0" | 3' 9" | 3' 7" |

U-Channel Allowable Ceiling Spans L/120

| Section | Spans | 4 psf | | | | | 6 psf | | | | | 13 psf | | | | | 15 psf | | | | |
|-----------|----------|---------------------------|--------|--------|--------|--------|---------------------------|--------|--------|--------|--------|---------------------------|-------|-------|--------|--------|---------------------------|-------|--------|--------|--------|
| | | Channel Spacing (in) o.c. | | | | | Channel Spacing (in) o.c. | | | | | Channel Spacing (in) o.c. | | | | | Channel Spacing (in) o.c. | | | | |
| | | 24 | 36 | 48 | 60 | 72 | 24 | 36 | 48 | 60 | 72 | 24 | 36 | 48 | 60 | 72 | 24 | 36 | 48 | 60 | 72 |
| 075U50-54 | Single | 4' 10" | 4' 1" | 3' 7" | 3' 3" | 3' 0" | 4' 1" | 3' 5" | 3' 0" | 2' 9" | 2' 6" | 2' 11" | 2' 5" | 2' 2" | 1' 11" | 1' 9" | 2' 9" | 2' 4" | 2' 0" | 1' 10" | 1' 8" |
| | Multiple | 5' 5" | 4' 6" | 4' 2" | 3' 10" | 3' 5" | 4' 6" | 3' 11" | 3' 5" | 3' 2" | 2' 11" | 3' 5" | 2' 9" | 2' 4" | 2' 1" | 1' 11" | 3' 1" | 2' 7" | 2' 2" | 2' 0" | 1' 9" |
| 150U50-54 | Single | 5' 6" | 4' 10" | 4' 5" | 4' 1" | 3' 10" | 4' 10" | 4' 3" | 3' 10" | 3' 7" | 3' 5" | 3' 9" | 3' 4" | 3' 0" | 2' 9" | 2' 7" | 3' 7" | 3' 2" | 2' 10" | 2' 7" | 2' 5" |
| | Multiple | 7' 1" | 6' 2" | 5' 8" | 5' 3" | 4' 11" | 6' 2" | 5' 5" | 4' 11" | 4' 7" | 4' 4" | 4' 10" | 4' 2" | 3' 9" | 3' 4" | 3' 0" | 4' 7" | 4' 0" | 3' 6" | 3' 1" | 2' 9" |
| 200U50-54 | Single | 5' 10" | 5' 1" | 4' 8" | 4' 4" | 4' 1" | 5' 1" | 4' 6" | 4' 1" | 3' 10" | 3' 7" | 4' 0" | 3' 6" | 3' 2" | 3' 0" | 2' 10" | 3' 10" | 3' 4" | 3' 1" | 2' 10" | 2' 8" |
| | Multiple | 7' 5" | 6' 6" | 5' 11" | 5' 6" | 5' 2" | 6' 6" | 5' 8" | 5' 2" | 4' 10" | 4' 7" | 5' 1" | 4' 5" | 4' 0" | 3' 9" | 3' 6" | 4' 10" | 4' 3" | 3' 10" | 3' 7" | 3' 2" |
| 250U50-54 | Single | 6' 1" | 5' 4" | 4' 10" | 4' 6" | 4' 3" | 5' 4" | 4' 8" | 4' 3" | 4' 0" | 3' 9" | 4' 2" | 3' 8" | 3' 4" | 3' 1" | 2' 11" | 4' 0" | 3' 6" | 3' 2" | 3' 0" | 2' 10" |
| | Multiple | 7' 9" | 6' 9" | 6' 2" | 5' 9" | 5' 5" | 6' 9" | 5' 11" | 5' 5" | 5' 0" | 4' 9" | 5' 3" | 4' 7" | 4' 3" | 3' 11" | 3' 9" | 5' 0" | 4' 5" | 4' 0" | 3' 9" | 3' 7" |