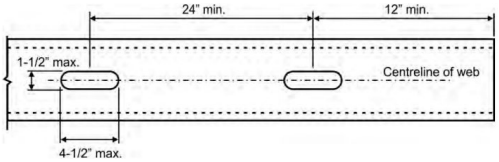
Carrying Channel

DCM Carrying Channel or U-Channel is the most common bridging method used to provide resistance to stud rotation and minor axis bending under wind and axial loads. Carrying Channel is passed through stud knockouts and secured with DCM Bridging Clips and screws as per ASTM C 754 installation requirements.

In addition to sheathing requirements, bridging must be spaced at 5'-0" o.c. or less, in order to align members and to provide the necessary structural integrity during construction and the completed structure for wind load applications. For combined wind and axial load-bearing applications, bridging must be installed at 4'-0" o.c. or less.

Stud Knockouts and Carrying Channel Spacing



When provided, factory punchouts shall be located along the centreline of the webs of the members and shall have a minimum centre-to centre spacing of 24". Punchouts for members greater than 2.5" deep are a maximum of 1.5" wide by 4.5" in length. Any configuration or combination of holes that fit within the punchout width and length limitations stated above shall be permitted; other punchout configurations and locations not in compliance with the stated limitations must be approved by a design professional. Perforations are assumed to be located at mid-depth and spaced at a minimum of 24" o.c. The distance from the centreline of the last perforation to the end of wall stud or joist is assumed to be 12" minimum.

Carrying channels are used in drop ceiling assemblies by suspending them from the overhead structure using hanger wire. Drywall furring channel is commonly clipped with metal furring channel clips or wiretied perpendicular to the underside of the U-Channel at appropriate intervals for screw-attaching drywall.
-Assemblies are installed per the project specification or ASTM C 754 requirements.

Drop Ceiling Assembly

The maximum knock-out width shall be half the member depth or 2-1/2", whichever is less. Therefore, for 1-5/8" and 2-1/2" studs, a 3/4" wide knockout is used to accommodate a 3/4" wide carrying channel, when bridging is required.

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Carrying Channel Section Properties

Section Designation	Base Design Thickness	Weight	Area	rx	Iy	ry	Effective		
							Ixd	Sxe	Mrx
	(in.)	(lb/ft)	(in^2)	(in.)	(in^4)	(in.)	(in^4)	(in^3)	(k-in)
75U50-54	0.0566	0.296	0.0871	0.289	0.00211	0.156	0.00726	0.0194	1.02
150U50-43	0.0451	0.357	0.105	0.555	0.00226	0.147	0.0324	0.0431	1.49
150U50-54	0.0566	0.441	0.13	0.549	0.00272	0.145	0.039	0.052	2.73
150U75-54	0.0566	0.537	0.158	0.583	0.00865	0.234	0.0537	0.0537	3.17

NOTE: Cold work of forming is applied when applicable.

Carrying Channel Allowable Ceiling Spans L/240

Section	Yield Strength	4 psf dead load Channel Spacing (in.) oc.					
Section	FY (ksi)	Spans	24	36	48	60	72
075U050-54	50	Single	3' 11"	3' 5"	3' 1"	2' 11	2' 9"
075U050-54	50	Multiple	4' 10"	4' 2"	3' 10"	3' 7	3' 4"
150U050-54	50	Single	5' 6"	4' 10"	4' 5"	4' 1"	3' 10"
150U050-54	50	Multiple	7' 1"	6' 2"	5' 8"	5' 3"	4' 11"

Carrying Channel Allowable Ceiling Spans L/240

Section	Yield Strength	6 psf dead load Channel Spacing (in.) oc.					
Section	FY (ksi)	Spans	24	36	48	60	72
075U050-54	50	Single	3' 5"	3' 0"	2' 9"	2' 6"	2' 4"
075U050-54	50	Multiple	4' 2"	3' 8"	3' 4"	3' 1"	2' 10"
150U050-54	50	Single	4' 10"	4' 3"	3' 10"	3' 7"	3' 5"
150U050-54	50	Multiple	6' 2"	5' 5"	4' 11"	4' 7"	4' 4"

Carrying Channel Allowable Ceiling Spans L/240

Section	Yield Strength	13 psf dead load Channel Spacing (in.) oc.					
Section	FY (ksi)	Spans	24	36	48	60	72
075U050-54	50	Single	2' 8"	2' 4"	2' 1"	1' 11"	1' 10"
075U050-54	50	Multiple	3' 3"	2' 9"	2' 4"	2' 1"	1' 11"
150U050-54	50	Single	3' 9"	3' 4"	3' 0"	2' 10"	2' 8"
150U050-54	50	Multiple	4' 10"	4' 2"	3' 9"	3' 5"	3' 1"

Carrying Channel Allowable Ceiling Spans L/240

Section	Yield Strength	15 psf dead load Channel Spacing (in.) oc.					
	FY (ksi)	Spans	24	36	48	60	72
075U050-54	50	Single	2' 6"	2' 2"	2' 0"	1' 10"	1' 9"
075U050-54	50	Multiple	3' 1"	2' 7"	2' 2"	2' 0"	1' 10"
150U050-54	50	Single	3' 7"	3' 2"	2' 11"	2' 8"	2' 6"
150U050-54	50	Multiple	4' 1"	4' 0"	3' 7"	3' 2"	2' 10"

Carrying Channel Allowable Ceiling Spans L/360

Section	Yield Strength	4 psf dead load Channel Spacing (in.) oc.					
	FY (ksi)	Spans	24	36	48	60	72
075U050-54	50	Single	3' 5"	3' 0"	2' 9"	2' 6"	2' 4"
075U050-54	50	Multiple	4' 2"	3' 8"	3' 4"	3' 1"	2' 11"
150U050-54	50	Single	5' 6"	4' 10"	4' 5"	4' 1"	3' 10"
150U050-54	50	Multiple	7' 1"	6' 2"	5' 8"	5' 3"	4' 11"

Carrying Channel Allowable Ceiling Spans L/360

Section	Yield Strength	6 psf dead load Channel Spacing (in.) oc.					
	FY (ksi)	Spans	24	36	48	60	72
075U050-54	50	Single	3' 0"	2' 7"	2' 4"	2' 2"	2' 1"
075U050-54	50	Multiple	3' 8"	3' 2"	2' 11"	2' 8"	2' 7"
150U050-54	50	Single	4' 10"	4' 3"	3' 10"	3' 7"	3' 5"
150U050-54	50	Multiple	6' 2"	5' 5"	4' 11"	4' 7"	4' 4"

Carrying Channel Allowable Ceiling Spans L/360

Section	Yield Strength	13 psf dead load Channel Spacing (in.) oc.					
	FY (ksi)	Spans	24	36	48	60	72
075U050-54	50	Single	2' 4"	2' 0"	1' 10"	1' 8"	1' 7"
075U050-54	50	Multiple	2' 10"	2' 6"	2' 3"	2' 1"	1' 11"
150U050-54	50	Single	3' 9"	3' 4"	3' 0"	2' 10"	2' 8"
150U050-54	50	Multiple	4' 10"	4' 2"	3' 9"	3' 5"	3' 1"

Carrying Channel Allowable Ceiling Spans L/360

Section	Yield Strength	15 psf dead load Channel Spacing (in.) oc.					
	FY (ksi)	Spans	24	36	48	60	72
075U050-54	50	Single	2' 2"	1' 11"	1' 9"	1' 7"	1' 6"
075U050-54	50	Multiple	2' 8"	2' 4"	2' 2"	2' 0"	1' 9"
150U050-54	50	Single	3' 7"	3' 2"	2' 11"	2' 8"	2' 6"
150U050-54	50	Multiple	4' 7"	4' 0"	3' 7"	3' 2"	2' 10"

Table Notes:

1. Allowable ceiling spans are based on effective properties,
2. Multiple Span indicates two or more equal spans with channel continuous over centre support.
3. Bearing Length = 0.75
4. Table vaules are based on the compression flange laterally unsupported.

Manufactured in accordance with CAN/CSA S-136-16 (North American specification for the design of cold-formed steel structural members), ASTM A653/A653M (Standard for steel sheet, zinc-coated (galvanized) or zinc-iron alloy-coated by the hot-dip process), ASTM C645 (Standard specification for non-structural steel framing members), and Standard CSSBI 61-18 (Manufacturer Certification Requirements for Cold Formed Steel Framing Members - Certificate of Registration reference number Q107858).

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