RMW Architecture & Interiors

C505

Framing with Steel Studs

RMWT3 DecoraG

Gloria Rasmussen AIA

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RMW architecture & interiors

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listen
build
speak
learn

Course Description

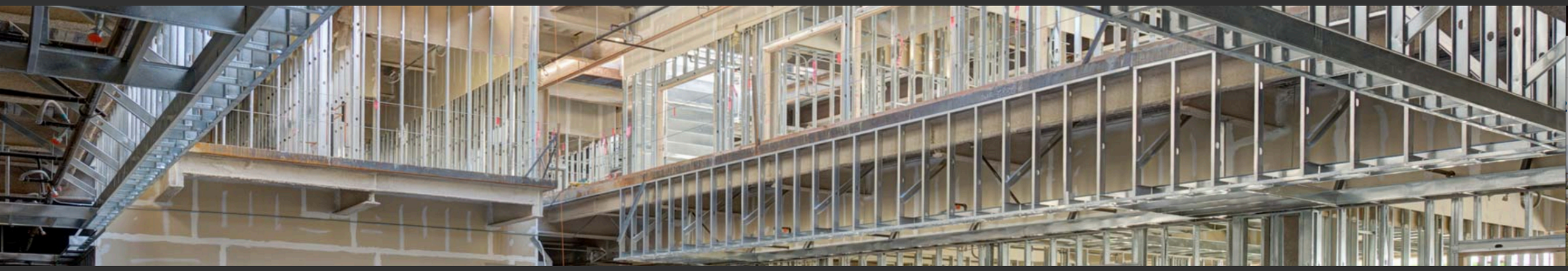
The contents of the course are as follows:

- Overview of framing components fabricated from steel sheet, including fabrication process.
- Structural and non-structural components
- Interior Faming with Steel: How to select spacing and size of studs, deflection, partition types. Ceiling suspension systems types; furring; bracing.
- Seismic requirements.
- Fire-rated assemblies.

Learning Objectives

At the end of the this course, participants will be able to:

1. Have a general idea of the process and materials used in the fabrication of cold-formed steel framing components, their general performance, uses, and other characteristics of the products.
2. Become familiar with the use of height limit tables. Understand deflection, loads, and other structural issues affecting steel framing. Understand fire rating assemblies and their documentation.
3. Recognize structural cold-formed framing and non-load cold-formed framing.
4. Explore the different types of framing, its uses, and limitations.



FRAMING WITH STEEL STUDS

T3 I AIA Registered Courses I Non-Structural Metal Framing

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T3 I AIA Registered Courses I Non-Structural Metal Framing

FRAMING WITH STUDS

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“Cold formed” framing is fabricated by “folding” steel sheet of different thicknesses and forming components that work together as assemblies.

FRAMING WITH STUDS

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Steel sheet thickness is currently measured in “mils”. One mil is one thousand of an inch. This is an exact measure, easy to use.

Other forms to measure sheet thickness included “gauge” (not exact), and inches (fractions are difficult to use).

One mil is equal to one thousand of an inch.

FRAMING WITH STUDS

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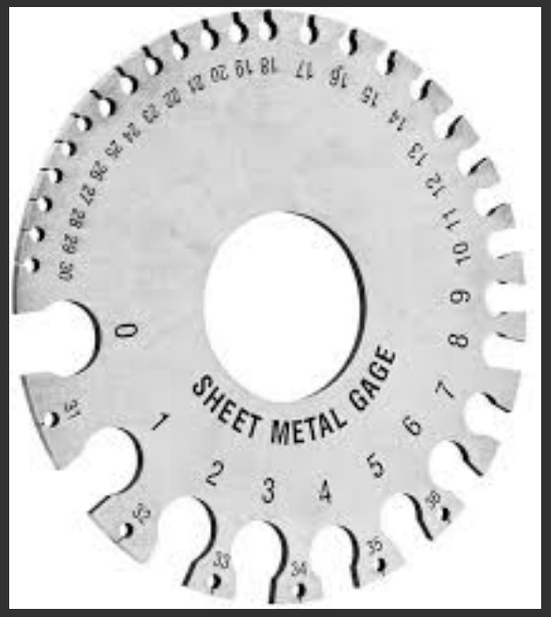
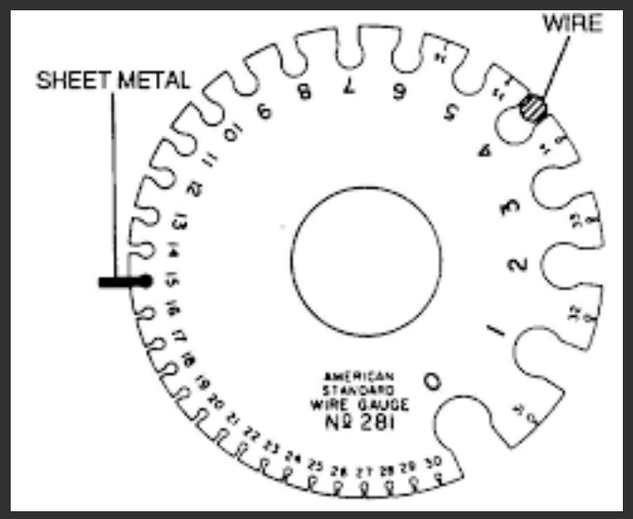
Do not document thickness of steel by **gauge**

Documenting by gauge is not exact, because the measure “gauge” is not the same among manufacturers (20 gauge steel might be steel with different thicknesses between two manufacturers).

- DOCUMENT INSTEAD BY “**MILS**”, which is the standard easier to remember.





LIGHT GAUGE FRAMING

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Thicknesses and Coatings

Steel Framing Thickness Table					
Designation Thickness (mils)	Minimum Thickness (in)	Design Thickness (in)	Design Inside Corner Radii (in)	Galvanized Thickness	Reference Only Gauge No
18	0.0179	0.0188	0.0843	G40	25
27	0.0269	0.0283	0.0796	G40	22
30	0.0296	0.0312	0.0781	G40	20 - Drywall
33	0.0329	0.0346	0.0764	G60	20 - Structural
43	0.0428	0.0451	0.0712	G60	18
54	0.0538	0.0566	0.0849	G60	16
68	0.0677	0.0713	0.1069	G90	14
97	0.0966	0.1017	0.1525	G90	12
118	0.1180	0.1242	0.1863	G90	10

THE TWO STUD FRAMING GROUPS

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1 STRUCTURAL FRAMING

Cold Formed Metal Framing, for exterior and interior applications:

- Exterior and interior load bearing wall framing.
- Floor joists.
- Roof rafters.
- Ceiling joists.
- Soffit framing.

Cold-formed metal framing can be assembled by components in the field or can be pre-assembled panels.

THE TWO STUD FRAMING GROUPS

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1 STRUCTURAL FRAMING

STRUCTURAL framing is fabricated from steel of different thicknesses.

A structural engineer designs the structural framing.

- Our consultant
- Subcontractor’s engineer (delegated design)

THE TWO STUD FRAMING GROUPS

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2 Non-Structural Metal Framing

- Framing for interior partitions.
- Framing to support suspended ceilings and soffits.
- Furring in interior surfaces - sheathing, concrete, and masonry.

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Partition Framing

- Framing for interior partitions.
- Framing to support suspended gypsum ceilings.
- Furring in interior surfaces of concrete and masonry.

Drywall Stud Definition: Member in a steel framed wall system which is limited to:

- A lateral (transverse) load of not more than 10 psf,
- A superimposed vertical load, exclusive of sheathing materials, of not more than 100 lbf/ft, or
- A superimposed vertical load of not more than 200 lbs.

MEET THE NON - STRUCTURAL FRAMING GROUP

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Drywall Stud Definition: Member in a steel framed wall system which is limited to:

- A lateral (transverse) load of not more than 10 psf,
- A superimposed vertical load, exclusive of sheathing materials, of not more than 100 lbf/ft, or
- A superimposed vertical load of not more than 200 lbs.
- Drywall studs are manufactured with **30 mil** thick steel (common designation is 20 gauge which is not exact, so do not use it for

27	0.0269	0.0283	0.0796	G40	22
30	0.0296	0.0312	0.0781	G40	20 - Drywall
33	0.0329	0.0346	0.0764	G60	20 - S tural
43	0.0428	0.0451	0.0712	G60	

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Embossed studs

Some manufacturers, including our basis of design manufacturer (Clark-Dietrich) produce embossed studs.

- Because the flange is embossed, the studs are more resistant and less studs are needed.

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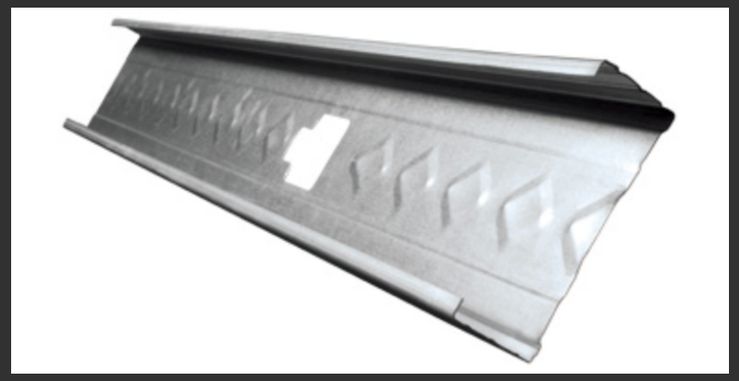
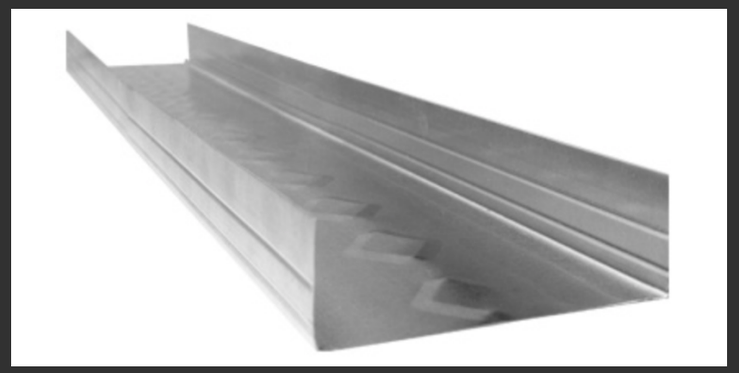
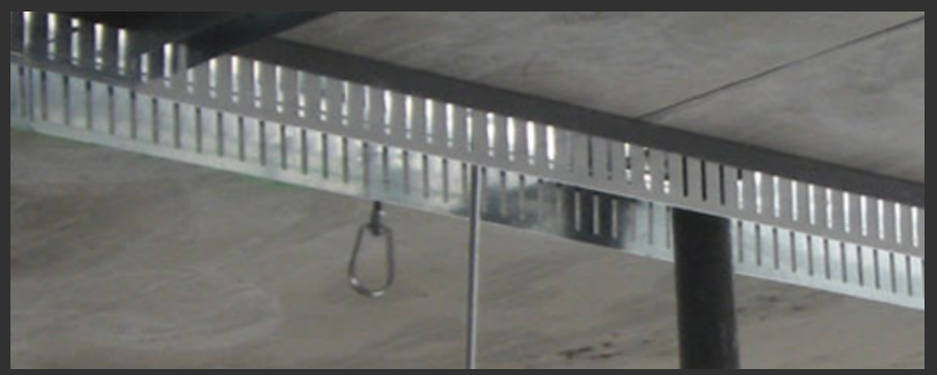
Partition

Framing

- Studs - conventional and embossed.
- Floor tracks.
- Head tracks, regular and rated to be used as fire joints.
- Bridging if needed to increase stiffness.







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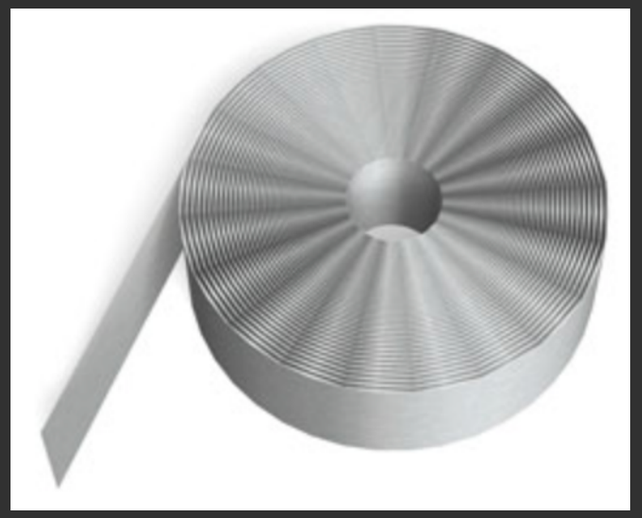
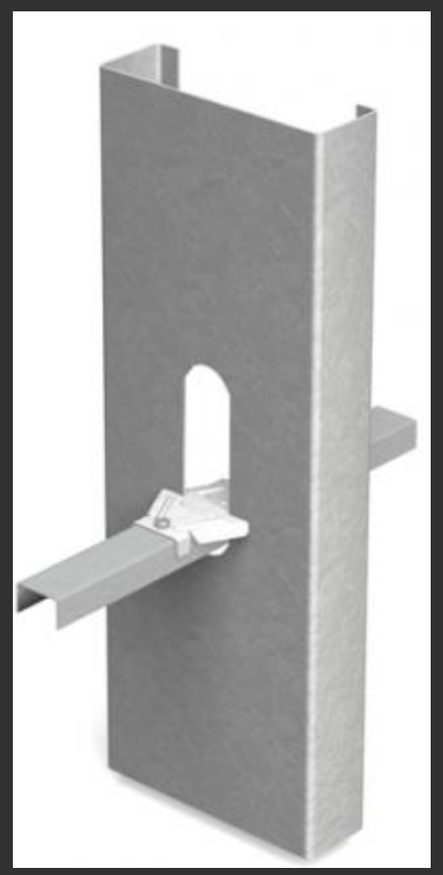
Blocking

To support wall-hung items

- Blocking to support cabinets or other wall mounted items can be manufactured with flat straps or proprietary blocking





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Ceiling Suspension Systems Definition: Assemblies designed to carry the ceiling dead loads, including framing members, the ceiling finishes, including the weight of equipment such as air diffuser, speakers, etc. They do not support the weight of mechanical and electrical equipment.

- The CBC requires that the light fixtures are suspended independently of the ceiling.
- The CBC requires bracing the ceiling suspension system for seismic.
- If installing acoustical insulation over the ceilings, make sure the ceiling will not sag.

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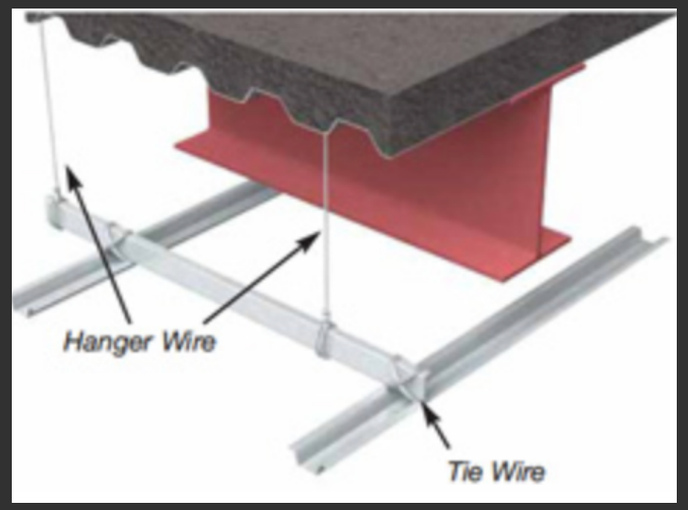
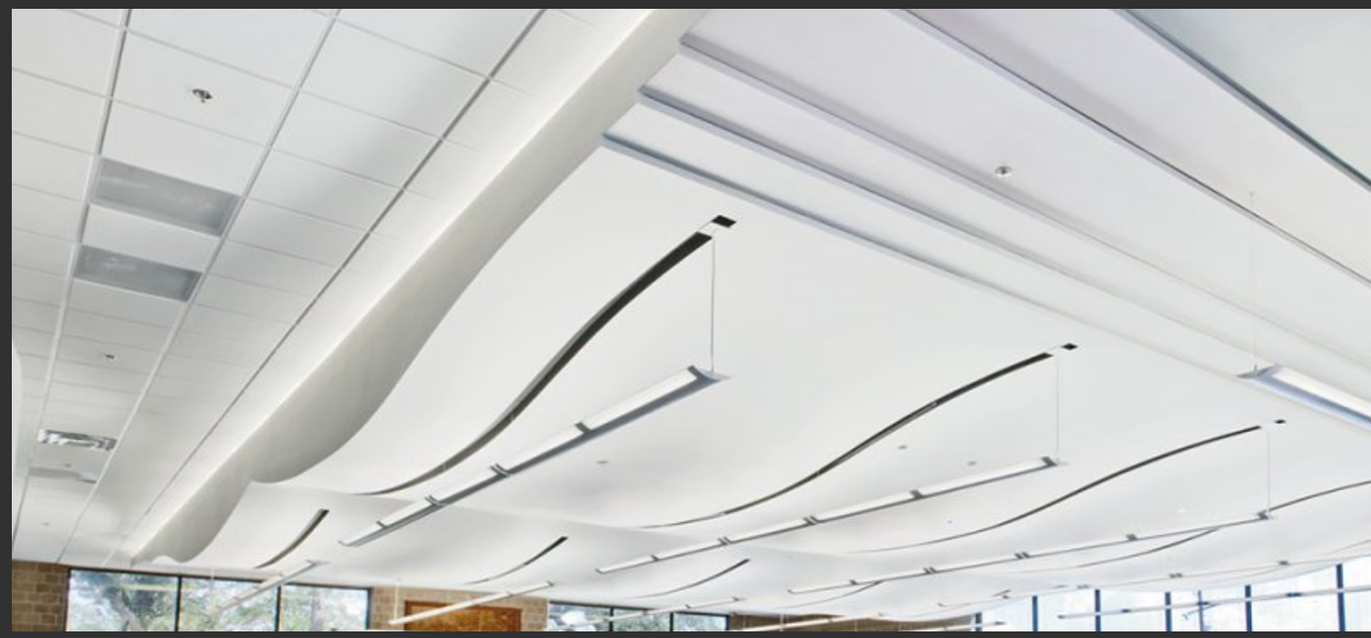
Ceiling

Suspension systems

- Stick-build hung systems wire-tied to the structure above or supported by intermediate carrying channels.



- Manufactured grid suspension systems. These products can be more expensive than traditional systems, but they are faster and easier to install and with unusual designs (waves, complicated soffits, and such) they may be the best choice for cost and results.



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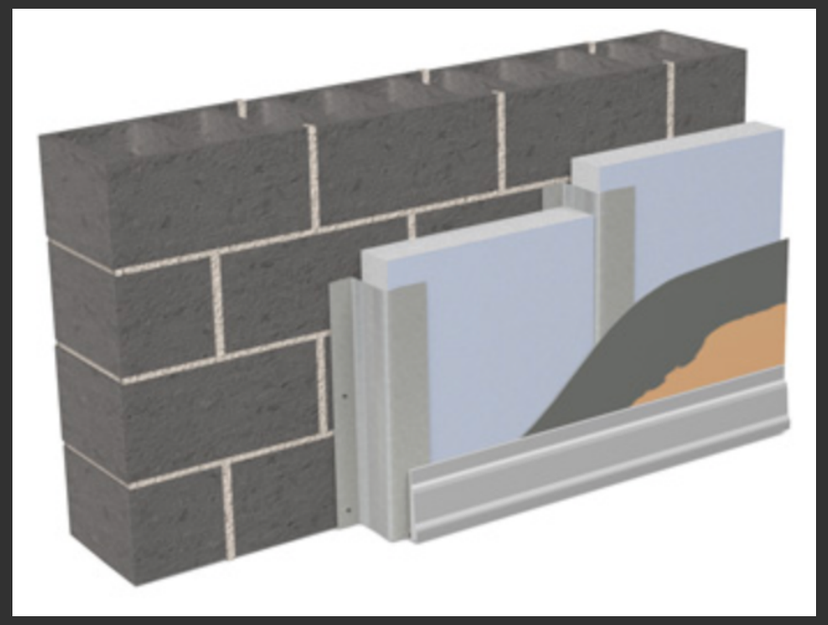
Furring

Channels & “Z” shapes

- Hat-shaped rigid channels are attached to substrate for furring; they can telegraph on finish surfaces. Hat channels are used for acoustical control.
- Z-Shaped furring support gypsum board and rigid insulation (they are not used without insulation or with batt insulation).



INTERIOR PARTITIONS - DEFLECTION

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Deflection occurs

- At the head of the partition caused by the movement of the decks above or below. This deflection is controlled by the head.
- At the stud itself caused by its weight, This deflection is controlled by the size and spacing of the studs and the sheathing OR the internal bracing of the partition.

INTERIOR PARTITIONS - DEFLECTION

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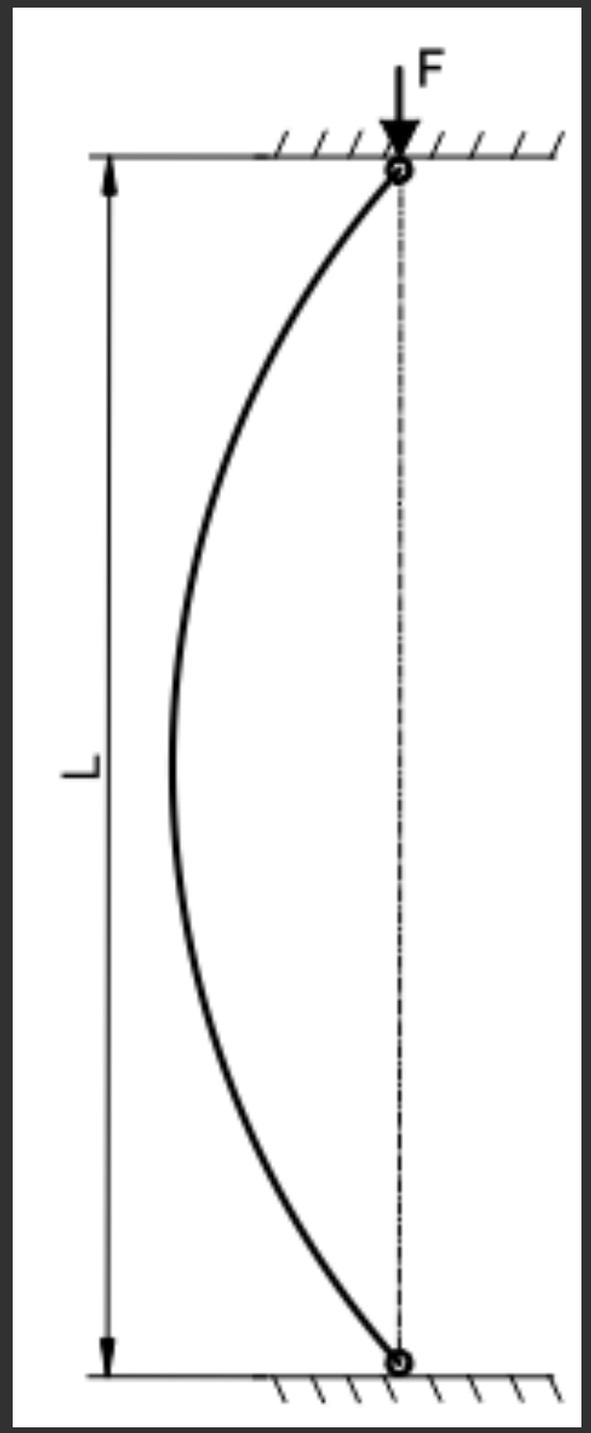
Deflection limits

- Deflection measures the amount of displacement from the vertical alignment.
  - The amount of displacement allowed for interior partitions by the CBC is L/240 where L is the height of the stud from base to support above.
  - In cases where the surface of the partition needs to be flatter to accommodate the scheduled finishes, the maximum deflection allowed is L/360.

- THE SMALLER THE DEFLECTION THE FLATTER THE SURFACE OF THE PARTITION



HOW TO SELECT stud size and spacing

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RMW INTERIOR DETAIL LIBRARY includes partition types classified by height, construction, rating, and performance.

If you cannot find the partition type you need, FIND out the stud size and the spacing you need by using the LIMITING HEIGHT TABLES for INTERIOR PARTITIONS.

- These tables can be proprietary or issued by an association.
- The thickness of the steel for interior partitions is typically 30 MILS.

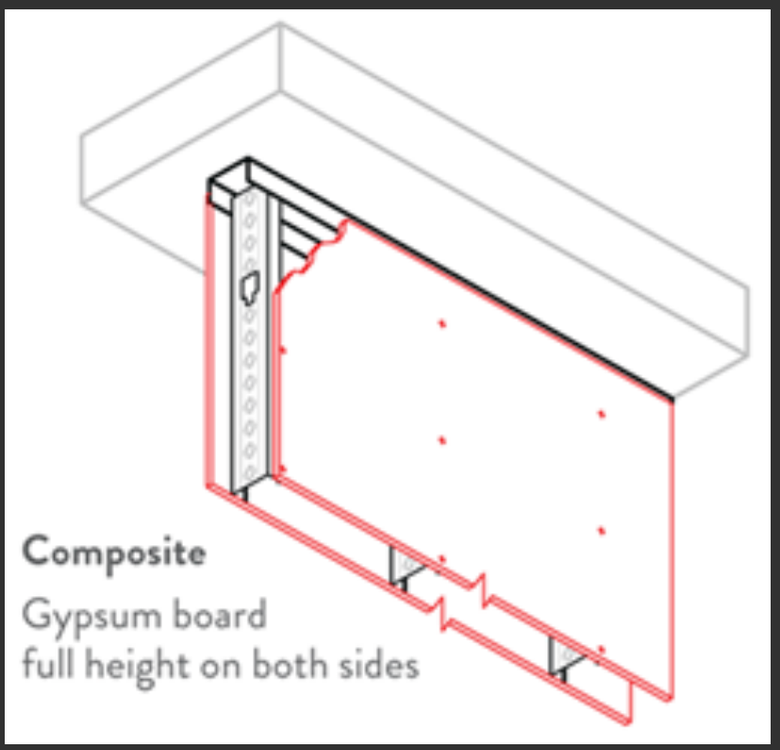
ProSTUD® COMPOSITE LIMITING HEIGHTS — 5/8" Type X Gypsum Board

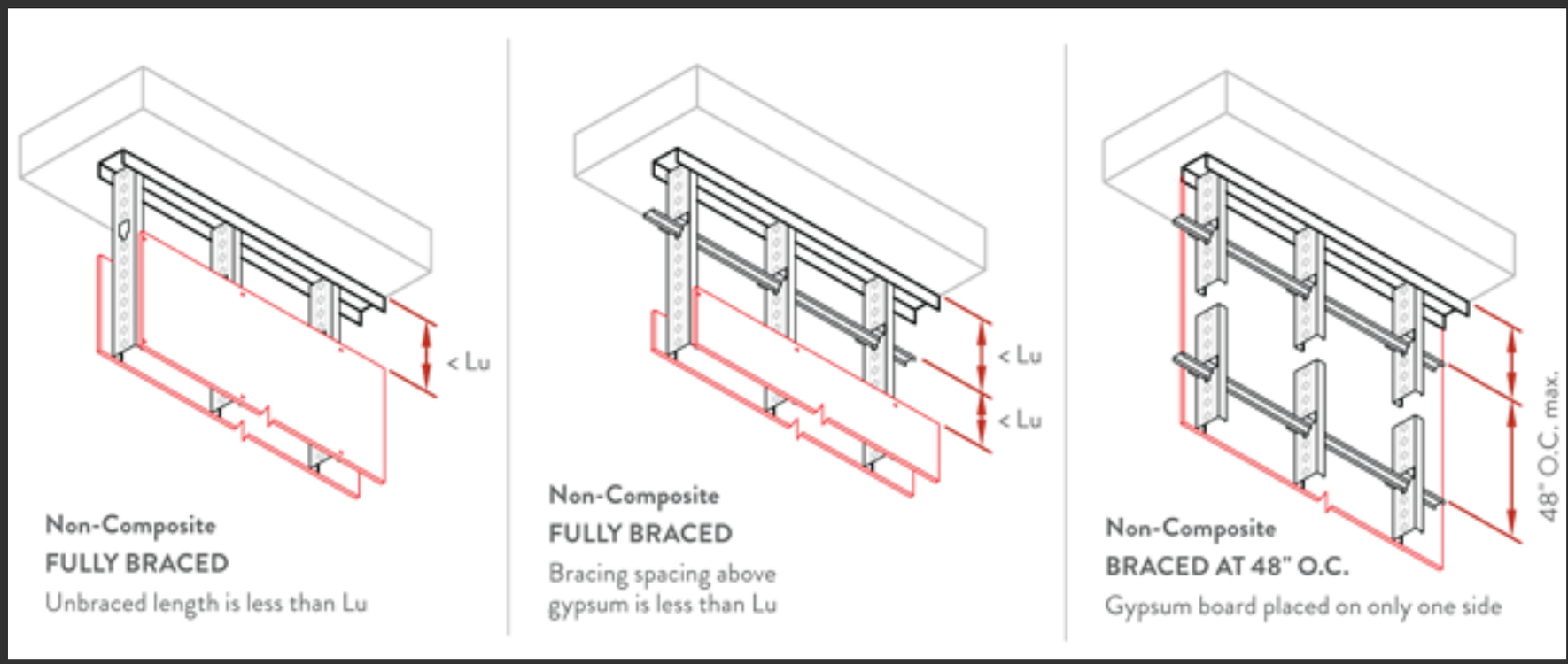
Width (in)	Stud member	Design thickness (in)	Yield strength (ksi)	Spacing (inches)	Lateral Load (psf)								
					5psf			7.5psf			10psf		
					L/120	L/240	L/360	L/120	L/240	L/360	L/120	L/240	L/360
1-5/8	ProSTUD 25 162PDS125-15	0.0158	50	12	14' 1"	11' 7"	10' 1"	12' 3"	10' 1"	8' 7"	11' 2"	9' 1"	—
				16	12' 9"	10' 6"	9' 0"	11' 2"	9' 1"	—	10' 2"	8' 1"	—
				24	11' 2"	9' 1"	—	9' 9"	—	—	8' 5"	—	—
	ProSTUD 20 162PDS125-19	0.0200	65	12	14' 10"	12' 11"	11' 2"	12' 11"	11' 3"	9' 9"	11' 9"	10' 3"	8' 8"
				16	13' 5"	11' 8"	10' 1"	11' 9"	10' 3"	8' 8"	10' 8"	9' 2"	—
				24	11' 9"	10' 3"	8' 8"	10' 3"	8' 8"	—	9' 2"	—	—
	ProSTUD 30 162PDS125-30	0.0312	33	12	16' 3"	12' 11"	11' 3"	14' 3"	11' 3"	9' 10"	12' 11"	10' 3"	8' 8"
				16	14' 9"	11' 9"	10' 3"	12' 11"	10' 3"	8' 8"	11' 9"	9' 2"	—
				24	12' 11"	10' 3"	8' 8"	11' 3"	8' 8"	—	10' 3"	—	—
	ProSTUD 33 162PDS125-33	0.0346	33	12	17' 0"	13' 6"	11' 10"	14' 10"	11' 10"	10' 4"	13' 6"	10' 9"	9' 3"
				16	15' 6"	12' 3"	10' 9"	13' 6"	10' 9"	9' 3"	12' 3"	9' 9"	—
				24	13' 6"	10' 9"	9' 3"	11' 10"	9' 3"	—	10' 9"	—	—
	ProSTUD 25 250PDS125-15	0.0158	50	12	17' 2"	14' 8"	13' 0"	15' 0"	12' 10"	11' 4"	13' 3" f	11' 8"	10' 4"
				16	15' 7"	13' 4"	11' 9"	13' 3" f	11' 8"	10' 4"	11' 5" f	10' 7"	9' 1"
				24	13' 3" f	11' 8"	10' 4"	10' 10" f	10' 2"	8' 6"	9' 4" f	8' 11"	—
				12	18' 1"	15' 9"	14' 0"	15' 9"	13' 9"	12' 3"	14' 4"	12' 6"	11' 1"

HOW TO SELECT stud size and spacing

T3 I AIA Registered Courses I Non-Structural Metal Framing

- The LIMITING HEIGHT TABLES assume that partition is either COMPOSITE - one layer of 5/8 gypsum board on each side of the partition, or it is internally BRACED with channels or bars.
    - Adding sheathing layers does not change the deflection limits, so you can use the same stud size and spacing and add layers of gypsum board without modifying the deflection.





HOW TO SELECT stud size and spacing

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Limiting Height Tables - summary

- These tables assume a “composite” assembly (stud fixed top and bottom with 5/8 inch gypsum on each side) or braced.
- The thickness of the steel is 30 mils - standard for interior partitions construction.
- The loads are lateral. The minimum is 5 ft per sq. ft. and is the approximate load of air pushing the partition in a condition space. This is typical of most partitions.
- The deflections are L/240 for standard partitions, and L/360 for locations where deflection needs to be minimal because of finishes or light conditions: Partitions scheduled to receive large format tile, gloss finishes, direct light, etc. IGNORE L/120 - IT IS NOT ALLOWED BY THE CBC.

LIMITING HEIGHT TABLES

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How to use

- The deflections are L/240 for standard partitions, and L/360 for locations where deflection needs to be minimal because of finishes or light conditions: Partitions scheduled to receive large format tile, gloss finishes, direct light, etc.
  - IGNORE L/120 - IT IS NOT ALLOWED BY THE CBC.
- To find which is the maximum height you can go with a particular stud width, look at the deflection wanted (L/240), the load (5 psi) and the height (floor to underside of deck, let's say 15 feet). You need 3-1/2 studs x 30 mil studs spaced @ 24" o.c.

HOW TO SELECT stud size and spacing

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Steel Studs Manufacturers Association Table - PREFERRED

TABLE 1
MAXIMUM STUD HEIGHT [1, 2, 3]

Stud Size	Frame Spacing (in) o.c.	5 psf			7.5 psf			10 psf		
		L/120	L/240	L/360	L/120	L/240	L/360	L/120	L/240	L/360
162S125-30	12	12' 5"	9' 11"	-	10' 10"	-	-	9' 11"	-	-
162S125-30	16	11' 6"	9' 2"	-	10' 1"	-	-	9' 2"	-	-
162S125-30	24	10' 5"	8' 3"	-	9' 2"	-	-	8' 3"	-	-
250S125-30	12	16' 8"	13' 2"	11' 6"	14' 7"	11' 6"	10' 0"	13' 2"	10' 5"	9' 1"
250S125-30	16	15' 4"	12' 1"	10' 6"	13' 4"	10' 6"	9' 2"	12' 1"	9' 6"	8' 4"
250S125-30	24	13' 9"	10' 9"	9' 4"	11' 11"	9' 4"	8' 1"	10' 9"	8' 6"	7' 4"
350S125-30[4]	12	21' 8"	17' 1"	14' 10"	18' 11"	14' 10"	12' 10"	17' 1"	13' 5"	11' 8"
350S125-30[4]	16	19' 11"	15' 8"	13' 7"	17' 5"	13' 7"	11' 9"	15' 8"	12' 3"	10' 7"
350S125-30[4]	24	17' 9"	14' 0"	12' 0"	15' 6"	12' 0"	10' 5"	14' 0"	10' 10"	9' 4"
400S125-30	12	24' 0"	19' 0"	16' 6"	20' 11"	16' 6"	14' 4"	19' 0"	14' 11"	12' 11"
400S125-30	16	22' 0"	17' 6"	15' 2"	19' 3"	15' 2"	13' 1"	17' 6"	13' 8"	11' 10"
400S125-30	24	19' 8"	15' 7"	13' 5"	17' 1"f	13' 5"	11' 7"	14' 9"f	12' 1"	10' 5"
600S125-30	12	32' 1"	25' 6"	22' 3"	28' 0"	22' 3"	19' 5"	24' 7"f	20' 3"	17' 6"
600S125-30	16	29' 2"	23' 2"	20' 3"	24' 9"f	20' 3"	17' 8"	21' 5"f	18' 4"	15' 10"
600S125-30	24	25' 1"f	20' 3"	17' 8"	20' 6"f	17' 8"	15' 5"	17' 9"f	16' 0"	13' 8"

HOW TO SELECT stud size and spacing

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Steel Studs Manufacturers Association Table

TABLE 1
MAXIMUM STUD HEIGHT [1, 2, 3]

Stud Size	Frame Spacing (in) o.c.	5 psf			7.5 psf			10 psf		
		L/120	L/240	L/360	L/120	L/240	L/360	L/120	L/240	L/360
162S125-30	12	12' 5"	9' 11"	-	10' 10"	-	-	9' 11"	-	-
162S125-30	16	11' 6"	9' 2"	-	10' 1"	-	-	9' 2"	-	-
162S125-30	24	10' 5"	8' 3"	-	9' 2"	-	-	8' 3"	-	-
250S125-30	12	16' 8"	13' 2"	11' 6"	14' 7"	11' 6"	10' 0"	13' 2"	10' 5"	9' 1"
250S125-30	16	15' 4"	12' 1"	10' 6"	13' 4"	10' 6"	9' 2"	12' 1"	9' 6"	8' 4"
250S125-30	24	13' 9"	10' 9"	9' 4"	11' 11"	9' 4"	8' 1"	10' 9"	8' 6"	7' 4"
350S125-30[4]	12	21' 8"	17' 1"	14' 10"	18' 11"	14' 10"	12' 10"	17' 1"	13' 5"	11' 8"
350S125-30[4]	16	19' 11"	15' 8"	13' 7"	17' 5"	13' 7"	11' 9"	15' 8"	12' 3"	10' 7"
350S125-30[4]	24	17' 9"	14' 0"	12' 0"	15' 6"	12' 0"	10' 5"	14' 0"	10' 10"	9' 4"
400S125-30	12	24' 0"	19' 0"	16' 6"	20' 11"	16' 6"	14' 4"	19' 0"	14' 11"	12' 11"
400S125-30	16	22' 0"	17' 6"	15' 2"	19' 3"	15' 2"	13' 1"	17' 6"	13' 8"	11' 10"
400S125-30	24	19' 8"	15' 7"	13' 5"	17' 1"f	13' 5"	11' 7"	14' 9"f	12' 1"	10' 5"
600S125-30	12	32' 1"	25' 6"	22' 3"	28' 0"	22' 3"	19' 5"	24' 7"f	20' 3"	17' 6"
600S125-30	16	29' 2"	23' 2"	20' 3"	24' 9"f	20' 3"	17' 8"	21' 5"f	18' 4"	15' 10"
600S125-30	24	25' 1"f	20' 3"	17' 8"	20' 6"f	17' 8"	15' 5"	17' 9"f	16' 0"	13' 8"

HOW TO SELECT stud size and spacing

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Steel Studs Manufacturers Association Table

TABLE 1
M[illegible]M STUD HEIGHT [1, 2, 3]

Stud Size	Frame Spacing (in) o.c.	5 psf			7.5 psf			10 psf		
		L/120	L/240	L/360	L/120	L/240	L/360	L/120	L/240	L/360
162S125-30	12	12' 5"	9' 11"	-	10' 10"	-	-	9' 11"	-	-
162S125-30	16	11' 6"	9' 2"	-	10' 1"	-	-	9' 2"	-	-
162S125-30	24	10' 5"	8' 3"	-	9' 2"	-	-	8' 3"	-	-
250S125-30	12	16' 8"	13' 2"	11' 6"	14' 7"	11' 6"	10' 0"	13' 2"	10' 5"	9' 1"
250S125-30	16	15' 4"	12' 1"	10' 6"	13' 4"	10' 6"	9' 2"	12' 1"	9' 6"	8' 4"
250S125-30	24	13' 9"	10' 9"	9' 4"	11' 11"	9' 4"	8' 1"	10' 9"	8' 6"	7' 4"
350S125-30[4]	12	21' 8"	17' 1"	14' 10"	18' 11"	14' 10"	12' 10"	17' 1"	13' 5"	11' 8"
350S125-30[4]	16	19' 11"	15' 8"	13' 7"	17' 5"	13' 7"	11' 9"	15' 8"	12' 3"	10' 7"
350S125-30[4]	24	17' 9"	14' 0"	12' 0"	15' 6"	12' 0"	10' 5"	14' 0"	10' 10"	9' 4"
400S125-30	12	24' 0"	19' 0"	16' 6"	20' 11"	16' 6"	14' 4"	19' 0"	14' 11"	12' 11"
400S125-30	16	22' 0"	[illegible]"	15' 2"	19' 3"	15' 2"	13' 1"	17' 6"	13' 8"	11' 10"
[illegible]-30	24	19' 8"	[illegible]	13' 5"	17' 1"f	13' 5"	11' 7"	14' 9"f	12' 1"	10' 5"
600S125-30	12	32' 1"	[illegible]"	22' 3"	28' 0"	22' 3"	19' 5"	24' 7"f	20' 3"	17' 6"
600S125-30	16	29' 2"	23' 2"	20' 3"	24' 9"f	20' 3"	17' 8"	21' 5"f	18' 4"	15' 10"
600S125-30	24	25' 1"f	20' 3"	17' 8"	20' 6"f	17' 8"	15' 5"	17' 9"f	16' 0"	13' 8"

HOW TO SELECT stud size and spacing

T3 I AIA Registered Courses I Non-Structural Metal Framing

Carl Dietrich Table

ProSTUD® COMPOSITE LIMITING HEIGH

5/8" Type X Gypsum Board

Depth (in)	Stud member	Design thickness (in)	Yield strength (ksi)	Spacing O.C. (in)	Lateral Load (psf)								
					5psf			7.5psf			10psf		
					L/120	L/240	L/360	L/120	L/240	L/360	L/120	L/240	L/360
1-5/8	ProSTUD 30mil 162PDS125-30	0.0312	33	12	16'-3"	12'-11"	11'-3"	14'-3"	11'-3"	9'-10"	12'-11"	10'-3"	8'-8"
				16	14'-9"	11'-9"	10'-3"	12'-11"	10'-3"	8'-8"	11'-9"	9'-2"	-
				24	12'-11"	10'-3"	8'-8"	11'-3"	8'-8"	-	10'-3"	-	-
2-1/2	ProSTUD 30mil 250PDS125-30	0.0312	33	12	19'-9"	16'-3"	14'-4"	17'-3"	14'-2"	12'-6"	15'-8"	12'-11"	11'-4"
				16	17'-11"	14'-9"	13'-0"	15'-8"	12'-11"	11'-4"	14'-3"	11'-9"	10'-4"
				24	15'-8"	12'-11"	11'-4"	13'-8" f	11'-3"	9'-11"	12'-5"	10'-3"	8'-8"
3-1/2	35[illegible]-30	0.0312	33	12	25'-4"	20'-2"	17'-7"	22'-2"	17'-7"	15'-4"	20'-2"	16'-0"	13'-11"
				16	23'-0"	18'-3"	16'-0"	20'-2"	16'-0"	13'-11"	18'-3"	14'-6"	12'-8"
				24	20'-2"	16'-0"	13'-11"	17'-7"	13'-11"	12'-2"	16'-0"	12'-8"	10'-11"
3-5/8	ProSTUD 30mil 362PDS125-30	0.0312	33	12	25'-8"	20'-5"	17'-10"	22'-5"	17'-10"	15'-7"	20'-5"	16'-2"	14'-2"
				16	23'-4"	18'-6"	16'-2"	20'-5"	16'-2"	14'-2"	18'-6"	14'-8"	12'-10"
				24	20'-5"	16'-2"	14'-2"	17'-10"	14'-2"	12'-3"	16'-2"	12'-10"	11'-0"
4	ProSTUD 30mil 400PDS125-30	0.0312	33	12	2[illegible]-5"	21'-9"	19'-0"	24'-0"	19'-0"	16'-8"	21'-9"	17'-4"	15'-1"
				16	[illegible]	19'-10"	17'-4"	21'-9"	17'-4"	15'-1"	19'-10"	15'-9"	13'-9"
				24	[illegible]	17'-4"	15'-1"	19'-0"	15'-1"	13'-2"	17'-4"	13'-9"	11'-10"
5-1/2	ProSTUD 30mil 550PDS125-30	0.0312	33	12	[illegible]	27'-7"	24'-1"	30'-5"	24'-1"	21'-1"	27'-7"	21'-11"	19'-2"
				16	[illegible]	25'-1"	21'-11"	27'-7"	21'-11"	19'-2"	25'-1"	19'-11"	17'-4"
				24	27'-7"	21'-11"	19'-2"	24'-1"	19'-2"	16'-7"	21'-11"	17'-4"	-
6	ProSTUD 30mil 600PDS125-30	0.0312	33	12	36'-7"	29'-1"	25'-5"	32'-0"	25'-5"	22'-2"	29'-1"	23'-1"	20'-2"
				16	33'-3"	26'-5"	23'-1"	29'-1"	23'-1"	20'-2"	26'-5"	20'-11"	18'-4"
				24	29'-1"	23'-1"	20'-2"	25'-5"	20'-2"	17'-7"	22'-6" f	18'-4"	-

FIRE RATED PARTITIONS

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HEAD FIRE JOINTS

Framing for rated partitions is the same as for non-rated partitions except for the HEAD TRACK.

- The head track is considered a FIRE JOINT, that means that it is located between two areas which are protected from fire and therefore it has to be designed and constructed so the fire cannot go through it.

FIRE RATED PARTITIONS

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- The fire is stoped by filling the space between the track and the upper substrate (underdeck, beam, etc.) with a fire joint assembly that has been tested to stop the fire for the time indicated by the rating (1 hour, 2 hours).
- These fire joint assemblies need to be installed exactly as tested (including exact products). Any deviation has to be approved by the engineer of the manufacturer or the testing agency. These approved deviations are called “engineering judgements”.

FIRE RATED PARTITIONS

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FIRE RATED ASSEMBLIES ARE **NEVER NEVER NEVER** DESIGNED BY US!!!!!!

- Fire rated assemblies are sourced from published assemblies by associations such as UL, GA (Gypsum Association), or the manufacturers with the applicable testing number.
- Preferably, use assemblies issued by associations over assemblies which

SHAFT WALLS and STAIR WALLS

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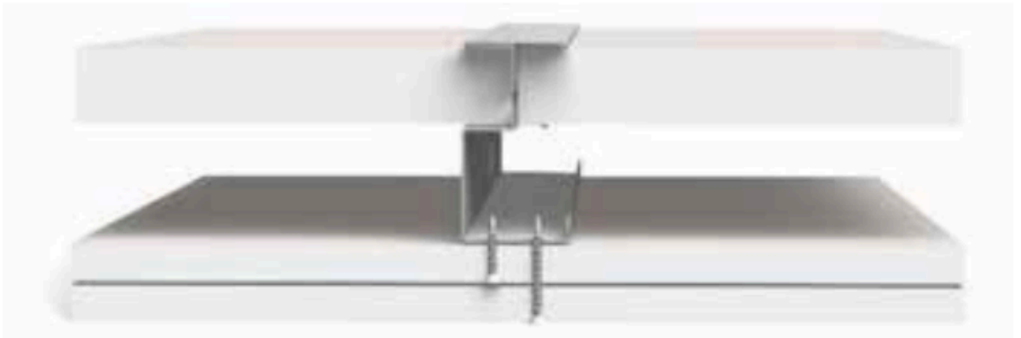
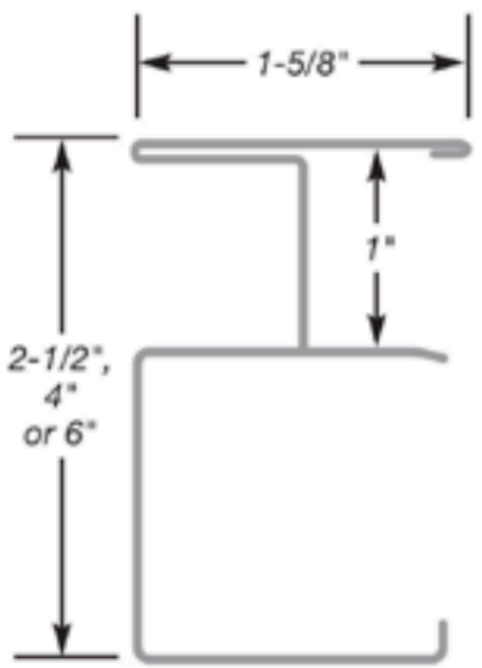
SHAFT WALLS

- Non-loading, 2-hour rated, shaftwalls are continuous from the entire length of the shaft. They contain elevators, piping, or other mechanical/electrical items.
- The lateral load elevator shafts resist is higher than partitions, because the air is pushed by elevator as it travels.
- Only one side is finished finish when finishing is required.
- They may be designed by a structural engineer.



Shaftwall



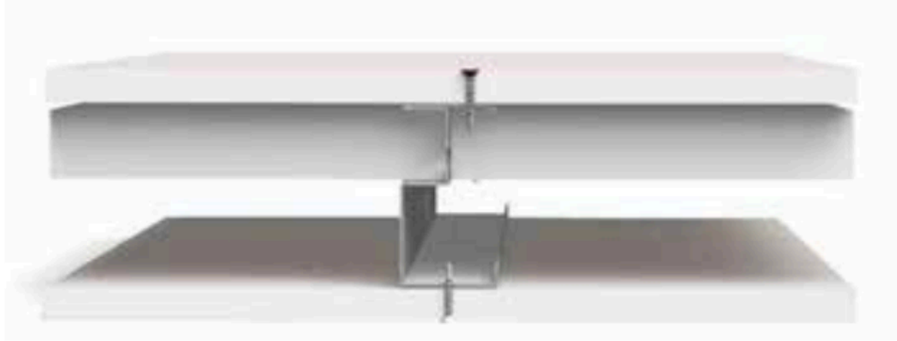
C-T Stud

SHAFT WALLS and STAIR WALLS

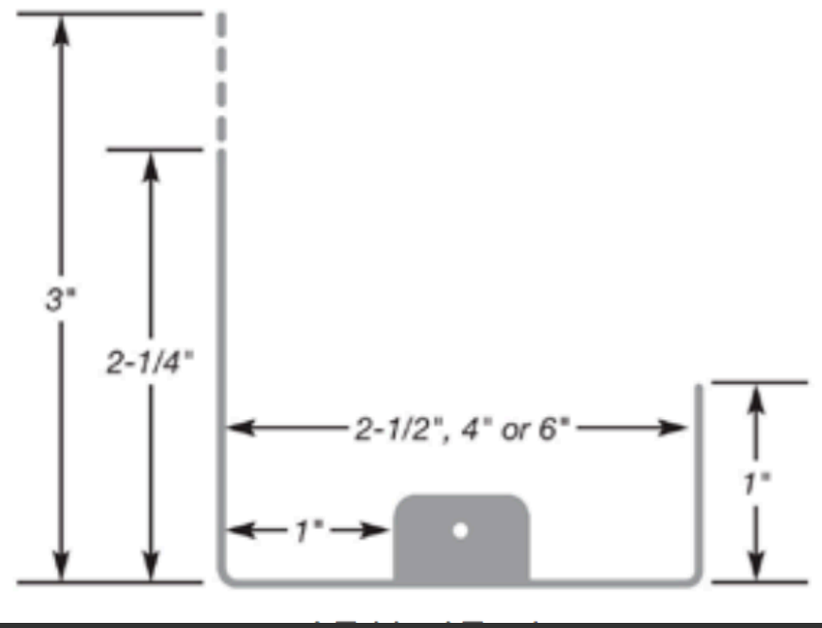
T3 I AIA Registered Courses I Non-Structural Metal Framing

STAIR WALLS

- Non-loading, 1 or 2-hour rated, stair walls are continuous from the entire length of the stair shaft.
- The lateral load elevator shafts resist is same partitions.
- Two sides are finished.

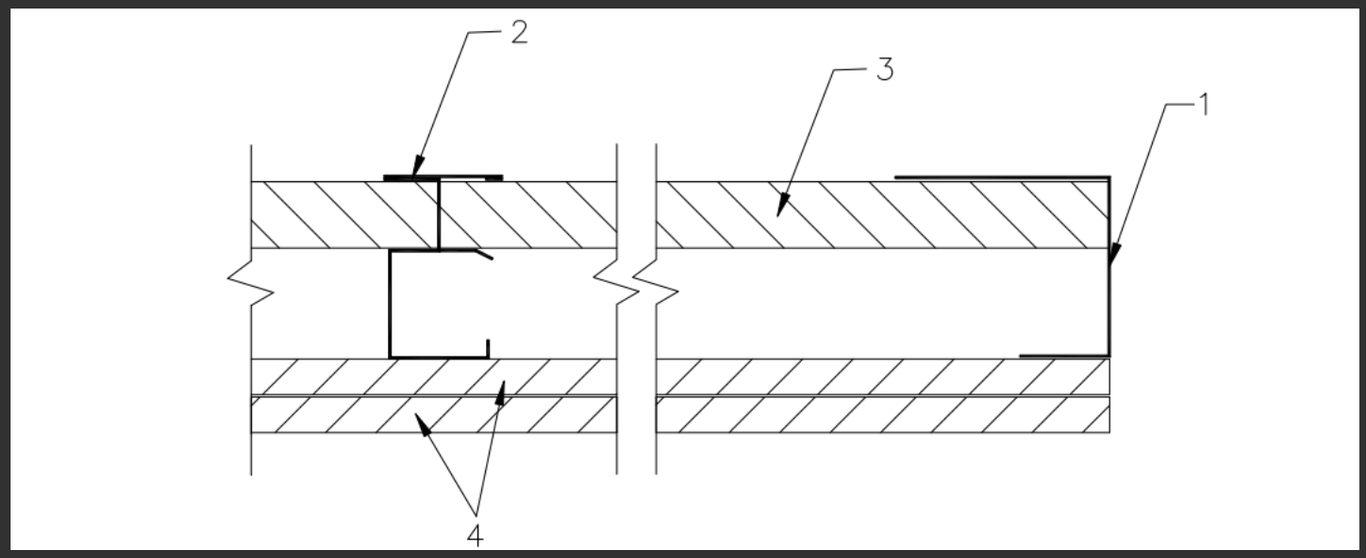


Stairwell

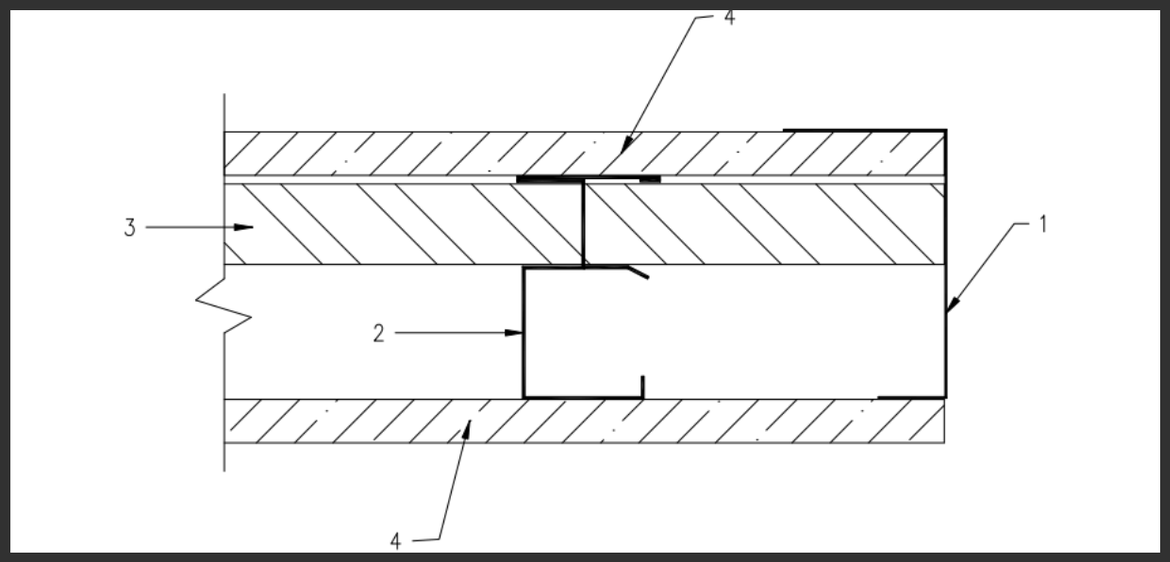


SHAFT WALLS and STAIR WALLS

T3 I AIA Registered Courses I Non-Structural Metal Framing



Shaft wall



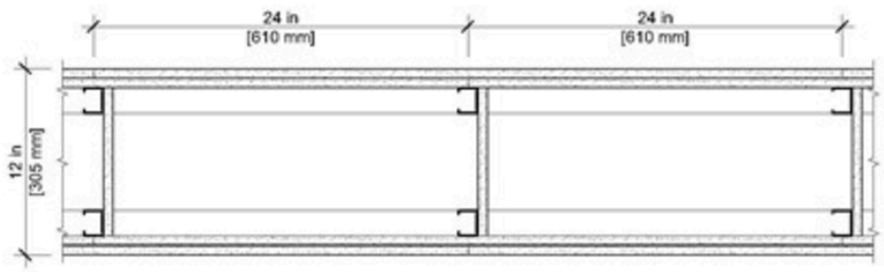
Stair wall

CHASE WALLS

T3 I AIA Registered Courses I Non-Structural Metal Framing

Chase walls are used to conceal piping and ducts. They are fire-rated. To find out rated assemblies, you can visit the USG Wall Selector (google it).

Fire Test	Fire Rating	STC	Thickness (in.)
UL U420 or BSA 173-77-SM Steel Stud (Non-load-bearing) Area Separation Wall	2 hr.	N/A	12"



CAD · REVIT · VIEW ASSEMBLY

- **Gypsum Board** - 5/8 in. thick gypsum board applied horizontally or vertically
- **Gypsum Board** -5/8 in. thick gypsum board applied horizontally or vertically
- **Steel Studs** -1-5/8 in. thick 25 ga. spaced 24 in. OC
- **Bracing** -Steel or gypsum board
- **Gypsum Board** -5/8 in. thick gypsum board applied horizontally or vertically
- **Gypsum Board** -5/8 in. thick gypsum board applied horizontally or vertically