



framing with studs

non-structural metal framing - PARTITIONS

DEFINITIONS

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

- 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.

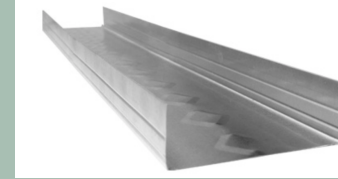
There are two families of studs:

- STRUCTURAL which are handled by the structural engineer and
- NON-STRUCTURAL which are for non-load support framing such as partitions, soffits etc. **These are called “DRYWALL STUDS” and are 30mils thick.**

PARTITIONS

FRAMING MEMBERS:

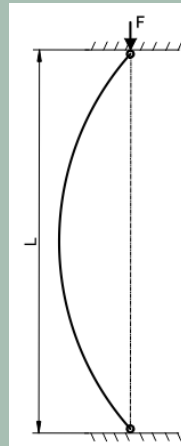
- Floor track
- Studs
- Head track
- Bridging



DEFLECTION LIMITS

- Deflection measures the amount of displacement from the vertical alignment.
- The amount of displacement allowed for interior partitions allowed 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 IS THE SURFACE OF THE PARTITION



HOW TO SELECT STUD SIZE AND SPACING

- RMW INTERIOR DETAIL LIBRARY includes partition types classified by height limits, construction, rating, and performance.
- If you cannot find the partition type you need in the Detail Library, 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.
- SELECT the stud size (3-5/8 below).
- SELECT the columns under 5 psf (the standard lateral force on interior partitions.)
- SELECT the Deflection Limit you want (Typically L/240 or L/360 for partitions that need to be very, very flat) and that column will give you the maximum heights allowable for each stud spacing - for example, for a maximum height of 18'-6", you need 3-5/8" wide studs spaced @ 16" o.c.

DRYWALL STUDS are 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.
- A superimposed vertical load of not more than 200 lbs.

Clark Dietrich table

ProSTUD® COMPOSITE LIMITING HEIGHT					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"	
3-5/8	ProSTUD 30mil 350PDS125-30	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"	
4	ProSTUD 30mil 400PDS125-30	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"	
5-1/2	ProSTUD 30mil 550PDS125-30	0.0312	33	12	27'-5"	19'-0"	16'-8"	24'-0"	19'-0"	16'-8"	21'-9"	17'-4"	15'-1"	
				16	24'-11"	17'-4"	15'-1"	21'-9"	17'-4"	15'-1"	19'-10"	15'-9"	13'-9"	
				24	21'-9"	15'-1"	13'-9"	19'-0"	15'-1"	13'-2"	17'-4"	13'-9"	11'-10"	
6	ProSTUD 30mil 600PDS125-30	0.0312	33	12	34'-9"	24'-1"	20'-5"	30'-5"	24'-1"	21'-1"	27'-7"	21'-11"	19'-2"	
				16	31'-7"	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"	-	
				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"	-	