

## U.S. STANDARD STEEL GAUGE EQUIVALENTS IN NOMINAL DIMENSIONS

Gauge	Approximate Dimensions		Decimals (inches)		
	Inches	Millimeters	Uncoated Steel	Galvanized Steel (G90)	Triple Zinc
3	1/4	6.0	0.239	---	---
7	3/16	4.5	0.179	0.186	---
10	9/64	3.4	0.134	0.138	0.140
11	1/8	3.0	0.120	0.123	0.125
12	7/64	2.7	0.105	0.108	0.110
14	5/64	2.0	0.075	0.078	0.080
16	1/16	1.5	0.060	0.063	0.065
18	3/64	1.2	0.048	0.052	0.054
20	1/32	1.0	0.036	0.040	0.042
22	1/32	0.8	0.030	0.033	0.036

\*Actual steel dimensions will vary from nominal dimensions according to industry tolerances.

## MAXIMUM SHEAR CAPACITY OF JOIST OR RAFTER

The table below indicates the calculated shear capacity of different dimensional lumber sizes for various wood species.

Nom Dim	Factored Shear Resistance							
	Lbs				kN			
	DF		SPF		DF		S-P-F	
	100%	115%	100%	115%	100%	115%	100%	115%
2 x 4	1430	1645	1130	1300	6.37	7.33	5.03	5.78
2 x 6	1860	2140	1470	1690	8.27	9.51	6.53	7.51
2 x 8	2105	2420	1660	1910	9.36	10.76	7.39	8.50
2 x 10	2465	2830	1945	2235	10.95	12.60	8.65	9.95

- 1) Applies to nominally dimensioned joist as listed in dry service conditions and temperatures less than 38°
- 2) Loads apply to:  
DF-L: Douglas Fir-Larch (G=0.50),  $f_v=1.9$  Mpa;  
S-P-F: Spruce-Pine-Fir (G=0.42),  $f_v=1.5$  Mpa
- 3) 115% loads are increased for short term loading in accordance with the code.  $K_d = 1.15$ .

## ROOF PITCH

If common Rafter Roof Pitch is . . .

Rise / Run (inches)	Slope (degrees)
1/12	5
2/12	10
3/12	14
4/12	18
5/12	23
6/12	27
7/12	30
8/12	34
9/12	37
10/12	40
11/12	42
12/12	45

Then Hip/Valley Rafter Roof Pitch becomes . . .

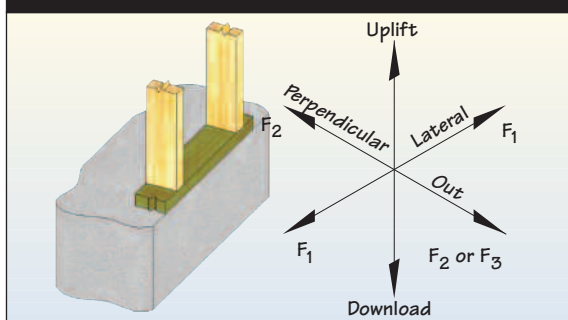
Rise / Run (inches)	Slope (degrees)
1/17	3
2/17	7
3/17	10
4/17	13
5/17	16
6/17	19
7/17	22
8/17	25
9/17	28
10/17	30
11/17	33
12/17	35

Slope Conversion Table

Rise / Run (inches)	Slope (degrees)
0/12	Flat
1/12	5
2/12	10
3/12	14
4/12	18
5/12	23
6/12	27
7/12	30
8/12	34
9/12	37
10/12	40
11/12	42
12/12	45

- 1) Use this conversion table only for hip/valley rafters that are skewed 45° right or left. All other skews or dual pitch roofs will cause the slope to change from that listed above.

## LOAD DIRECTION CONVENTIONS



## SPECIAL & CUSTOM CONNECTORS

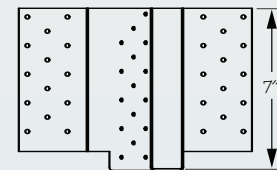
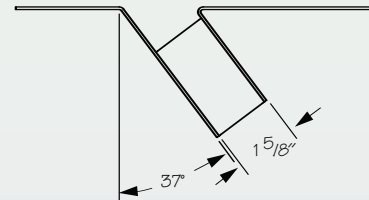
USP is committed to meeting every need you have and we understand that stock connectors will not meet all application or design requirements. Our Technical Assistance Representatives will work with you to develop and fabricate the Special or Custom connector you need.

### What is the difference between a “Special” and a “Custom” connector?

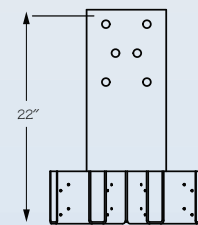
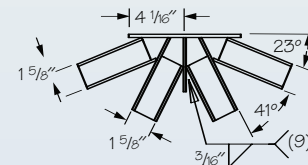
A “Special” is a stock USP connector that is modified within the limits listed in the Specialty Options chart.

A “Custom” is a connector that does not closely resemble a stock or special part offered in our catalog. Also, a “Custom” connector may be a stock connector that is modified outside of the limits listed in the Specialty Options charts or is not listed in the catalog as having a specialty option available. Product drawings must be provided by the customer and will be manufactured by USP in accordance to customer specifications.

A full range of shipping options are available from regular freight to overnight delivery.



Special Order detail



Custom Order detail