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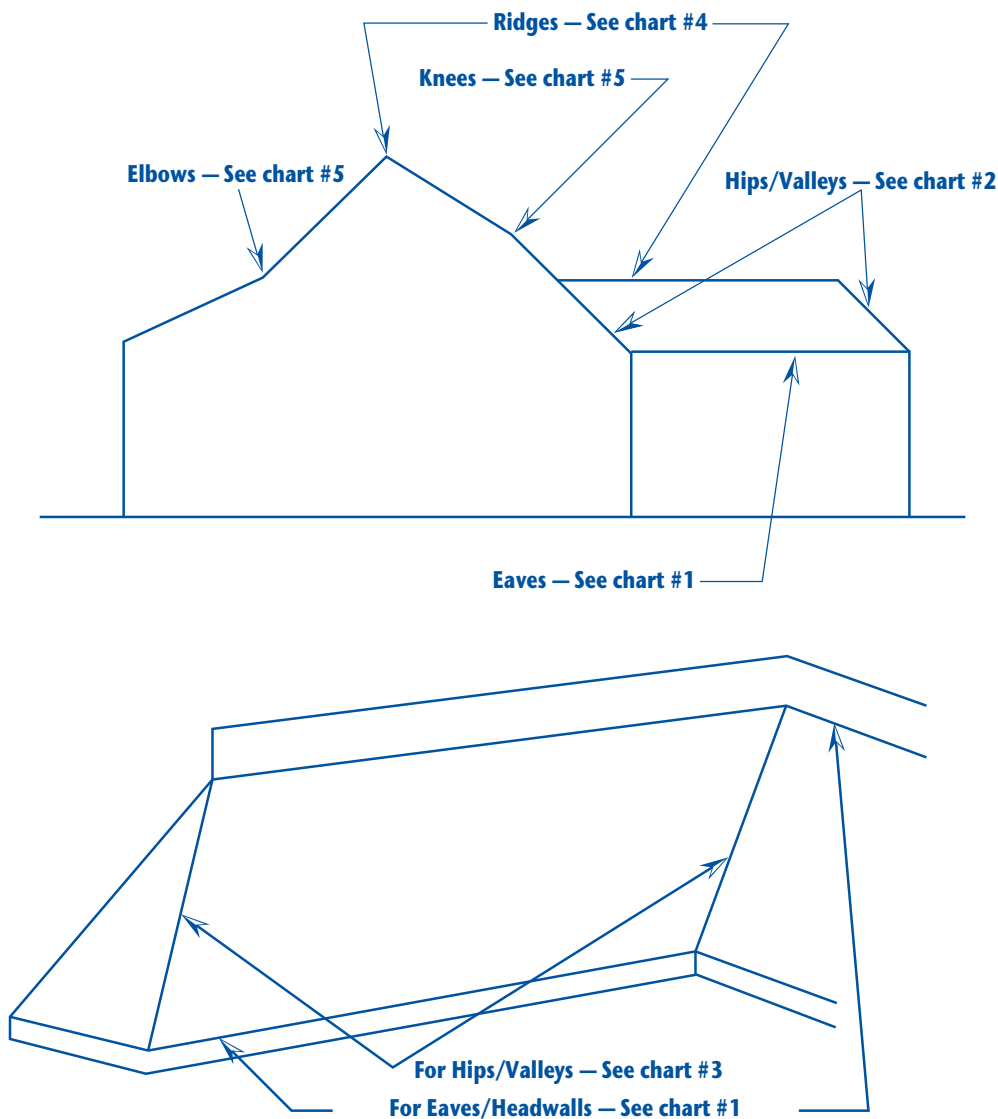


*Our reputation expects it.™*

**PLANNING GUIDE FOR ANGLES AND SLOPES**

**The attached charts are provided as a courtesy of Consolidated Metals of Florida, a division of ASI Building Products, for our customers' use.**

The illustrations below show you which chart to use in regards to a particular roof area closure problem.



When using any particular chart, just note the roof slopes and/or pitches being utilized and follow same on the chart to find the forming angle of the trims involved.

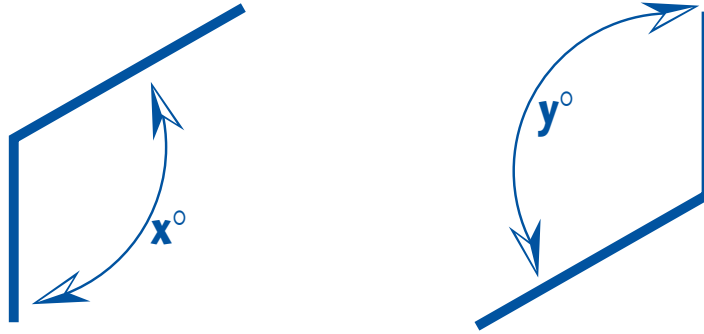
On the above building illustration, let's assume that the slopes involved at the ridge are 12/12 meeting an 11/12. You would, as indicated, go to chart #4 and then follow the 12/12 pitch on either the vertical or horizontal listing and follow that line until it intersects with the 11/12 pitch line. In this case you will notice that the ridge cap will be formed to a 92 included angle.

To further illustrate the elbow transition on the left side, let's assume it has the above 11/12 pitch roof meeting a 4/12 slope roof coming from the eave. In this case you refer to chart #5 and follow the two involved pitches/slopes to find that the transition trim should be formed to include an angle of 156.

All of the attached charts work the same way and should ease your planning problems in regard to forming properly angled closures for your structure.

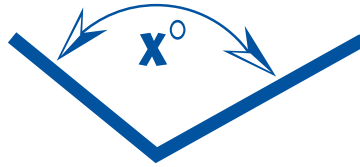
The illustration below shows a mansard or canopy situation where the slopes/pitches may be greater than the norm (12/12).

# CHART #1 – EAVE/HEADWALL (BOTH VERTICAL) FORMING ANGLE CHART



SLOPE AND/OR ANGLE	INCLUDED ANGLE
1/12 SLOPE	95°
2/12 SLOPE	99°
3/12 SLOPE	104°
4/12 SLOPE	108°
5/12 SLOPE	113°
6/12 SLOPE	117°
7/12 SLOPE	120°
8/12 SLOPE	124°
9/12 SLOPE	127°
10/12 SLOPE	130°
11/12 SLOPE	133°
12/12 SLOPE	135°
50° SLOPE	140°
55° SLOPE	145°
60° SLOPE	150°
65° SLOPE	155°
70° SLOPE	160°
75° SLOPE	165°
80° SLOPE	170°
85° SLOPE	175°

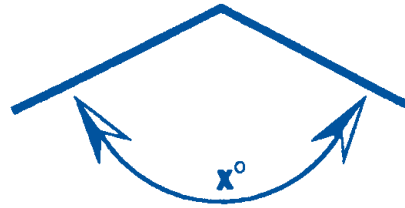
# CHART #2 – HIP AND/OR VALLEY TRUE FORMING ANGLE CHART



TO FIND HIP AND/OR VALLEY INCLUDED ANGLE CROSS PITCH TO PITCH			PITCH	1	2	3	4	5	6	7	8	9	10	11	12
PITCH	DEGREE	FACTOR													
1	4.7636417° OR 4°-45'-49"	1.003466 X FLAT AREA OR RUN		173°	170°	166°	163°	159°	156°	152°	149°	145°	142°	138°	135°
2	9.4623222° OR 9°-27'-45"	1.013794 X FLAT AREA OR RUN		170°	168°	163°	160°	156°	152°	150°	148°	143°	140°	137°	134°
3	14.036243° OR 14°-02'-10"	1.030776 X FLAT AREA OR RUN		166°	163°	160°	157°	153°	151°	148°	145°	141°	138°	135°	133°
4	18.434949° OR 18°-26'-06"	1.054093 X FLAT AREA OR RUN		163°	160°	157°	154°	151°	148°	145°	143°	139°	137°	134°	131°
5	22.619865° OR 22°-37'-12"	1.083333 X FLAT AREA OR RUN		159°	156°	153°	151°	148°	145°	143°	140°	138°	135°	133°	130°
6	26.565051° OR 26°-33'-54"	1.118034 X FLAT AREA OR RUN		156°	152°	150°	148°	145°	143°	141°	139°	136°	134°	131°	129°
7	30.256437° OR 30°-15'-23"	1.157704 X FLAT AREA OR RUN		152°	150°	148°	145°	143°	141°	139°	137°	135°	131°	129°	128°
8	33.690068° OR 33°-41'-24"	1.201850 X FLAT AREA OR RUN		149°	147°	145°	143°	140°	139°	137°	135°	132°	130°	128°	126°
9	36.869898° OR 36°-52'-12"	1.250000 X FLAT AREA OR RUN		145°	143°	141°	139°	138°	136°	135°	132°	130°	129°	126°	125°
10	39.805571° OR 39°-48'-20"	1.301708 X FLAT AREA OR RUN		142°	140°	138°	137°	135°	134°	131°	130°	128°	126°	125°	123°
11	42.510447° OR 42°-30'-38"	1.356568 X FLAT AREA OR RUN		138°	137°	135°	134°	133°	131°	129°	128°	126°	125°	123°	121°
12	45.000000° OR 45°-00'-00"	1.414214 X FLAT AREA OR RUN		135°	134°	133°	131°	130°	129°	128°	126°	125°	123°	121°	120°

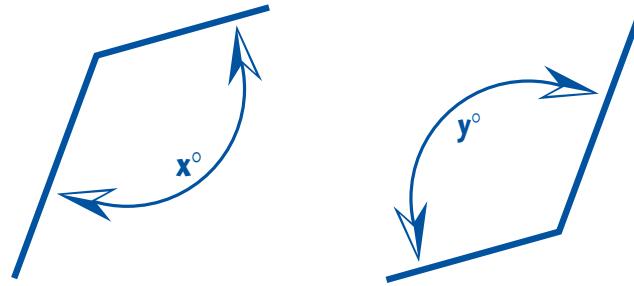


# CHART #4 – RIDGE TRUE FORMING ANGLE CHART



TO FIND RIDGE INCLUDED ANGLE CROSS PITCH TO PITCH			PITCH	1	2	3	4	5	6	7	8	9	10	11	12
PITCH	DEGREE	FACTOR		/											
1	4.7636417° OR 4°-45'-49"	1.003466 X FLAT AREA OR RUN		170°	166°	161°	157°	153°	149°	145°	142°	138°	135°	133°	130°
2	9.4623222° OR 9°-27'-45"	1.013794 X FLAT AREA OR RUN		166°	161°	157°	152°	148°	144°	140°	137°	134°	131°	128°	126°
3	14.036243° OR 14°-02'-10"	1.030776 X FLAT AREA OR RUN		161°	157°	152°	148°	143°	139°	136°	132°	129°	126°	123°	121°
4	18.434949° OR 18°-26'-06"	1.054093 X FLAT AREA OR RUN		157°	152°	148°	143°	139°	135°	131°	128°	125°	122°	119°	117°
5	22.619865° OR 22°-37'-12"	1.083333 X FLAT AREA OR RUN		153°	148°	143°	139°	135°	131°	127°	124°	121°	118°	115°	112°
6	26.565051° OR 26°-33'-54"	1.118034 X FLAT AREA OR RUN		149°	144°	139°	135°	131°	127°	123°	120°	117°	114°	111°	108°
7	30.256437° OR 30°-15'-23"	1.157704 X FLAT AREA OR RUN		145°	140°	136°	131°	127°	123°	119°	116°	113°	110°	107°	105°
8	33.690068° OR 33°-41'-24"	1.201850 X FLAT AREA OR RUN		142°	137°	132°	128°	124°	120°	116°	113°	109°	107°	104°	101°
9	36.869898° OR 36°-52'-12"	1.250000 X FLAT AREA OR RUN		138°	134°	129°	125°	121°	117°	113°	109°	106°	103°	101°	98°
10	39.805571° OR 39°-48'-20"	1.301708 X FLAT AREA OR RUN		135°	131°	126°	122°	118°	114°	110°	107°	103°	100°	98°	95°
11	42.510447° OR 42°-30'-38"	1.356568 X FLAT AREA OR RUN		133°	128°	123°	119°	115°	111°	107°	104°	101°	98°	95°	92°
12	45.000000° OR 45°-00'-00"	1.414214 X FLAT AREA OR RUN		130°	126°	121°	117°	112°	108°	105°	101°	98°	95°	92°	90°

# CHART #5 – TRANSITION (KNEE AND/OR ELBOW TYPE) TRUE FORMING ANGLE CHART



TO FIND TRANSITIONS INCLUDED ANGLE BETWEEN TWO SLOPED ROOFS JUST CROSS PITCH TO PITCH			PITCH											
			1	2	3	4	5	6	7	8	9	10	11	12
PITCH	DEGREE	FACTOR	/											
1	4.7636417° OR 4°-45'-49"	1.003466 X FLAT AREA OR RUN	N/A	175°	171°	166°	162°	158°	155°	151°	148°	145°	142°	140°
2	9.4623222° OR 9°-27'-45"	1.013794 X FLAT AREA OR RUN	175°	N/A	175°	171°	167°	163°	159°	156°	153°	150°	147°	145°
3	14.036243° OR 14°-02'-10"	1.030776 X FLAT AREA OR RUN	171°	175	N/A	176°	171°	167°	164°	160°	157°	154°	152°	149°
4	18.434949° OR 18°-26'-06"	1.054093 X FLAT AREA OR RUN	166°	171°	176°	N/A	176°	172°	168°	165°	162°	159°	156°	153°
5	22.619865° OR 22°-37'-12"	1.083333 X FLAT AREA OR RUN	162°	167°	171°	176°	N/A	176°	172°	169°	166°	163°	160°	158°
6	26.565051° OR 26°-33'-54"	1.118034 X FLAT AREA OR RUN	158°	163°	167°	172°	176°	N/A	176°	173°	170°	167°	164°	162°
7	30.256437° OR 30°-15'-23"	1.157704 X FLAT AREA OR RUN	155°	159°	164°	169°	172°	176°	N/A	177°	173°	170°	168°	165°
8	33.690068° OR 33°-41'-24"	1.201850 X FLAT AREA OR RUN	151°	156°	160°	165°	169°	173°	177°	N/A	177°	174°	171°	169°
9	36.869898° OR 36°-52'-12"	1.250000 X FLAT AREA OR RUN	148°	153°	157°	162°	166°	170°	173°	177°	N/A	177°	174°	172°
10	39.805571° OR 39°-48'-20"	1.301708 X FLAT AREA OR RUN	145°	150°	154°	159°	163°	167°	170°	174°	177°	N/A	177°	175°
11	42.510447° OR 42°-30'-38"	1.356568 X FLAT AREA OR RUN	142°	147°	152°	156°	160°	164°	168°	171°	174°	177°	N/A	178°
12	45.000000° OR 45°-00'-00"	1.414214 X FLAT AREA OR RUN	140°	145°	149°	153°	158°	162°	165°	169°	172°	175°	178°	N/A

*Distributed by*



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