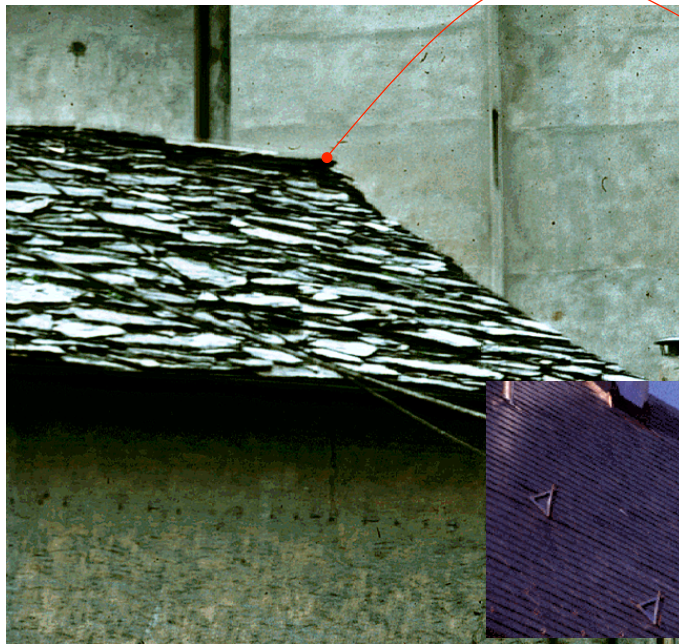


Stone roofing



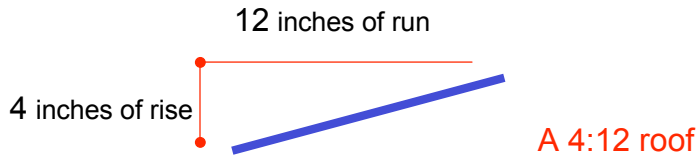
Stone roof in
Aosta, Italy

Slate roof @
McComas Ha

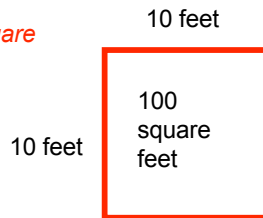


Roofers measures

- Slopes
 - Measured in vertical rise in inches per foot of horizontal run



- Area
 - Base unit of measure is the *square*
 - a 10 foot by 10 foot area

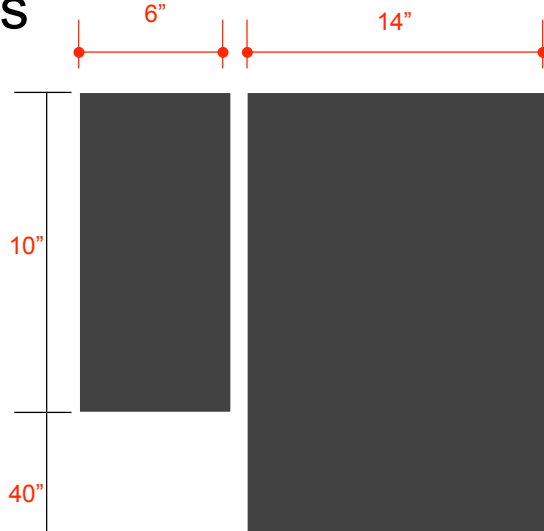


Slopes & Weights

•Material	Min. slope	Underlay	Estimated pounds per Square (100 s.f.)
•Slate	6:12	30# felt	700 - 8,000# per sq
•Asphalt Shingle	3:12	15# felt	205 - 320# per sq
•Wood Shake	4:12	30# felt	120# per sq
•Wood Shingle	5:12	no felt req'd	100# per sq
•Clay Tile	4 1/2:12	30# felt	9000 - 12,500# per sq
•Metal	3:12	red rosin	120# per sq.

Slate sizes

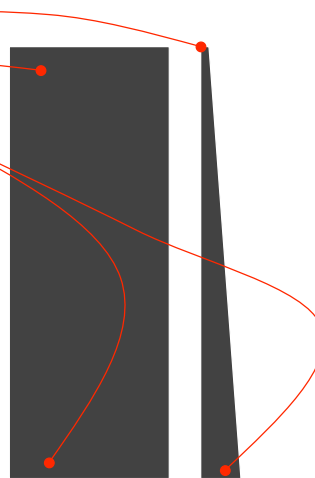
- Slates are available in a wide variety of sizes between 6" x 10" up to 14" x 24".
- Usually slates have holes pre-punched in them for the copper nails.

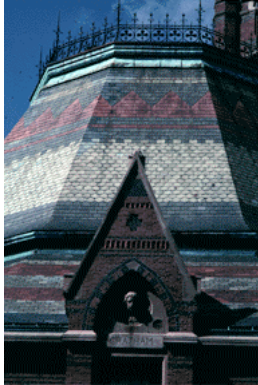


Terminology

- Slate
 - Head (3/16" thinnest)
 - Butt thickness - 3/16" up to 2"
 - ...can weigh between 700 and 8,000 lbs per 100 square feet!

Slate		Average Weight of Slate per Square (100 sq. ft.)	
Thickness in Inches		Sloping Roof Allowing for 3" Lap	
Standard	$\frac{3}{16}$	700	
Selected	$\frac{7}{16}$	750	
	$\frac{1}{4}$	1,000	
	$\frac{5}{8}$	1,500	
	$\frac{3}{4}$	2,000	
	$\frac{7}{8}$	3,000	
	1	4,000	
	$1\frac{1}{4}$	5,000	
	$1\frac{3}{8}$	6,000	
	$1\frac{1}{2}$	7,000	
	2	8,000	





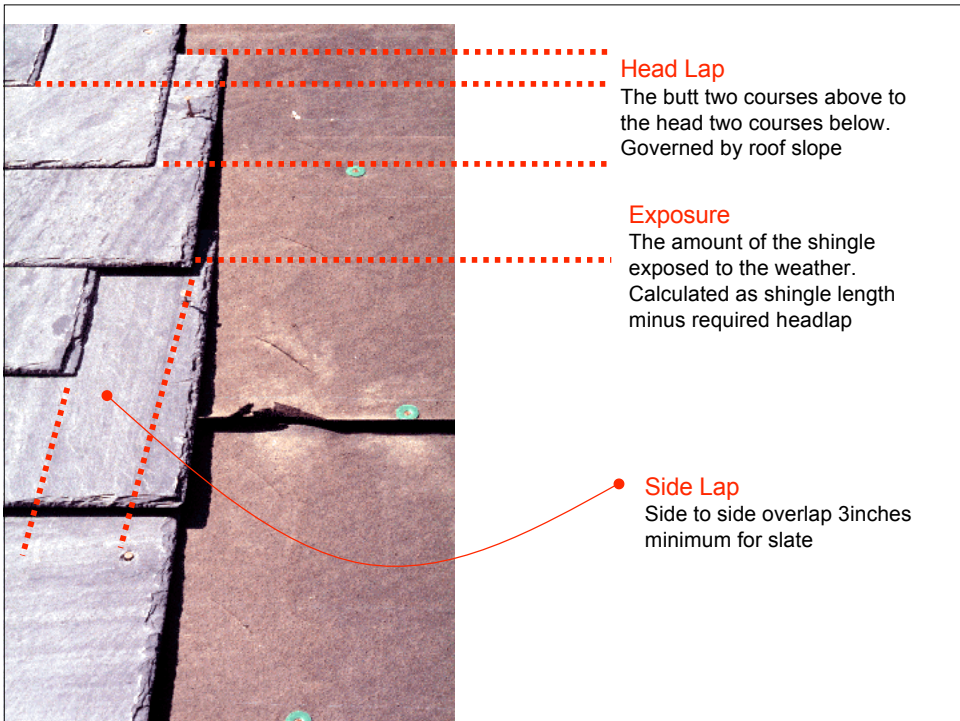
Colors available,

Reds,
Green,
Grey
Black
Purple

Never fades!

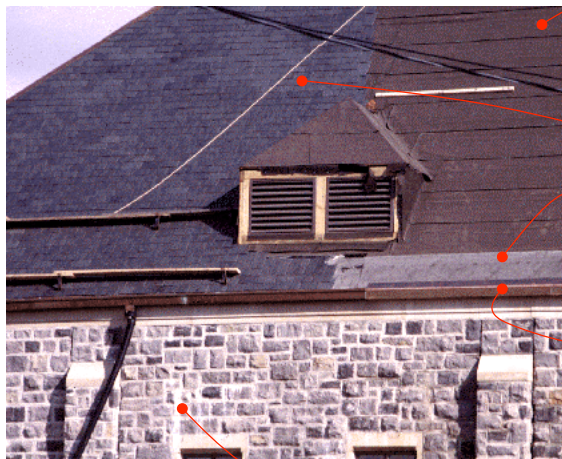


http://www.virginiaslate.com/sr/SR_04.html



	<p>Steep slope requires less headlap</p> <p>20:12 slope needs only 2 1/2" headlap</p>
	<p>moderate slope requires more headlap</p> <p>8:12 slope needs 3" headlap</p>
	<p>lower slope requires more headlap</p> <p>6:12 slope needs 4" headlap</p>
	<p>6:12 slope is the recommended minimum for slate</p>

<p>Asphalt impregnated building paper</p> <p>Slates coursed for "3 stepping"</p> <p>Copper valley flashing</p> <p>Ice dam membrane</p>	
--	--



- Asphalt impregnated building paper
- Slates
- Ice dam membrane
- Copper gutter
- Efflorescence!

