

****Roofing Materials** for Steep Slope Applications**

- **Natural Slate**
- **Clay Tile**
- **Composition Shingle**
- **Natural Wood Shake and Shingle**
- **Metal Roofing, Standing Seam**

****Natural Slate****

Styles, Types, Grades and Manufacturers:

Mining sites, colors and durability:

- Vermont: Green, Sea-Green, Gray, Red, Purple (hard and durable)
- Maine: Solid Black (very hard and durable)
- New York: Similar to Vermont near Vermont border
- Peach Bottom Pennsylvania and Maryland: Black Slats (very hard and very long lasting).
- Buckingham Virginia: Black (very hard and very durable)
- Eastern Pennsylvania: Black, Blue-black, Dark-Gray (Gray slates tend to be soft), lowest quality in slate family
- Welch: Mine in Wales, usually black or Gray, roofs installed over 100 years ago still in good shape. The highest quality, if you can get it.

Styles:

- Pointed, Deep and Shallow Bevel and Shallow Scallop, Fish Scale and Square.

Manufacturers: Evergreen Slate Company

- Greenstone Slate Company
- American Slate Company
- Global Stone

Technical Data:

- Class A Fire Resistance
- Weight: From 3/16" thickness @700 lbs. per square to 2" thickness @8000 lbs. per square.
- Underlayments: 15 lb felt, 30 lbs. felt, 43 lb. felt and Ice and Watershield.

- Exposures: 5” to 10”
- Structural Requirements: Very Important due to extreme weights.

Advantages:

- Exceptional weatherability
- High wind resistance
- Resistant to fire “fireproof”
- Low cost life-cycle
- “*Natural Beauty*” Often imitated but never duplicated

Disadvantages:

- HEAVY, must be power lifted to roof areas, may require structural reinforcement
- Requires maintenance by experienced roofers “SLATERS”
- Expensive up front cost, but low life cycle cost

****Clay Tile****

Styles, Types, Grades and Manufacturers

Styles:

- Spanish
- Mission
- French
- Book Tile
- Brushed
- Slate
- Glazed
- Colored
- Standard Clay Red

Manufacturers:

- Ludowici / Certainteed
- Vande Hey Raleigh
- Greenstone
- Les Tuiles Le Livere

Technical Data:

- Class “A” Fire Rating
- Resistant to wind
- 1000 lb. to 200 lb. per square
- Underlayment requirement: 30 lb., 43 lb. and Ice and Watershield
- Exposures: 8” to 12”

Advantages:

- Very durable
- Very high wind resistance (when installed properly)
- Low life cycle cost
- 50 year to 75 year manufacturer warranties, but can last much longer

Disadvantages:

- Expensive, very high front end cost
- Very heavy, structural evaluations necessary
- Prone to ice and blown water infiltration, proper underlayment is paramount
- Open valleys require copper
- Underlayment will wear-out long before tile

****Composition Shingle****

Styles, Types, Grades and Manufacturers

Styles:

- 3-in-1, Standard Square-tab
- Architectural laminate
- Architectural

Manufacturers and Styles:

- **CertaInteed**
 - Grand Manor
 - Carriage House
 - Hatteras
 - Dimensional 25, 30 and 40
 - XT 25 and 30
- **Owens Corning**
 - Oakridge Series
 - Oakridge Shadow 30, 40 and 50
 - Prominence
 - Weatherguard 40 *High Wind 110*
 - Supreme 25 and 30
 - Classic 25
- **GAF**
 - Country Manor
 - Timberline, dimensional and artificial shake
 - Slate-Line, imitation slate with shadow line

- Grand Sequoia
- Royal Sovereign
- Sentinel
- **TAMKO**
 - Heritage 30, 40 and 50
 - Glass-Seal Elite 30
 - Glass-Seal 25

Technical Data:

- 200 to over 400 lbs. per square
- Warranties: 20, 25, 30, 40, 50 and Life-Time
- Class “A” Fire-Rating
- 5” to 9” exposures

Advantages:

- Low front end cost
- Relatively easier to install than other materials
- Multitudes of shapes, styles and colors
- Wide range of pricing, but generally economical
- Variety of warranty periods
- Typically no special structural provisions necessary
- Architectural types provide high wind resistance

Disadvantages:

- May only last 15 to 20 years causing high life cycle cost
- High replacement rate is causing over-fill at waste dumps with petroleum based product
- 3-tab shingles are prone to hail and wind damages
- Prone to misapplication due to relative ease of application
- Dependent on proper ventilation and sound substrate conditions

****Wood Shake/Shingle****

Styles, Types, Grades and Manufacturers

Styles:

- Wood Shake, light medium and heavy
- Wood Shingle (typically used as siding)
- Western Red Cedar Shake (recommended)
- Hand Split and/or Sawn

Manufacturers:

- Teal Cedar Products, Western Red Cedar

- Certi-Split, Western Red Cedar

Technical Data:

- Exposures: 7” to 14”
- Fire Ratings: Class “A”, “B” and “C”, dependant on retardant option

Advantages:

- Natural beauty often copied
- Installation somewhat easier than slate and tile, but more difficult than composition shingles

Disadvantages:

- Possible fire hazard
- Life cycle: Very short with high replacement cost
- Very dependant on proper ventilation, substrate and weather conditions
- Areas of wide-spanned fluctuating weather are not well suited, causing warping and mold

****Metal Roofing****

Styles, Types, Grades and Manufacturers

Styles:

- Raised or standing seam
- Flat seam
- Corrugated
- Aluminum
- Treated steel
- Copper

Manufacturers:

- Fabral
- Kylar
- Pac-Clad
- Custom-Bilt Metals
- Wheeling Corrugated

Technical Data:

- Gauges: .022 to .032 aluminum or steel
- Panel width coverage: 12” to 42”

Advantages:

- Lightweight

- Each panel provides large coverage compared to other roofing materials (less laps and joints)
- Variety of colors and styles
- Compatible with other roofing and building materials
- Can be attached to provide high wind resistance
- Moderately priced and moderate front end cost
- May be retro-fitted over existing structures

Disadvantages:

- Detail work is difficult and important
- Experienced sheet metal workers necessary for installation to provide professionally looking and watertight roof system
- Susceptible to aesthetic hail damages
- Susceptible to wind damages when not installed properly
- Steel panels are susceptible to rust or corrosion when dinged, kinked or chipped
- Colors can fade or chalk over time