

GENERAL SLATE ROOF INSTALLATION SPECIFICATIONS

Joseph Jenkins, Inc., 143 Forest Lane, Grove City, PA 16127 USA
Ph: 814-786-9085; Fax: 814-786-8209; Web: josephjenkins.com; slateroofcentral.com

PART 1 — DESCRIPTION OF WORK

A. Contractor will furnish all permits, labor, materials, equipment, apparatus, tools, transportation and services necessary for, and incidental to, the proper installation and completion of a slate roof on the project indicated on the drawings and specified herein. This work will include removing and disposing off-site of existing slate roofing or other shingles, if any; installing approved underlayment; installing new flashings as specified herein; and installing [new or salvaged] roofing slate to cover the entire existing slate roof area, to leave a very long term, damage resistant, weatherproof roof. Note: Contractor may salvage slate to be removed for his/her own stock.

1. Approximate number of squares of slate to be installed is:

2. Areas where flashing is to be replaced (list all pertinent areas such as chimneys, valleys, ridges, plumbing vents, step-flashings, dormer aprons or top-flashings, etc. – add additional lines as needed).

3. Refer to drawings.

B. All roofing work shall be executed such that the building is protected from water penetration.

PART 2 — QUALITY CONTROL

A. Installer of slate shingles shall have at least 10 years experience in the installation of new slate roofing and shall have successfully completed at least three slate roofing projects within the past 5 years of similar scale. Contractor shall use workmen who are trained and experienced in laying slate, installing metal flashing, and all other skills needed to satisfactorily complete the project as specified. Contractor shall keep the building weatherproof, and make every reasonable attempt to complete the project on schedule.

B. Contractor shall make certain that the surfaces to which the roof slates are to be applied are in a suitable condition for this application or that they have been repaired to a condition satisfactory for slates.

C. Contractor shall guarantee all material to be as specified. All work is to be completed in a workmanlike manner according to standard practices. Any alteration or deviation from these specifications involving extra costs will be executed only upon written orders and will become an extra charge over and above the estimate.

PART 3 — DELIVERY, STORAGE, AND HANDLING

A. Deliver materials on manufacturer's unopened skids with labels intact.

B. Store materials under cover, on pallets to avoid water damage, and store rolled goods on end. Comply with manufacturer's recommendations for job-site storage and protection.

C. Do not store materials on existing fire escape or low-slope roofs.

PART 4 — MATERIALS

A. Roofing Underlayment: Underlayment shall be 30#, unperforated asphalt saturated organic felt, 36 inches wide rolls, complying with ASTM D 226, Type 11, to be installed with 1" galvanized roofing nails, or other suitable fasteners, over existing or repaired roof sheathing prior to the installation of the slate roofing.

B. Sheathing Repair or Installation: All roof decking (sheathing) installation, repairs, or replacement will be completed using decking material the same as, or similar to, the existing decking material, but not to include laminated woods of any kind. No plywood roof decking will be used.

C. Nails and Fasteners: All nails, screws, and flashings used for the work shall be galvanically compatible. For installing new slate, hard copper nails will be used not less than 11 gauge, 1.25" long. Alternatively, Type 304 stainless steel roofing nails will be used, not less than 1.25" long. Nail length is dependant upon the thickness of the slate, as follows:

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Slate Thickness//Nail Length: 3/6"-1/4"//1-1/2"; 1/4"//1-1/2"; 1/4"-3/8"//1-3/4"; 3/8"//1-3/4"; 3/8"-1/2"//2"; 1/2"//2"; 1/2"-3/4"//2-1/2"; 3/4"-1"//3".

D. Flashing: All flashing shall be minimum 16 ounce copper (or other material specified in writing and signed by both parties prior to the commencement of the work).

E. Mastic: Asphalt cement shall be non-asbestos fibered asphalt cement complying with ASTM D 4586, designed for trowel application.

F. Slate Hooks: Slate hooks shall be three inches long, solid copper or stainless steel. Standard slate hooks are for use with slate of commercial standard thickness only. Custom slate hooks may be fabricated by the Contractor for use with slates up to 1/2" in thickness. Thicker slates will require the "nail and bib" fastening technique as described in the Slate Roof Bible, 2nd edition, when replacing existing slates in the field of the roof. Such bibs are to be 4 inches by 7 inches (minimum), 16 ounce (minimum) copper or lead coated copper, per ASTM B 101, Type I, Class A. Bend lengthwise in a slightly concave shape prior to inserting. Heavy slates may require two nails for adequate fastening.

G. Cants: Wood cants, where indicated, for starting course of slate shingles shall be minimum 1/4 inch by 1 inch plaster lath or other solid wood, not laminated material. Alternatively, 16 ounce (minimum) copper edging with a built-in cant may be used.

H. Slate:

1. Slate shall be S1 Grade, or comparable, free of defects, with punched rather than drilled nail holes (if 3/16" to 1/4" thick slates). Drilled nail holes are acceptable on slates 3/8" or thicker.

2. All slate shall be from the same quarry source.

3. Slate shingles for new slate roofs shall be [Vermont Semi-Weathering Gray-Green], Grade A, classified S-I in accordance with ASTM C406-00, natural cleft with chamfered edges. All slate shall be hard, dense, sound rock. No broken or cracked slate shall be used. All exposed comers shall be full — no broken comers will be allowed.

4. Slate shall be hard, dense, sound rock of fairly uniform thickness, not less than [3/16"] thick, with square cut edges.

I. Slaters Tools: The following traditional slating tools shall be used for the installation of slate shingles: slate hammers for punching and nailing slate shingles, slate rippers for removing slates already installed, slate cutters for trimming and cutting slate shingles, slaters stakes used with slate hammers that have a cutting shank (for trimming thicker slates), roof brackets for staging the roof, ladder hooks for accessing areas of the roof not staged.

PART 5 — EXECUTION

A. The Contractor shall inspect all surfaces prepared for slating. Surface shall be sound and free of all defects that may cause damage to roofing felt, flashing and slate. Any such defects of surface or decking shall be corrected prior to installation.

B. Details for slate roofing not indicated on Drawings or specified herein shall be discussed with the Architect prior to commencing work.

C. New copper gutters must be installed prior to proceeding with laying of slate above new gutters. To the maximum extent possible, complete masonry restoration work at chimneys, towers, parapet walls, and coping stones prior to installation of new slate roofing in these areas.

D. Slate Installation:

1. Underlayment

a. A double layer (half-lapped) of 30 lb felt underlayment will be installed over all deck sheathing prior to slate installation.

b. Underlayment shall be laid in horizontal layers with joints lapped toward eaves or drains and ends overlapping six inches. Secure along laps, ends, and in field of felt as necessary to properly hold the felt in

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place and to protect the building from water infiltration until covered with slate. All felt shall be preserved unbroken, tight, and whole. Maximum length of exposure for felts prior to slating shall be one month.

c. Contractor will sweep exposed roof deck of dirt and debris and remove any protruding nail heads prior to installation of underlayment.

d. When self-adhesive underlayment is used along eaves, it is to be covered with felt.

2. Slating

a. All standard slates shall be fastened with two [copper 11 gauge] roofing nails, [1 ½" long]; longer, heavier gauge nails will be used as needed on hips and ridges.

b. Eave slates shall be laid to provide a 1.5" projection beyond the furthest extent of fascia or other material at drip edge. Rake edge (gable end) slates shall extend 1".

c. All standard field slates will be installed with a [3" head lap] following chalk lines marking the top edge of each course of slates. Each course shall break joints laterally by a minimum of 3", if possible, with the underlying or overlying course.

d. Slates at the eaves shall be doubled by using a slate starter course that is canted 1/4" to 1/2" (for standard thickness slates) by a solid (not laminated) wood cant strip or with a copper cant built into a minimum 16 ounce copper drip edge. A thicker cant strip will be used for thicker eave-course slates.

e. The first course of slate shall be laid over the slate starter course so that the drip edge of both courses align flush. The starter course shall be laid back side facing up to allow the edge bevel to merge to a point with the edge bevel of the first course (which shall be laid back side facing down, as shall all the other slates on the roof, except the starter course).

f. Slates overlapping sheet metal shall have the nails placed so as to minimize puncturing the metal.

g. Exposed nails are permissible only on the top course of some styles of slate ridge, and where otherwise unavoidable. Any exposed nail heads will be sealed with a lifetime-duration, clear or matching color caulk such as GE Silicon II, or other approved sealant.

h. Slate will be neatly fitted around any pipes, ventilators, and other roof penetrations.

i. Nails shall not be driven in so far as to produce an excessive strain on the slates, and shall instead be driven to a depth such that the nail heads lie within the counter-sunk nail hole and do not rub excessively against the overlying slates.

j. Contractor must make all reasonable efforts to avoid walking on the slates during the installation process. Upon completion, all slate shall be sound, unbroken, un-cracked, whole and clean, showing no exposed roof cement.

k. Individual slates that must be installed in the field of the roof after the installation is complete, such as where a roof bracket had been removed or where a repair has been made, shall be installed using stainless steel or copper slate hooks. Slates thicker than 1/2" may require the "nail and bib" method, rather than a slate hook fastener.

l. Use of nail guns to install slate shingles shall not be permitted. Use of grinders, saws, or other mechanical means to cut and trim roofing slates shall not be permitted unless the sawn edges are dressed after sawing to create a beveled appearance along the sawn edge.

m. In ice-dam prone areas, Contractor will install the slate with an increased headlap along the bottom three feet of the roof, such headlap increase to be not less than one inch. In addition, a membrane may be used in ice-dam prone areas. Such membrane underlayment shall be 40 mils cold applied self-adhering membrane, consisting of 0.004 inch polyethylene film coated on one side with adhesive consistency rubberized asphalt, and with a silicone coated release sheet, complying with ASTM D 1970, or Architect approved alternate.

n. Slates are not to be taken up onto the roof from one pallet at a time, but are to be taken from all pallets simultaneously in order to blend the various pallets uniformly on the roof.

o. Random width slate side-butt joints shall break joints in each course with the underneath course side-butts as near the mid-point of the slates in the course below as possible, and not less than 3" from any side-butt joint underneath. The first course of slates shall also break side-butt joints with the starter course

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side-butt joints by not less than 3".

p. Slates at valleys shall be cut in neat and straight lines. Valley slates are to be cut on the back side of the slate in order to maintain an exposed chamfered slate edge along the valley.

q. Slate shall be installed starting at the eaves and proceeding up to the ridge.

E. Cleaning Up

1. Tools, equipment, surplus materials, slate scraps, and debris resulting from the slate roof installation shall be organized and cleaned up, or removed and disposed of by Contractor, on a daily basis.

2. A dumpster may be used for storage of removed materials.

3. Gutters and roof areas will be cleaned of debris at the end of each work day and upon completion of the work.

4. Dust and dirt may infiltrate into the attic space during installation or removal of roofing slate. Building owner is advised to remove any valuable items from the roof or attic spaces and/or to cover such items with plastic, tarps, or other suitable covering. Contractor will not be held responsible for dust and dirt in attic spaces other than the broom sweep accessible areas as needed.

PART 6 — PAYMENT

An advance payment in the amount of [50%] will be provided to the Contractor at least three weeks prior to the commencement of the work. A progress payment of [25%] will be provided to the Contractor at [50%] completion. The balance of [25%] will be paid upon full and satisfactory completion of the work.

PART 7 — INSURANCE

Contractor will carry Liability Insurance and Workers Comp. Insurance and will provide Certificates of Insurance to Contractee, with Contractee named as Certificate Holder, prior to the execution of any work.

PART 8 — WARRANTY

A. Contractor shall warranty his work, covering both material and labor for defects that may occur, for a period of [ten (10)] years. Repairs or replacement of defective slates or flashing during the warranty period shall be at no cost to the Owner.

B. Approximately one year after completion of the Work, Contractor shall, at no cost to the Owner, inspect the Work and replace all broken, cracked, displaced, or otherwise deteriorated roofing slates in all areas of the new slate roofing.

C. Upon completion, Contractor shall submit a notarized letter to Owner indicating Contractor's warranty terms.

PART 9 — EXTRA MATERIAL

Contractor shall provide for the Owner one square of field slates and approximately 30 starter slates used in the Work as maintenance stock for future repairs, to be placed in storage in a location to be determined by the Owner.