

Technical guidance note: Peg tile roofing

Kent peg tiles have been widely used in Canterbury since the 14th century. Tyler Hill was a major tile producer in the medieval period. Tiles were used, together with thatch, for roofing until the introduction of Welsh slate in the 19th century. They were also extensively used for tile hanging on walls. Peg tiles are characterised by their warm orange-red hues and varied texture that they lend to a roof. Peg tiles were hand made and the drying and firing process led to subtle distortions and cambers creating their characteristic appearance and providing natural ventilation to the roof space. The materials were drawn from local clays and brick earths of Kent, particularly from the Weald and Canterbury. The colours range from red through to orange.



The Kent peg tile is commonly 6"x 10 ½" x 3/8" (254 x 152mm) with two peg holes unevenly spaced from the top edge, a distinctive camber from top to bottom and creasing towards the bottom edge. Traditionally, the holes were punched through by hand but were never aligned horizontally thus enabling the roofer to use alternative positioned peg holes when fixing over the tiling battens to give a good line to the bottom edge of the tiles.

Many attempts were made to regulate the size of tiles the best known of which is the statute of 1447. This statute confirmed that the standard for flat tiles should be 10½ inches by 6¼ inches. Tiles were sold by number and unscrupulous manufactureres were inclined to skim on the dimensions. This size was retained in Acts of George I and George II and has become the standard for peg tiles. The locally produced Kent peg tile did not follow this standard and until the late 19th century they were 9 inches by 6 inches. From the 20th century the tiles were increased to the standard size.

Traditional peg tiles are now available from a number of manufacturers. The use of new peg tiles for repair and extensions to listed buildings and for new buildings is recommended. Second hand peg tiles are a valuable commodity and existing peg tiled roofs are subject to theft and re-sale. The use of new tiles reduces the demand for second hand tiles and introduces a new supply into the equation.

Materials

Battens

Although traditionally split chestnut, oak or softwood were used, modern sawn battens are acceptable but they need to be 38mm x 25mm tanalised softwood (for rafters at 450mm or 600mm centres), selected for straightness and free from decay, knot holes and insect attack, with no length less than 1200 mm and fixed so that the courses on all slopes line up correctly.

Tilt fillet

A substantial tilt fillet should be fitted to eaves for fixing the undercloak. (Two lengths can be run out of a 100 x 50 mm timber to create tilt fillets, which diminish from approximately 30mm to approximately 19mm).

Tiles

All tiles must be 'sound' (sound tiles are those that are sufficiently intact, not cracked, fractured or badly laminated and not damaged around the peg holes).

Bedding mortar

Mortar for roofing works should be 1:1:6 (lime:cement:sand) struck off and pointed as works proceed.

Firestopping to all party walls

Firestopping to party walls is advisable and re-roofing is an ideal time to carry this out, as access is available.

Insulation

Access to the roof void will enable insulation to be installed or upgraded. When using insulation care must be taken to ensure adequate ventilation to the roof voids.

Guttering

All replacement guttering should be new or sound second-hand cast iron to match the original, with all joints sealed, fixed with gutter bolts and adequately supported with the appropriate brackets.

Before final fixing all cast iron rainwater goods should be properly painted.

Lead eaves gutters and down pipes are sometimes encountered and where these require repair or replacement a competent plumber should be contacted or advice sought from the conservation officer.

Facias and soffits

Any decayed or defective timberwork should be replaced in softwood with matching details and properly decorated.

Chimneys

It is advisable to carry out any repairs to chimneys whilst access is available and the opportunity taken to reinstate oversailing courses, pots and other details as appropriate. Rebuilding/repointing of chimneys should be carried out using lime mortar.

Ventilation

It is essential that adequate through ventilation is achieved in the roof space to prevent condensation problems. Adequate ventilation is achieved through peg tiles,

and this may be inhibited by the use of underlays. Where there is any doubt felt underlay should not be used.

A typical specification for retiling peg tile roofs would be;

- 1) Supply and erect all necessary scaffolding, ladders and safety equipment in accordance with current legislation. Allow for all temporary protection to prevent entry of rainwater during the works.
- 2) Strip existing tiles and set aside sound tiles for re-use. Carefully remove all hip, valley and ridge tiles and set aside sound tiles for reuse.
- 3) Strip all old battens and nails from rafters.
- 4) Examine roof structure and take advice on any repairs necessary.
- 5) Clear debris from roof space.
- 6) Fix treated battens at a suitable gauge (normally between 3 inches and 3½ inches, 90 and 101 mm) using 65mm galvanised nails (the gauge may need to be reduced on steeper pitched roofs to ensure that the courses on all slopes run true). Butt joints should be central to rafter and staggered up the roof. Fix treated softwood tilting fillet to eaves.
- 7) Retile slopes using the tiles set aside and additional tiles as required taking care to provide good bonding. Each tile should be hung over the batten with either a timber peg or an alloy nail inserted into the hole selected to give the best line to the tile on the roof. Eaves should consist of a 3/4 tile undercloak with the eaves course bedded over.
- 8) Bonnet hip tiles should be bedded and nailed in place with the bottom edge lining up with the main tile course and with the tiles cut accurately into the hips whilst maintaining a reasonable bond.



- 9) Valley tiles should be laid in loose with tile courses cut into them in a similar fashion to the hip tiles..
- 10) A cut tile course should be used at the ridge and capped with ridge tiles hollow bedded in place with solid bed to at butt and end tiles.. The traditional ridge tiles are a hogs-back or half-round, normally 300mm in length.
- 11) All bedding to hip and ridge tiles should be neatly pointed on completion.

12) Verges and abutments should be full and cut half tiles and not 'tile and a half' specials. Verges should be bedded and neatly pointed. Abutments should incorporate code four lead soakers covered with cut tile fillets bedded and neatly pointed.

13) Dismantle scaffold and clear site on completion.

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