

CHAPTER THREE

ROOF COVERINGS

Syllabus.—Manufacture and characteristics of clay and shale plain tiles, pantiles, Italian, Spanish and interlocking tiles ; eaves, ridge, hip, valley and verge details ; vertical tiling. Concrete tiles, asbestos-cement tiles and corrugated sheets. Stone slating. Shingles. Copper and zinc details.¹

PLAIN TILING

THE subject of plain tiling is introduced on p. 141, Vol. I.

MANUFACTURE OF CLAY AND SHALE PLAIN TILES.—The several processes of tile manufacture are similar to those employed in the production of bricks (see pp. 1-11, Vol. II). These processes are (1) preparation of the earth, (2) moulding, (3) drying and (4) burning.

1. *Preparation.*—The machinery required to reduce the clay or shale to a fine plastic condition depends upon the nature of the material. Thus, a soft plastic clay may be brought to a satisfactory condition by passing it through crushing rolls and a pug mill, whereas hard clays and shales may require to be crushed, ground to a powder in an edge-runner, screened, mixed with water and passed through a pug mill. This machinery is described on p. 2, Vol. II. The material is then soured for the reasons stated on p. 4, Vol. II ; that used for hand-made tiles being sometimes left to mature for at least a year before being used.

2. *Moulding.*—Like bricks, tiles are (a) hand-moulded and (b) machine-moulded.

(a) *Hand-moulding.*—A wood mould, similar to that described for bricks (p. 4, Vol. II), is used. The standard size of a hand-made tile is 10½-in., by 6½-in. by at least ½-in. thick (see E, Fig. 41), and the mould is of these dimensions, plus shrinkage allowance. Both sand-moulding and slop-moulding are carried out. Blocks of the prepared clay, approximately 12-in. by 9-in. by 9-in., are taken as required to the moulder's bench and sliced by means of a taut wire by the boy assistant into *bats* or *clots* which are at least ⅝-in. thick. The moulder takes a bat, sands or waters it, dashes it into the sanded or wet mould and forms the tile in the manner described for brick manufacture (p. 4, Vol. II).

The nibs may be formed in the mould when suitably shaped at one end for the purpose or by bending over projecting pieces formed at the end. If the nibs are of the continuous type (see K, Fig. 41) the mould has one end higher

than the rest of the sides, and when the strike used to level the surface is worked towards it, an increased thickness of clay occurs at the high end and this is consolidated to form the nib.

The two holes are formed by the use of a *punch* consisting simply of a piece of wood in which there are two projecting pins, placed at the required distance apart, which are pressed into the clay. Another device consists of a hinged arm having a specially shaped free end with two projecting pins. Both the nibs and holes are formed when the arm is rotated and the free end is pressed into the raised edge of the clay slab in the mould.

The slab is turned out of the mould on to a sanded board. The set or camber is then imparted by piling six of the moulded slabs with heads and tails alternating on to a three-legged stool or *horse* which is convex-curved to the required radius of the camber. A two-handled wood block, having its lower surface curved to the reverse of the horse, is then brought down several times on to the batch. The cambered tiles are then stacked and dried. Alternatively, the slabs from the mould are stacked to a height of about 2-ft. on a *pallet* consisting of 3-ft. long laths spaced at intervals and nailed to the concave-curved top edges of two end cross-bearers which are about 13-in. long. The stack is weighted with a couple of bricks, and the tiles gradually assume the desired shape.

Special tiles, such as purpose-made hip and valley tiles and bonnet hip tiles, are usually hand-moulded.

(b) *Machine-moulding.*—Tiles made by machinery are either wire-cut or pressed.

Wire-cut tiles, like bricks of this class (p. 3, Vol. II), are produced by a pug mill or auger having a die or mouthpiece similar to that shown at A, Fig. 1, Vol. II, but with a cross-section conforming to that of tiles. A continuous thin band of clay is extruded through the die and passed over rollers to the cutting table where it is cut transversely by wires spaced at tile-length apart in a frame. Nibs are produced by a special attachment on the auger which may take the form of an indented roller fixed in front of the mouthpiece, the nibs being formed at intervals on the extruded column of clay. Nail holes may be formed

¹ Asphalt covered flat roofs are detailed in Vol. IV.