

Lighter weights than the above are often adopted in cheap work, and it is not uncommon to find that for such work 5-lb. lead is employed for flats.

As lead weighs 710-lb. per cub. ft., it follows that the thickness of 1-lb. lead = $\frac{12}{710} = 0.017$ -in., and therefore the thickness of the above weights is the following bracketed figures: 3-lb. (0.051-in.), 4-lb. (0.068-in.), 5-lb. (0.085-in.), 6-lb. (0.102-in.), 7-lb. (0.119-in.) and 8-lb. (0.136-in.).

TERMS.—The following terms are used in plumbing:—

Bossing means “working up” and is applied to the labour in dressing lead to various shapes when forming rolls, drips, cesspools, etc., by means of the bossing stick and other tools described on p. 156. Care must be taken to maintain a uniform thickness of lead when performing this operation.

Burning-in is the method which is sometimes adopted to secure the edges of lead coverings of projecting stone members. A groove or *raglet* is formed in the stonework (see A, Fig. 74), the edge of the lead is scraped clean and turned into it, and secured by molten lead which is poured into the raglet and afterwards consolidated or *caulked* by using the caulking tool shown at s, Fig. 76. The lead is poured down grooves formed in a narrow board (which rests on edge upon the cornice and is placed against the face of the parapet) and delivered into the raglet; the hot lead heats the turn-in of the covering and unites with it. This method is not now commonly employed owing to the difficulty experienced in raising the temperature of the edge of the lead covering to that required to effect complete unity between it and the molten lead, and the method adopted for fixing cover flashings to brickwork is often preferred, *i.e.*, wedges are driven in at about 1-ft. intervals and the joint is afterwards pointed with mastic or cement mortar (see below and p. 146).

Solder is an alloy of lead and tin, and used by the plumber to joint pieces of lead and form joints between lead pipes, etc.; this operation is called *soldering*. *Coarse* or *plumbing solder* is used for *wiped joints* (see p. 152) and consists of 3 parts lead and 1 part tin; *fine solder*, used for finer work, is a mixture of 1 part lead and 2 parts tin; *ordinary solder* is a mixture of lead and tin in equal parts and is used for forming *copper-bit joints* (see p. 153). Coarse solder is either heated in a melting or solder pot (U, Fig. 76) and poured on the joint by means of a ladle (M, Fig. 76), or it is cast into narrow strips which are about 12-in. by 1½-in. by 1-lb. and in this form the solder is applied to the joint by using the blow-lamp (A', Fig. 76) to melt the strip.

Lead Burning or Welding.—This is the process of uniting by heat (fusing) pieces of lead in which gases (such as oxy-acetylene, oxy-coal gas, etc.) are utilized and special blow-lamps employed. It is a method which has been developed in recent years and used for certain purposes as a substitute for soldering.

Nails and Nailing.—The nails used for fixing leadwork to wood are of copper, 1 to 1½-in. long, with clout (flat) heads. The term *close nailing* is applied when

the nails are at from 1 to 3-in. intervals; in *open nailing* the nails are spaced at from 3 to 8-in. (sometimes 12-in.) apart.

Soakers are thin pieces of lead (not more than 4-lb.) which are placed between slates. The size and shape varies, thus the soakers described on p. 150 (see c and M, Fig. 73) are 7-in. wide, bent at right angles with an upturn of 3-in. and a length which varies in accordance with the length of the slates, whilst those described on p. 137 are square. They are either nailed to the boarding (at their heads) or the tops are turned over the slates. Only light lead is used for soakers to prevent the tilting or riding of the slates.

FLASHINGS.—These are narrow pieces of lead which are required at the intersection between vertical faces of walls or framing and pitched roofs, flats, gutters, etc. They are classified into:

(1) *Horizontal Cover Flashings*, which are usually 6-in. wide strips having their upper edges turned 1-in. into the raked-out joint of the brickwork (or raglet formed in the stonework) and the lower edges lapped over and covering the *upturn* or *upstand* (vertical portion) of the lower pieces of lead (see Figs. 71 and 72, and p. 146).

(2) *Apron Flashings*, which are provided at the front of chimney-stacks, dormers, etc., and are from 8 to 12-in. wide; the lower portion is dressed over the slates and the upturn is let 1-in. into the raked-out joint or raglet (see A, B, L and O, Fig. 73, and p. 148).

(3) *Stepped Cover Flashings*, which are from 6 to 8-in. wide and have their upper edges cut into a series of steps; the horizontal edge of each step is turned 1-in. into the raked joint. They are fixed at the sides of brick chimneys, gable walls, etc. (see A, B, F, G and N, Fig. 73, and p. 150).

(4) *Raking Cover Flashings*, which are used in lieu of (3) when the walls are of stone. The upper edge of the flashing is let 1-in. into a raglet formed parallel to the rake of the roof and this top edge is therefore not stepped (see p. 150).

Flashings are in lengths cut across the width of the roll and the maximum length therefore varies from 7 to 9-ft.; they are secured along their upper edges by lead wedges.

Lead Wedges are tapered pieces of lead of the size and shape as shown at O, Fig. 72. They are made either (a) by running molten lead into a mould and cutting the tapered strip into short pieces when cool (such are called cast lead wedges) or (b) by folding pieces of scrap sheet lead and beating them into shape. They are used to fix flashings and are driven in between the turn-in of the flashing and the upper edge of the joint. In the case of horizontal and raking cover flashings, the wedges are driven in at about 1-ft. intervals—18-in. maximum (see B, O and Q, Fig. 71); one or two are provided at each step of a stepped flashing (see A, B and F, Fig. 73). The raked-out joint between the wedges is pointed with either cement mortar or mastic. The section at N, Fig. 72 shows a wedge in position.

If used to secure flashings in stonework in lieu of burning-in (see above),