

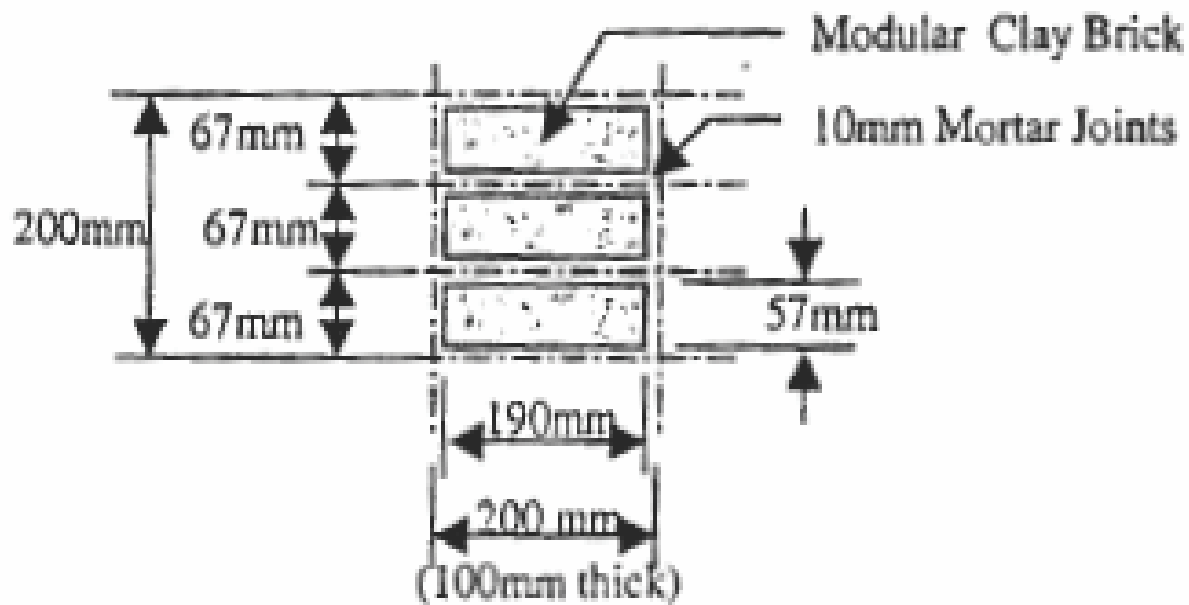
**FIGURE 9.1** Masonry clay units.

**TABLE 9.4** Brick Sizes, Costs, and Quantities<sup>a</sup>

Name	Nominal size (mm) T × H × L	Specified size (mm) T × H × L	No. bricks/m <sup>2</sup>	m <sup>3</sup> of mortar/1000 bricks (waste included)		Cost/1000 bricks	
				10 mm joint	13 mm joint	Face brick (\$)	Brick veneer (\$)
Modular	100 × 67 × 200	90 × 57 × 190	73.66	0.29	0.37	315–350	350
Economy	100 × 100 × 200	90 × 90 × 190	48.43	0.32	0.41	420–525	475
Engineer	100 × 80 × 200	90 × 70 × 190	60.60	0.30	0.39	288–475	335
Jumbo	150 × 100 × 300	140 × 90 × 290	32.29	0.67	0.87	1100	1250
Norwegian	100 × 81 × 300	90 × 71 × 290	40.36	0.42	0.53	500–700	570
Norman	100 × 67 × 300	90 × 57 × 290	48.44	0.40	0.51	410	735
Roman	100 × 51 × 300	90 × 40 × 290	64.58	0.38	0.48	410	760
SCR	150 × 67 × 300	140 × 57 × 290	48.43	0.61	0.79	410	900
Utility	100 × 100 × 300	90 × 90 × 290	32.29	0.44	0.56	915	1000

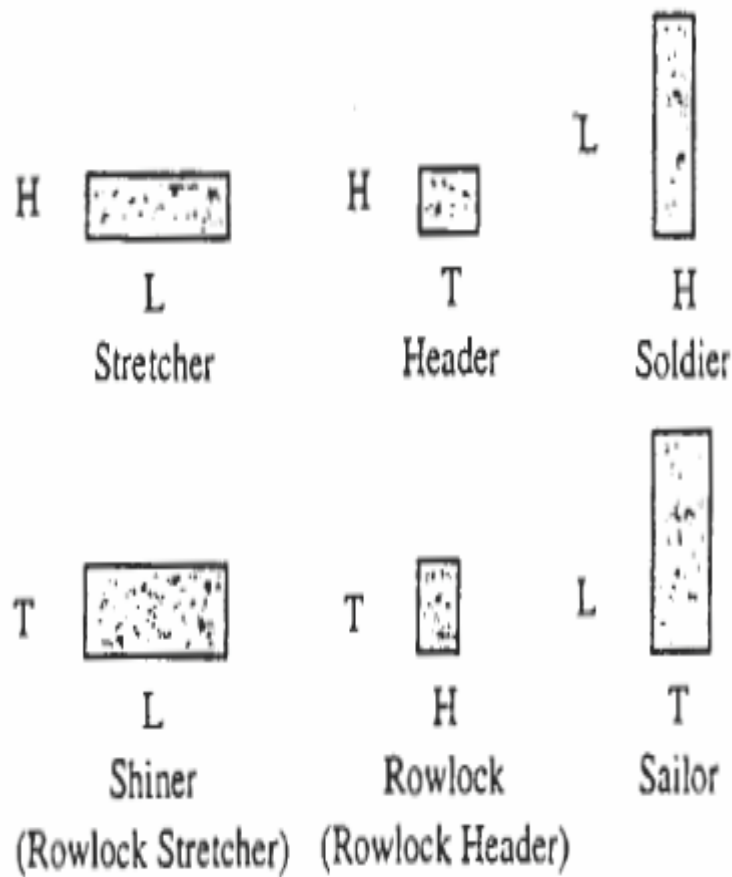
<sup>a</sup> Mortar quantities based on 10 mm mortar joints and running bond patterns. Brick quantities based on single-wythe walls with 10 mm joints and running bond pattern.

Source: Means, 1999.

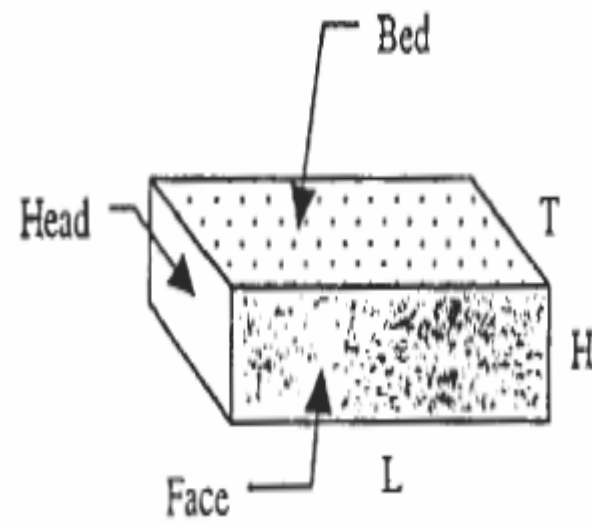


Modular Clay Brick  
 Nominal Size of 100 x 67 x 200 mm  
 Specified Size of 90 x 57 x 190 mm

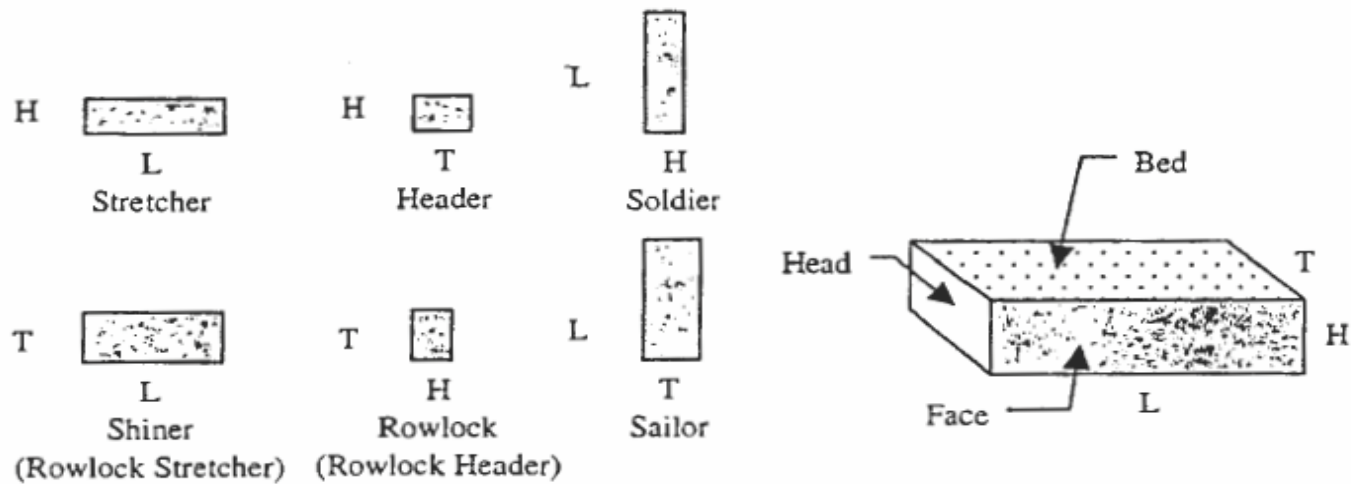
**FIGURE 9.2** Modular clay bricks.



(a) Brick Orientations

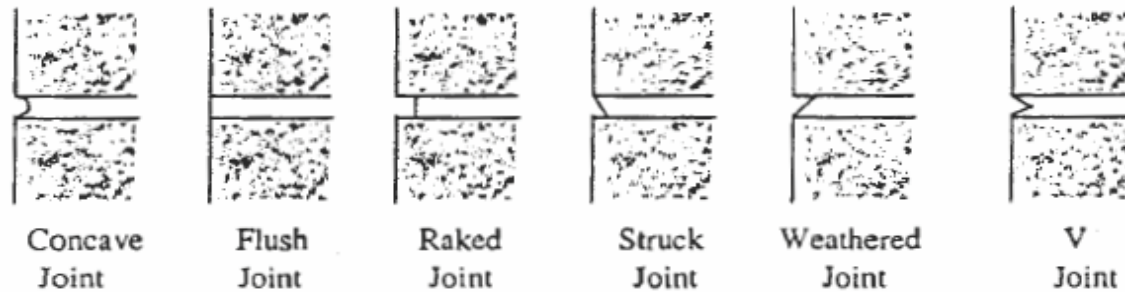


(b) Surfaces of a Brick



(a) Brick Orientations

(b) Surfaces of a Brick



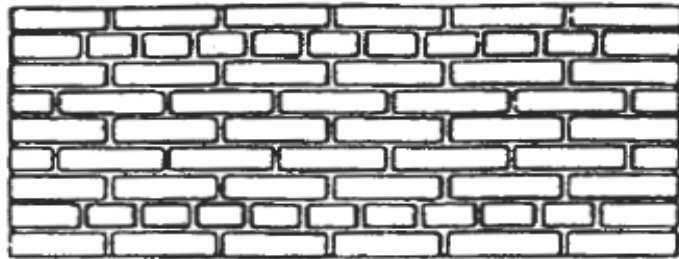
(c) Mortar Joints

**FIGURE 9.3** (a) Brick orientations; (b) surfaces; and (c) mortar joints.

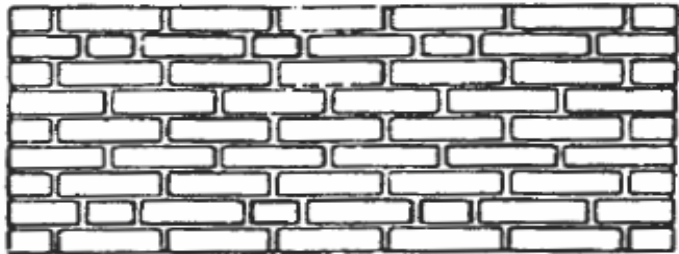
**TABLE 9.7** Orientation Factors for Calculating Standard Brick Quantities<sup>a</sup>

Orientation	Description	Factor added to quantities in Table 9.4 (%)
Header	W × H exposed	+100
Rowlock	H × W exposed	+100
Rowlock Stretcher	L × W exposed	+33.3
Soldier	H × L exposed	0
Sailor	W × L exposed	-33.3

<sup>a</sup> Based on Table 9.4 using stretcher orientations.



**Common bond**  
Full headers every 8th course



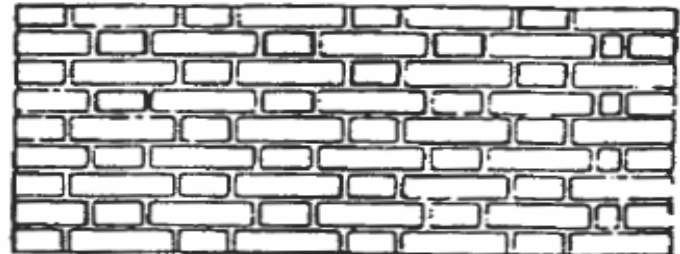
**Common bond**  
Flemish headers every 8th course



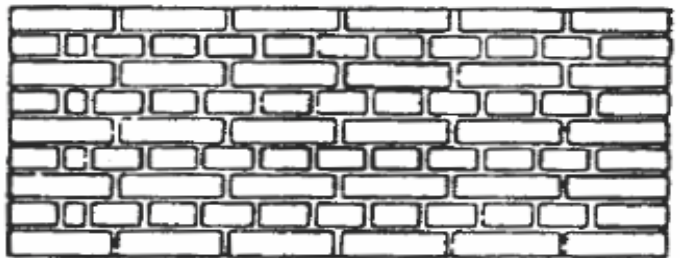
**Stack bond**



**1/2 bond      Running bond      1/2 bond**



**Dutch corner      Flemish bond      English corner**



**English corner      English bond      Dutch corner**

**FIGURE 9.4** Typical bond patterns. (From Kolkoski, 1988.)

**TABLE 9.8** Bond Factors for Calculating Standard Brick Quantities<sup>a</sup>

Bond type	Description	Factor added to quantities in Table 9.4 (%)	Waste factor (%)
Common	Full header every fifth course	20.00	4
	Full header every sixth course	16.70	
	Full header every seventh course	14.30	
English or English Cross	Full header every other course	50.00	8–15
	Full header every sixth course	16.70	
Dutch or Dutch Cross	Full header every other course	50.00	8
	Full header every sixth course	16.70	
Flemish	Full headers every course	33.30	3–5%
	Full headers every sixth course	5.60	

<sup>a</sup> Based on running bond given in Table 9.2. Add an extra 10–15% bricks for cutting waste unless masonry saw is used.

Source: Means, 1999.