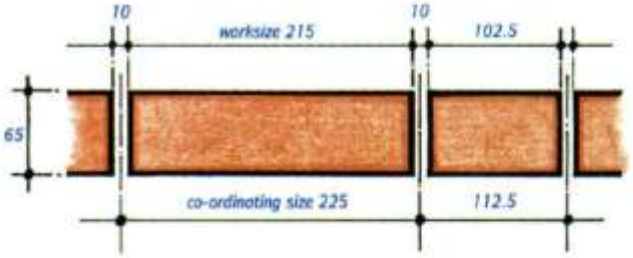
# GET IT RIGHT
## Setting-out brickwork

One of the main purposes of setting out brickwork is to create a matching and balanced appearance of bricks, particularly at reveals on either side of door and window openings and end of walls.
In this 'Get it Right' only stretcher bond, also known as half bond, is considered, although the basic principles will apply whatever bond it used.

**Co-ordinating Size.**
Brickwork should be set-out before the bricklaying begins using as a unit dimension the co-ordinating size of the brick, i.e. one brick length plus one nominal 10mm mortar joint.
The mortar joint acts as the buffer zone and will be adjusted to suit the brick size. However, for 215mm bricks the co-ordinating size is said to be 225mm.

**DO NOT set-out using the average actual size of the bricks as first obtained.**




**Design**
Wasteful cutting can be avoided and brickwork appearance enhanced if the overall lengths and heights of walls and door and window openings are all multiples of the brick unit + 10mm joint size.

The following table showing horizontal brickwork dimensions will assist in achieving this objective. A more extensive table can be found on our web-site.

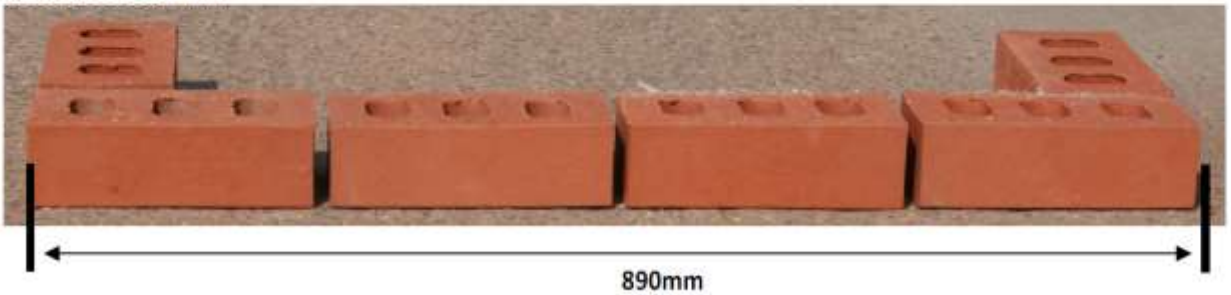
**Table 1 - HORIZONTAL BRICKWORK DIMENSIO**

| Number of bricks | | CO + joint | CO (Coordinating Size) | CO - joint |
|---|---|---|---|---|
| | ½ | 122.5 | 112.5 | 102.5 |
| 1 | | 235 | 225 | 215 |
| | 1½ | 347.5 | 337.5 | 327.5 |
| 2 | | 460 | 450 | 440 |
| | 2½ | 572.5 | 562.5 | 552.5 |
| 3 | | 685 | 675 | 665 |
| | 3½ | 797.5 | 787.5 | 777.5 |
| 4 | | 910 | 900 | 890 |
| | 4½ | 1022.5 | 1012.5 | 1002.5 |
| 5 | | 1135 | 1125 | 1115 |
| | 5½ | 1247.5 | 1237.5 | 1227.5 |
| 6 | | 1360 | 1350 | 1340 |
| | 6½ | 1472.5 | 1462.5 | 1452.5 |
| 7 | | 1585 | 1575 | 1565 |

| Number of bricks | | CO + joint | CO (Coordinating Size) | CO- joint |
|---|---|---|---|---|
| 34 | | 7880 | 7850 | 7840 |
| | 34½ | 7772.5 | 7762.5 | 7752.5 |
| 35 | | 7885 | 7875 | 7865 |
| | 35½ | 7997.5 | 7987.5 | 7977.5 |
| 36 | | 8110 | 8100 | 8090 |
| | 36½ | 8222.5 | 8212.5 | 8202.5 |
| 37 | | 8335 | 8325 | 8315 |
| | 37½ | 8447.5 | 8437.5 | 8427.5 |
| 38 | | 8560 | 8550 | 8540 |
| | 38½ | 8672.5 | 8662.5 | 8652.5 |
| 39 | | 8785 | 8775 | 8765 |
| | 39½ | 8897.5 | 8887.5 | 8877.5 |
| 40 | | 9010 | 9000 | 8990 |
| | 40½ | 9122.5 | 9112.5 | 9102.5 |

*Extract from Ibstock's Horizontal brickwork dimensions tables- 215mm bricks*

For example, if a span of brickwork is required to encompass 4 whole bricks between 2 openings, a mortar joint is not needed at either end, therefore the co-ordinating size measurement is 900mm ( 4 brick lengths plus 4 x10mm mortar joint – refer to dimensions tables if required). Remove one 10mm joint, the span would then be set out to 890mm.




The bricks should be spaced out to fit the co-ordinating space therefore the mortar joints will be adjusted accordingly.

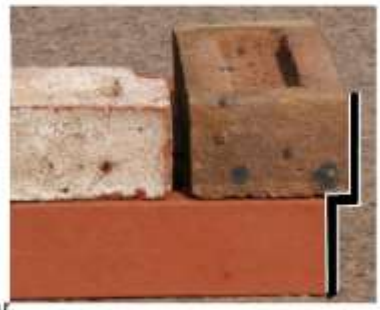
**Tolerances**

BS EN 771-1 requires that the dimensions of a clay masonry unit shall be declared by the manufacturer and also which tolerance category the mean values fulfil. (Information on brick tolerances can be found in our product Portfolio and on our web-site).
It is important to understand that bricks complying with the Standard have varying shape characteristics depending on the method of manufacture.
When using different products in the same wall, i.e. wire-cut products at ground level changing to stock bricks higher up, the chances are they will be classified to different tolerances.
If the guidelines on setting out are followed this should not cause any problem, however if a rigidly measured 10mm mortar joint is used there will be inevitable problems with perpends running out of plumb.

Courses set-out with 10mm mortar joints.

start point

Perpends gradually runr



Result –overhang at end of course.

Courses set-out to a co-ordinating size with varying mortar joints.

start point

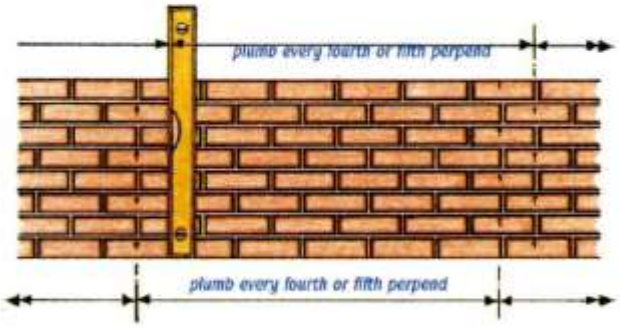
Perpends remaining central tr

Result - neat finish at end of course.

**Before laying, blend units from each product type so that the overall appearance of the finished work is uniform and without patches or bands of colour. This will also help to blend any variations in size.**

**Perpends**

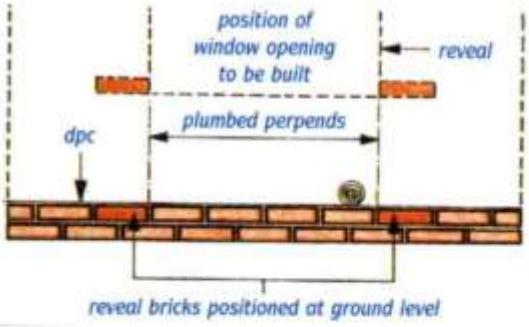
Perpends are the positions of vertical joints between the bricks (not the vertical joints themselves).
Their location should be decided at ground level. The verticality of perpends is visually important and the plumbing of every fourth or fifth and the 'eyeing out' in between will produce satisfactory results.



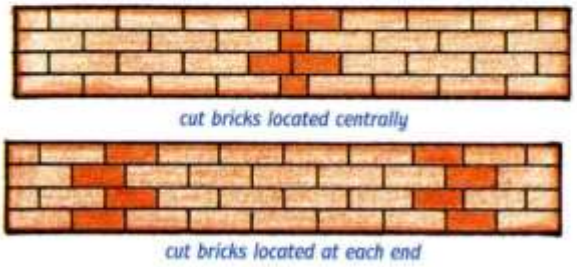

The same perpend in each course must be plumbed and suitably marked.

## Reveals

These are the sides of window and door openings and the position of the reveal brick should be identified when setting out the first few courses. This ensures unbroken perpends for the full height of the wall.



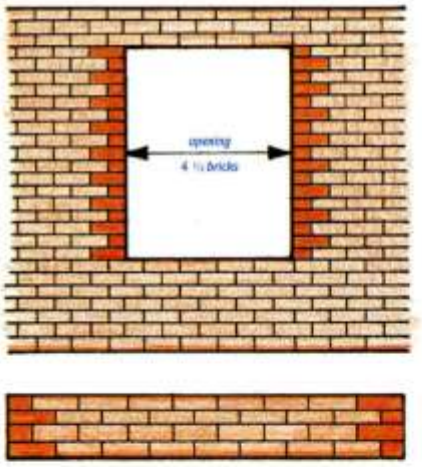

## Broken Bond




This is the introduction of cut bricks into a length of wall which, if properly considered, will maintain satisfactory appearance and achieve a minimum quarter bond.
Where short lengths of brickwork are not full brick or half brick dimensions, broken bond is inevitable.

## Reverse Bond

This is where the end bricks in a given course are showing a stretcher face at one end of the panel and a header face at the other.
It can also apply at either side of an opening containing a half brick size dimension in its width and where broken bond and brick cutting may be considered unacceptable.
It is unlikely to be acceptable if reveal bricks of a contrasting colour are used as a decorative feature.

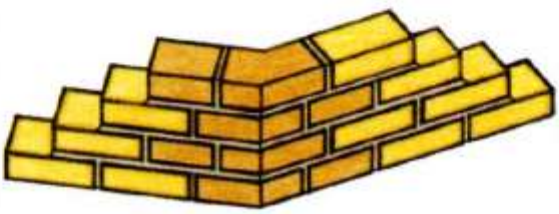



## Angles

Walls which include angle bricks should be set out to the face side as with any facework. The use of squints will maintain half bond.
Longer angle bricks (often referred to as dog-legs) will also maintain half-bond but the shorter ones will involve some cutting of the standard brick to maintain bond.

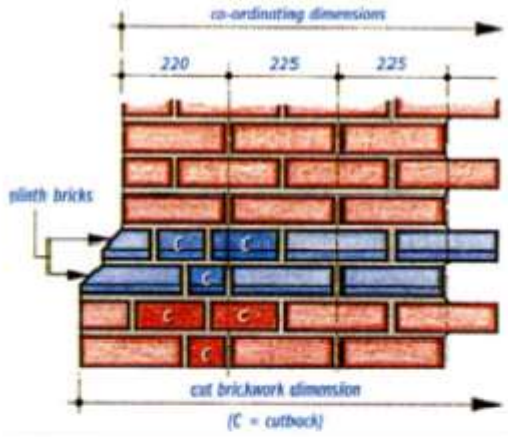
External angle using squint bricks

Angle using external angle bricks



## Plinths

Stepped plinth courses at the base of a wall will increase the wall length externally and may result in a non co-ordinating dimension. The setting out dimension should therefore be the brickwork above the plinth courses so that any cutting to accommodate the increased length is in the plinth and lower courses only.




## Copings & Cappings

Special thought must be given to fixing a line and pins when placing a course of copings or cappings.
It is good practice to consider the most obvious 'sight line' or side most likely to be seen. As the bricks will vary in size the favoured edge or arris of the course being laid will be the 'trued up' edge.
Where copings or capping are to be viewed from both sides, some selection of units to a common size will be necessary.