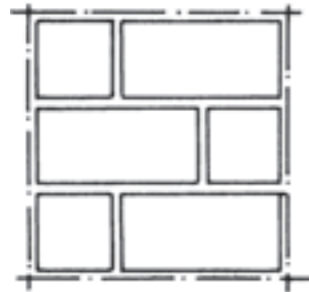


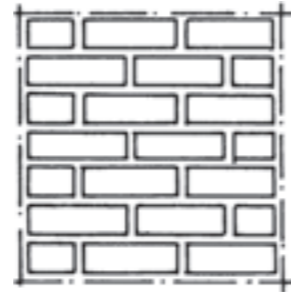
CONCRETE MASONRY WALLING

▶ PRINCIPLE DIFFERENCES BETWEEN BLOCKWORK AND BRICKWORK

There are many differences between blocks and bricks and the way they are used.



3 courses, containing 4½ blocks



7 courses, containing 17½ bricks

Number of blocks and bricks in a 600 mm building module

Characteristic

Size

Block

Nominal size is 400 mm x 200 mm x 200 mm. Actual size is 390 mm x 190 mm x 190 mm. Specials are made at quarter, half, and three quarter length, plus other shapes. The range of blocks with a nominal width of 200 mm is referred to as the 200 mm series. Less commonly used are the 100 mm, 120 mm, 150 mm and 300 mm series.

Brick

Traditional (actual) size is 230 mm x 110 mm x 76 mm. Nominal size is not quoted for bricks. There are many special brick shapes.

Material and Dimensional Variation

Concrete is a relatively stable material. Concrete blocks are formed in steel moulds. The size of individual units can be controlled to within small tolerances.

Clay can undergo shape changes during manufacture. The size of individual units can vary considerably. Tolerances are measured by placing twenty units together.

Mortar

Concrete masonry units shrink, so the mortar must avoid shrinkage. Sand used in mortar should be clean and sharp, such as clean pit sand, masonry sand or plasterer's sand.

Clay masonry units tend to expand, so the mortar can undergo shrinkage. "Brickies loam" contains clay particles that cause shrinkage.

Mortar Joints

Normally laid with face shell bedding only (no web), continued up the perpend joints.

Laid on a full bed of mortar with a full perpend.

Control Joints

Shrinkage of concrete masonry walls after construction necessitates control joints to prevent cracking.

The expansion of clay necessitates expansion joints.

Grout Filling and Reinforcement

'Reinforced masonry' (block + grout + reinforcing rods) can be created with concrete blocks due to their size and hollow form. Such increased strength caters to the construction of large external wall panels, lintels, retaining walls, swimming pools etc.

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▶ BLOCK CODING SYSTEM

Because of the wide range of block sizes and "specials" produced, the Concrete Masonry Association of Australia (CMAA) introduced a common coding system. Although there are some variations between companies, a particular size and shape of block can be ordered by the same code number.

The principle of the system is that the first two numbers of the code number refer to the width of the block, i.e., 20.01 is in the 200 series (200 mm nominal width) and 15.02 is in the 150 series (150 mm nominal width).

The numbers following the decimal point refer to the length on other special features of the block. Thus, in the above examples, 20.01 is a standard block (400 mm nominal length) and 15.02 is a ¾ length block (300 mm nominal length).

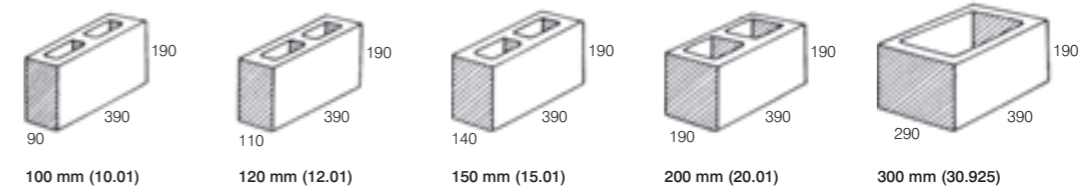
Other examples of the code system are:

- » 20.03 is a ½ length block
- » 20.04 is a ¼ length block
- » 20.12 is a lintel block
- » 20.20 is a knock-out bond beam block

These are all blocks in common usage and generally available everywhere. However, while the coding system is the same in all areas, the range of blocks available as stock items is not necessarily the same because of different local building techniques.

The range of blocks generally available is illustrated on the following pages. Dimensions are in mm. Note that these diagrams are for illustration purposes only, and are not necessarily available at all locations. Availability of block types should always be checked.

The 200 series block is by far the most commonly used, and the 20.01 represents well over half of total block usage. The 200 series is used principally for single-leaf external walls and retaining walls. Most houses in north Queensland are built with 200 series blockwork. In most cases, 200 series blockwork is reinforced.



Range of standard block widths

▶ 100 MM SERIES (90-MM-THICK WALLS)

