

PART A

Chapter 3

Common Masonry Units

This chapter describes the most common masonry units and the coding system commonly used to describe and specify them.

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- 3.2 NATIONAL METRIC CODING**
- 3.3 CATALOGUE OF MASONRY UNITS**

3.1

COMMON MASONRY UNITS

Concrete masonry units, for use in walls, fall into two broad categories – concrete bricks and hollow concrete blocks. Other concrete units such as concrete segmental pavers, retaining-wall blocks and landscaping units are also produced, but are not dealt with in any detail in this manual.

Concrete bricks are usually 76 mm high x 230 mm long x 110 mm wide, the same shape as the more traditional clay bricks. They are commonly produced 'on end' in concrete block machines that have a mould cavity at least 230 mm high. Such bricks may include a frog or depression along the length of the brick, which assists laying and bond, or may be solid. Bricks which are produced 'on edge' or 'on the flat' in paver machines or smaller block machines will not include a frog.

Concrete blocks are usually:

- 90, 119, 162 or 190 mm high
- 90, 190, 290 or 390 mm long
- 90, 110, 140, 190 or 290 mm wide, (thickness of masonry leaf).

The longer units usually have two (sometimes one, sometimes three) cores extending vertically through the block. Because the cores are slightly tapered, the blocks are manufactured upside down in the machine and, when laid in the wall, provide an enlarged area on which to place the mortar. Many other shapes known as 'fittings' and 'fractions' are produced for corners, openings, sills, bond beams, retaining walls and landscaping applications.

The advantages of hollow concrete blockwork over brickwork are:

- The larger units lead to more-economical construction
- The large cores enable hollow concrete blockwork to be grouted and reinforced to resist lateral wind, earthquake, fire and earth loads, with strength capacities approaching those of comparable insitu concrete.



3.2

NATIONAL METRIC CODING

The Concrete Masonry Association of Australia has established a national metric coding for all units manufactured by its members. This accounts for approximately 90% of all concrete masonry manufactured within Australia. The coding system standardises the dimensional descriptions of masonry units. This allows a designer to specify any unit by number and to be certain that it can be identified correctly anywhere within this country.

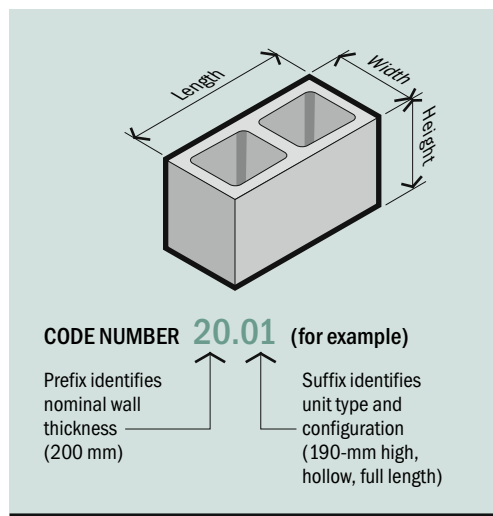


Figure 3.1 Coding System

KEY TO PREFIX NUMBERS

Block Width (mm)	Number
40	50
76	75
90	10
110	12
140	15
190	20
290	30

Note:

With the exception of 50 and 75, the prefix numbers are derived by adding 10 mm for the mortar joint width to the unit width and dividing by 10.

KEY TO SUFFIX NUMBERS

Block height (mm)	Block type	Block Length			
		Full (390 mm)	3/4 (290 mm)	1/2 (190 mm)	1/4 (90 mm)
190	Hollow	01	02	03	04
190	Solid*	31	32	33	34
90	Hollow	71	72	73	74
90	Solid*	83	84	85	86

* Some manufacturers use an alternative method of designating solid units.

The following pages include diagrams of most of the concrete masonry units produced in Australia

Notes:

- 1 Segmental pavers and retaining-wall units are not included in this catalogue.
- 2 The suffix (NC) indicates units that are not as common as the others and are not produced in all parts of Australia. It would be prudent for a designer to check the availability with the suppliers before specifying these units.
- 3 The dimensions shown are the external dimensions of the masonry unit, which makes allowance for the mortar joints.

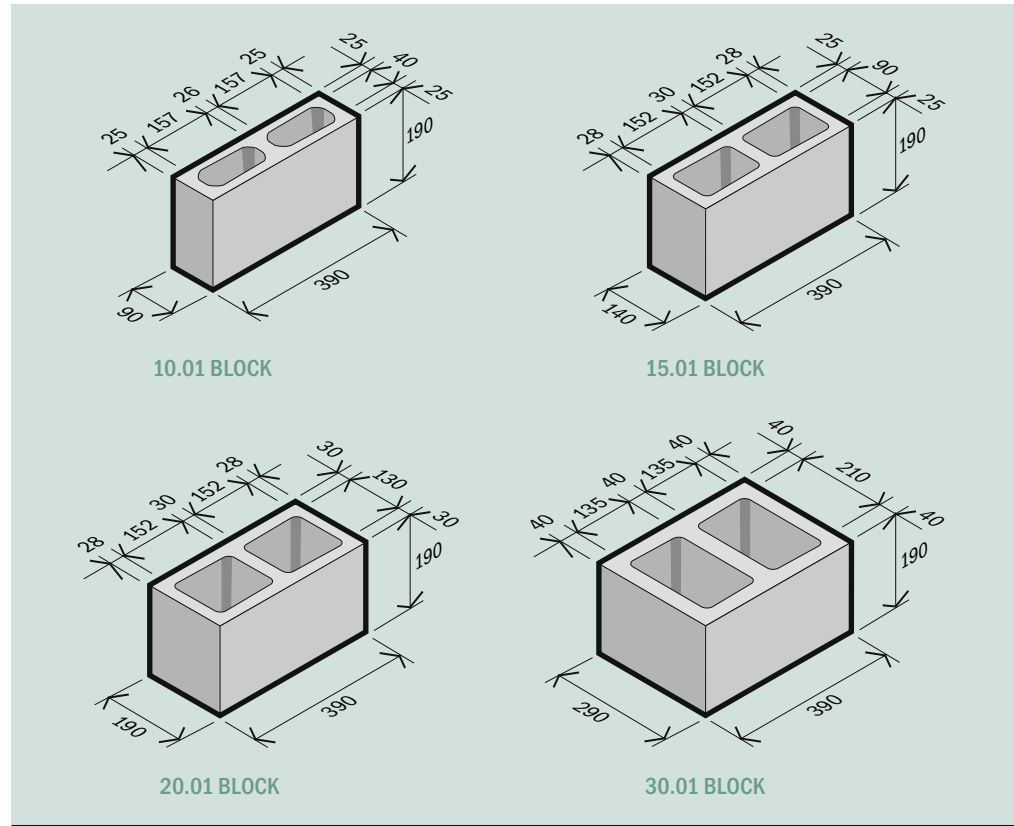


Figure 3.2 Typical Dimensions of Cores

These dimensions will vary from manufacturer to manufacturer

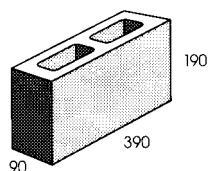
INDEX OF UNITS

100 Series	90 mm thick walls
120 Series	110 mm thick walls
150 Series	140 mm thick walls
200 Series	190 mm thick walls
300 Series	290 mm thick walls
Screen Blocks	Decorative walls

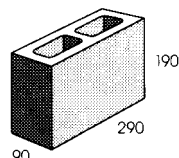
100 SERIES

90 mm thick walls

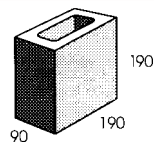
PLAIN FACE – FULL HEIGHT



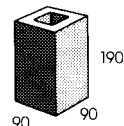
10.01
Hollow – full length



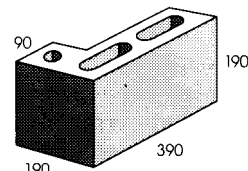
10.02
Hollow – three quarter



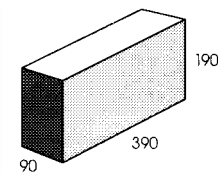
10.03
Hollow – half



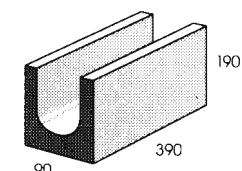
10.04
Hollow – quarter



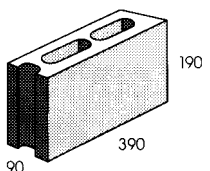
10.25
Hollow – corner return



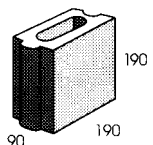
10.31
Solid – full length



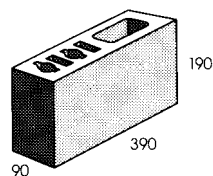
20.12
Lintel Block



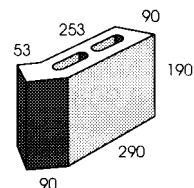
10.09 (NC)
Hollow – control joint



10.10 (NC)
Hollow – control joint half

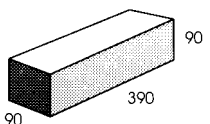


10.11 (NC)
Hollow – universal

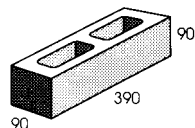


10.739 (NC)
Hollow – 45° squint

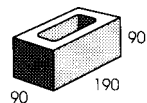
PLAIN FACE – HALF HEIGHT



10.83
Solid – full length

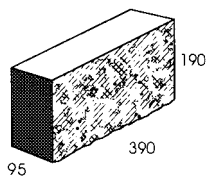


10.71 (NC)
Hollow – full length

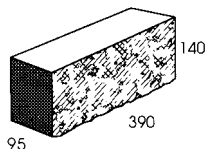


10.73 (NC)
Hollow – half

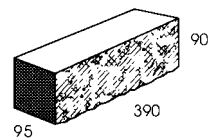
SPLIT FACE RANGE



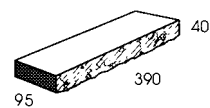
10.101
Solid – full height



10.105
Solid – three quarter height



10.109
Solid – half height



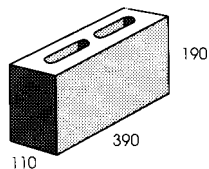
10.117
Solid – capping

NC indicates units which are not as common as others and it would be prudent to check with manufacturer before specifying them. For Fire Rated Blocks refer to company test data and test results.

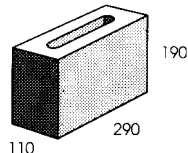
120 SERIES

110 mm thick walls

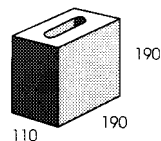
PLAIN FACE – FULL HEIGHT



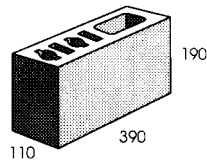
12.01 (NC)
Hollow – full length



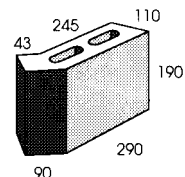
12.02 (NC)
Hollow – three quarter



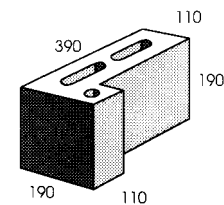
12.03 (NC)
Hollow – half



12.11 (NC)
Hollow – universal

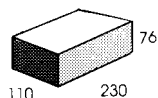


12.739 (NC)
Hollow – 45° squint

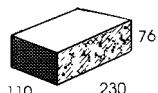


12.25 (NC)
Hollow – corner return

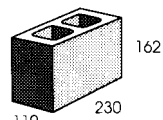
BRICKS AND MODULAR BLOCKS



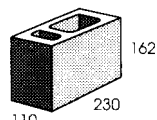
120.715
Standard brick



120.716
Split face brick



STANDARD
Hollow – double brick height



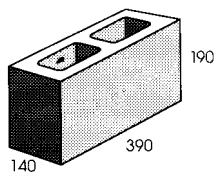
BREAKAWAY
Hollow – double brick height

NC indicates units which are not as common as others and it would be prudent to check with manufacturer before specifying them. For Fire Rated Blocks refer to company test data and test results.

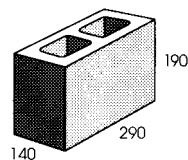
150 SERIES

140 mm thick walls

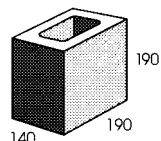
PLAIN FACE – FULL HEIGHT



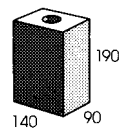
15.01
Hollow – full length



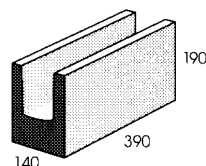
15.02
Hollow – three quarter



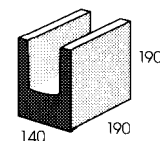
15.03
Hollow – half



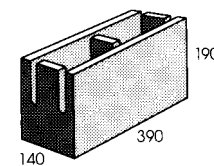
15.04
Hollow – quarter



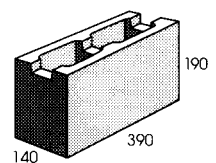
15.12
Lintel



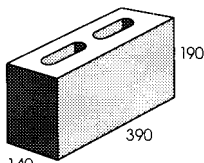
15.13 (NC)
Half lintel



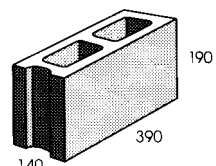
15.20
Knock-out bond beam



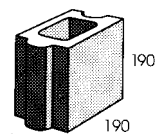
15.42
Channel



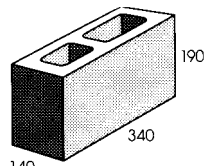
15.709/15.801
Thick wall



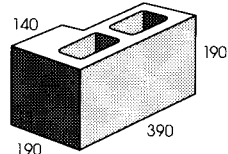
15.09 (NC)
Hollow – control joint



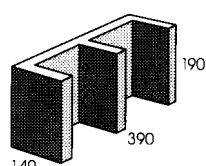
15.10 (NC)
Hollow – control joint half



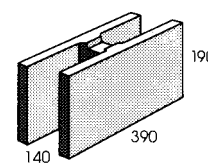
15.22 (NC)
Hollow – seven-eighths closure



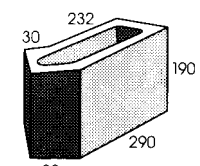
15.25 (NC)
Hollow – corner return



15.45 (NC)
Clean-out stretcher

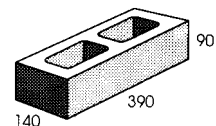


15.48 (NC)
'H' block

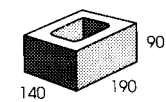


15.739 (NC)
Hollow – 45° squint

PLAIN FACE – HALF HEIGHT



15.71 (NC)
Hollow – full length



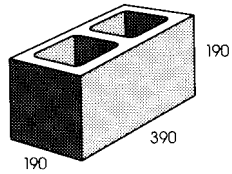
15.73 (NC)
Hollow – half

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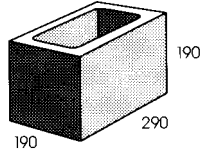
200 SERIES

190 mm thick walls

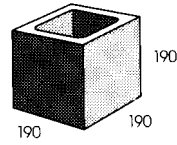
PLAIN FACE – FULL HEIGHT



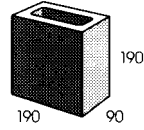
20.01
Hollow - full length



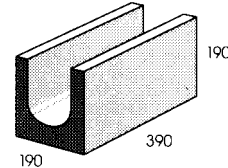
20.02
Hollow - three quarter



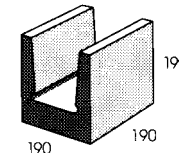
20.03
Hollow - half



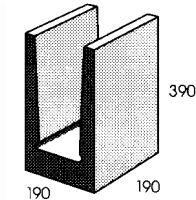
20.04
Hollow - quarter



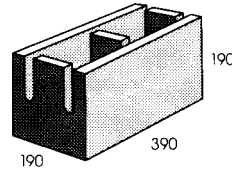
20.12
Lintel



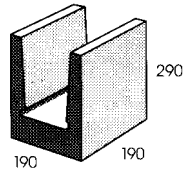
20.13
Half lintel



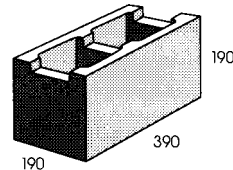
20.18
Deep lintel



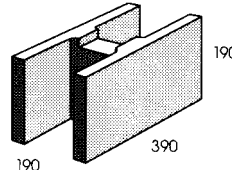
20.20
Knock-out bond beam



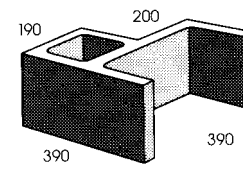
20.26
Three-quarter lintel



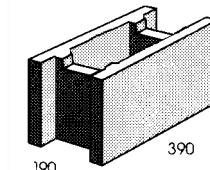
20.42
Channel



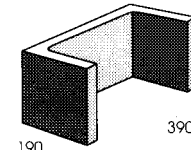
20.48
'H' block



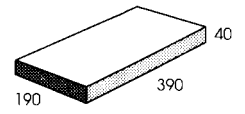
20.60
Bonded pier



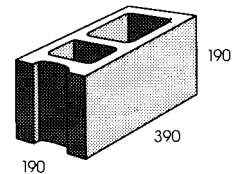
20.91
Double 'U' retaining wall block



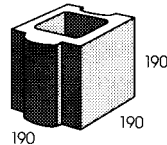
20.96
Pier



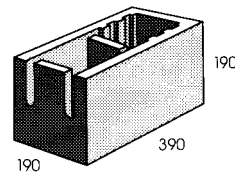
50.31
200 capping tile



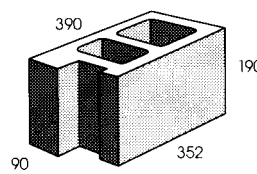
20.09 (NC)
Hollow - control joint



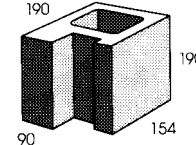
20.10 (NC)
Hollow - control joint half



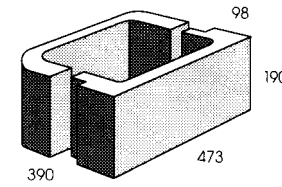
20.21 (NC)
Knock-out bond beam corner



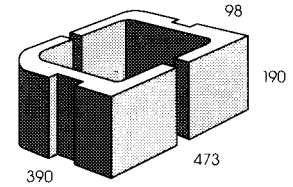
20.23 (NC)
Jamb - full length



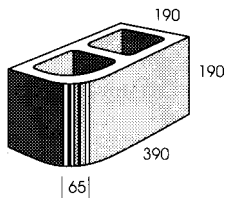
20.24 (NC)
Jamb - half



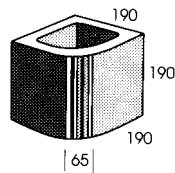
20.56 (NC)
Pilaster



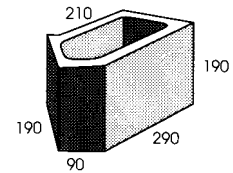
20.57 (NC)
Pilaster - with control joint



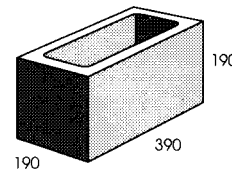
20.713 (NC)
Bullnose - full length



20.715 (NC)
Bullnose - half



20.739 (NC)
Hollow - 45° squint

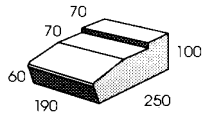


20.925 (NC)
Single core - full length

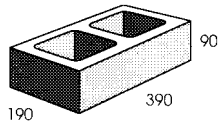
200 SERIES

190 mm thick walls

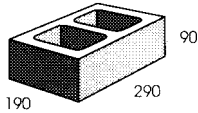
PLAIN FACE – HALF HEIGHT



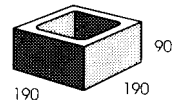
20.38
Sill block



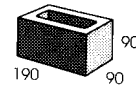
20.71 (NC)
Hollow – full length



20.72 (NC)
Hollow – three quarter

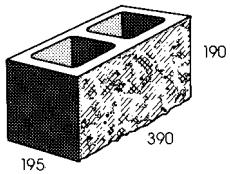


20.73 (NC)
Hollow – half

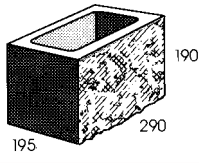


20.74 (NC)
Hollow – quarter

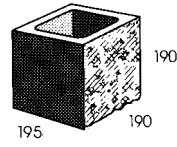
SPLIT FACE RANGE



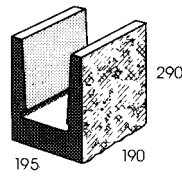
20.121 (NC)
Hollow – full length



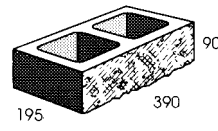
20.122 (NC)
Hollow – three quarter



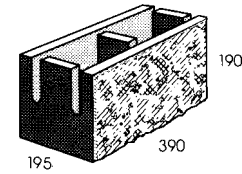
20.123 (NC)
Hollow – half



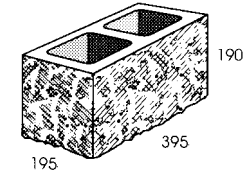
20.126 (NC)
Three-quarter lintel



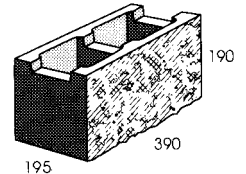
20.127 (NC)
Hollow – half height



20.120 (NC)
Knock-out bond beam



20.139 (NC)
Corner



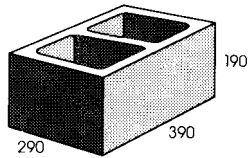
20.142 (NC)
Channel

NC indicates units which are not as common as others and it would be prudent to check with manufacturer before specifying them. For Fire Rated Blocks refer to company test data and test results.

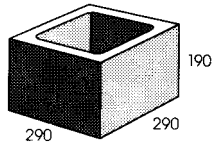
300 SERIES

290 mm thick walls

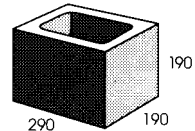
PLAIN FACE - HALF HEIGHT



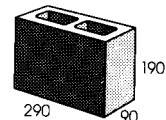
30.01
Hollow - full length



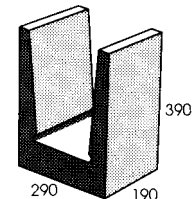
30.02
Hollow - three quarter



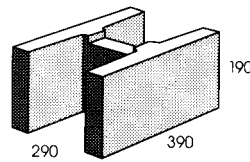
30.03
Hollow - half



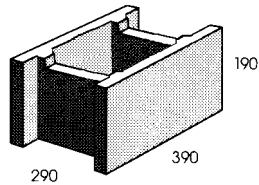
30.04
Hollow - quarter
(Same as 10.02)



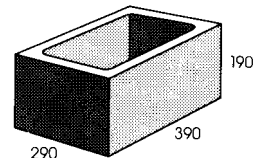
30.18
Deep lintel



30.48
'H' block



30.91
Double 'U' retaining wall block

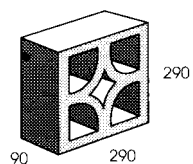


30.925
Single core - full length

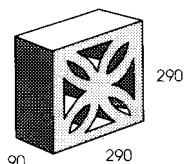
NC indicates units which are not as common as others and it would be prudent to check with manufacturer before specifying them

SCREEN BLOCKS

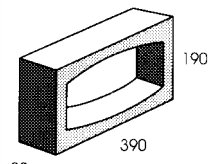
Decorative walls [various thicknesses]



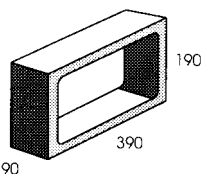
10.905 (NC)



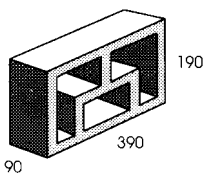
10.908 (NC)



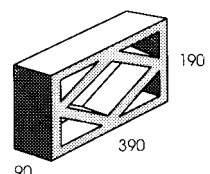
10.931 (NC)



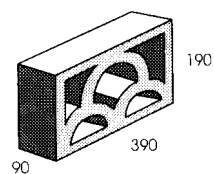
10.934 (90 mm) (NC)
15.934 (140 mm) (NC)



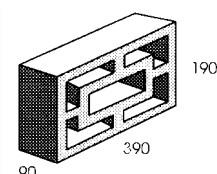
10.935 (90 mm) (NC)
15.935 (140 mm) (NC)



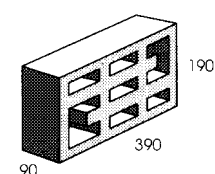
10.936 (90 mm) (NC)
15.936 (140 mm) (NC)



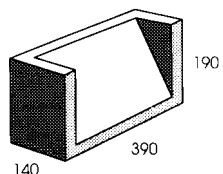
10.938 (90 mm) (NC)
15.938 (140 mm) (NC)



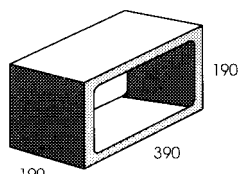
10.939 (90 mm) (NC)
15.939 (140 mm) (NC)



10.940 (90 mm) (NC)
15.940 (140 mm) (NC)



15.745 (NC)
Louvre block



20.925 (NC)

NC indicates units which are not as common as others and it would be prudent to check with manufacturer before specifying them