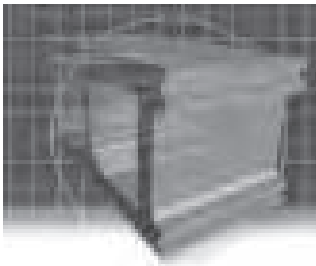
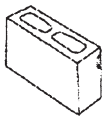
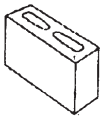
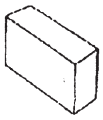


Canadian Concrete Masonry Producers' Association

Physical Properties

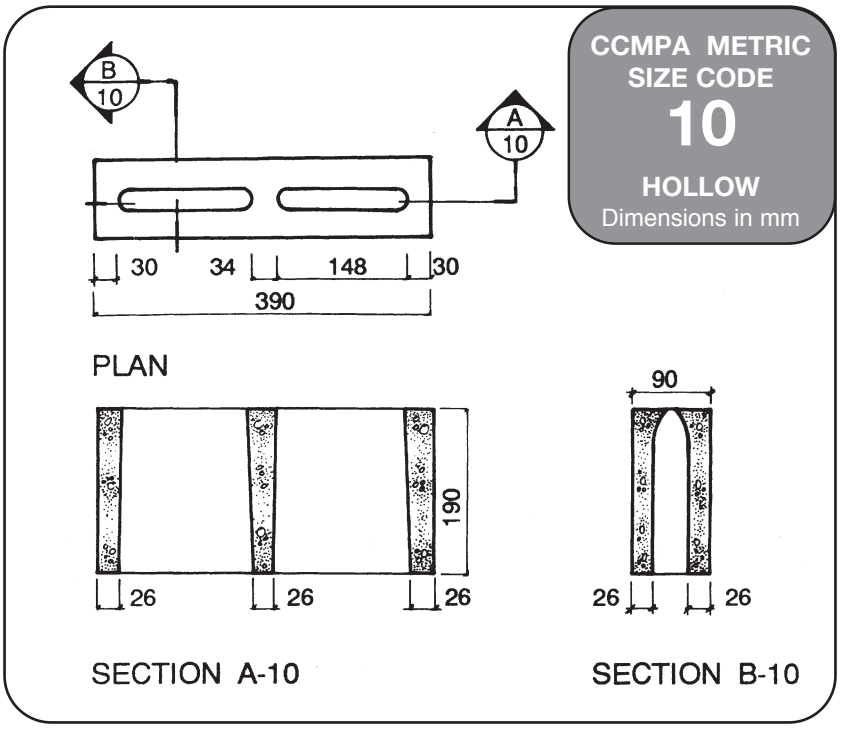
PHYSICAL PROPERTIES OF STANDARD METRIC SIZE BLOCK

SIZE CODE 10

ACTUAL DIMENSIONS (mm) Width 90 Length 390 Height 190		NOTES*	STANDARD CONFIGURATION		
			HOLLOW	75% SOLID	SOLID
PROPERTIES					
Dimensions (mm)	Minimum Face Shell Thickness	1	26	30	N/A
	Minimum Web Thickness	1	26	26	N/A
	Equivalent Thickness	2	66	74	90
Area (mm^2)	Gross Area	3	3.51×10^4	3.51×10^4	3.51×10^4
	Net Area	4	2.56×10^4	2.88×10^4	3.51×10^4
	Core Area	5	4.75×10^3	3.15×10^3	N/A
Volume (mm^3)	Gross Volume	6	6.669×10^6	6.669×10^6	6.669×10^6
	Net Volume	7	4.868×10^6	5.469×10^6	6.669×10^6
Percent Solid (%)	Net Volume/Gross Volume		73%	82%	100%
Typical Unit Mass (kg)	CSA "A" - Type "A" Concrete	8	10.2	11.5	14.0
	CSA "C" - Type "C" Concrete		8.5	9.7	11.7
	CSA "D" - Type "D" Concrete		8.0	9.0	11.0
Typical Wall Mass (kg/m^2) (with mortar)	CSA "A" - Type "A" Concrete		138	155	189
	CSA "C" - Type "C" Concrete		115	130	158
	CSA "D" - Type "D" Concrete		109	122	149
Minimum Compressive Strength (Mpa)	Based on Net Area		15.0	15.0	15.0
	Based on Gross Area		10.95	12.3	15.0
Fire Performance Rating (hours)	Normal Weight - N.B.C.	9	0.8	1.1	1.4
	Light Weight - N.B.C. -$L_2$20S		1.1	1.3	1.8
Sound Properties	Sound Transmission Class - (STC) -CSA Type "A" Concrete	10	43	45	47
	-CSA Type "C", "D" Concrete		40	42	45
Thermal Properties (m^2 °C/W)	RSI Factors -CSA Type "A" Concrete	11	.17	N/A	N/A
	-CSA Type "C", "D" Concrete		.24	N/A	N/A
Moment of Inertia (mm^4)	Per Block **I**		22.69×10^6	23.25×10^6	23.69×10^6
	Per Metre **I**m		58.18×10^6	59.61×10^6	60.75×10^6
Section Modulus (mm^3)	Per Block S		0.504×10^6	0.517×10^6	0.527×10^6
	Per Block Sm		1.293×10^6	1.324×10^6	1.350×10^6

* Information to be used in conjunction with explanatory notes on Page 4-11

Physical Properties

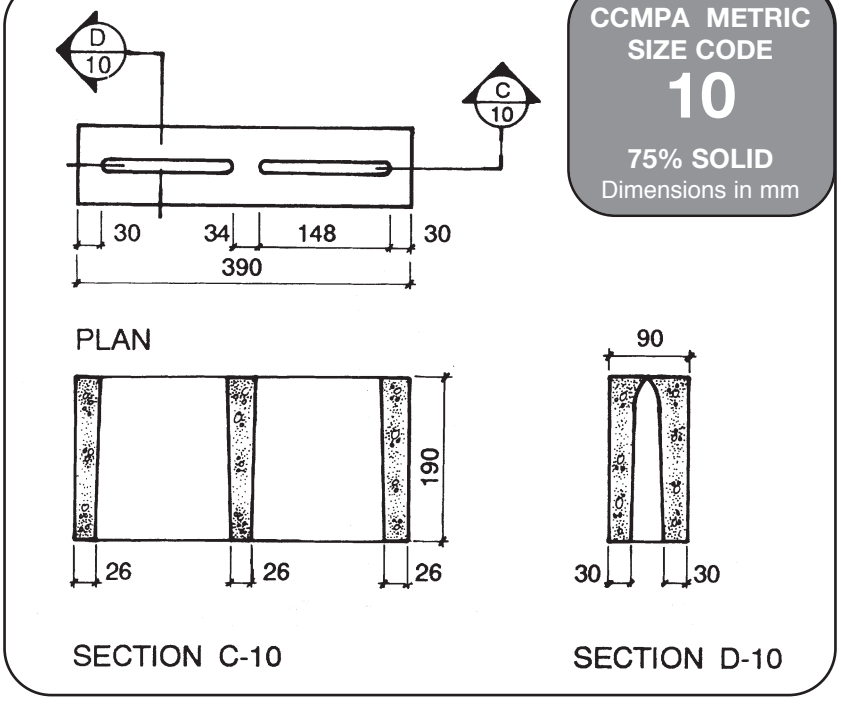


CCMPA METRIC SIZE CODE

10

HOLLOW

Dimensions in mm



CCMPA METRIC SIZE CODE

10

75% SOLID

Dimensions in mm

Physical Properties

Explanatory Notes

NUMBER	DESCRIPTION
1	Due to manufacturing process, dimensions may exceed minimum requirements.
2	Equivalent thickness is the net thickness of a unit, other than a solid unit, re-shaped to form a voidless unit having the same height and length dimensions (190mm x 390mm) and is a direct function of percentage solid content. Therefore, the overall width of a non-solid unit multiplied by its percentage solid content will arrive at its equivalent thickness ratio. The percentage solid content equals net volume (as defined in The Supplement to the National Building Code) divided by gross volume. e.g. Calculating Equivalent Thickness: 20cm Hollow Concrete Block Percentage Solid 56% as per O.C.B.A. specification Equivalent Thickness = Actual Width x Percentage Solid $= 190\text{mm} \times \frac{56}{100}$ Equivalent Thickness = 106mm
3	Gross Area, defined by the CSA-A165.1, is the area parallel to the bearing surface of the masonry unit by calculating the actual measured overall dimensions of the unit including the voids.
4	Net Area is the net cross-sectional area at mid-depth of the unit. This area can be calculated using actual Gross Area multiplied by percentage solid of unit.
5	Core Area is the measurement of the core areas taken at mid-height of unit.
6	Gross Volume, as defined in Supplement to the National Building Code is: "Equal to the actual length of the unit multiplied by the actual height of the unit multiplied by the actual thickness of the unit."
7	Net Volume, as defined in Supplement to the National Building Code is: "Determined by using a volume displacement method that is not influenced by the porous nature of the unit."
8	Refer to CCMPA Specifications for concrete density (kg/m3). Typical Average Weight of Type "A" Concrete 2100 kg/m^3 Typical Average Weight of Type "C" Concrete 1750 kg/m^3 Typical Average Weight of Type "D" Concrete 1650 kg/m^3
9	Fire Ratings are based on the Supplement to the National Building Code.
10	For more detailed information, refer to Section 7 – Sound Properties.
11	Refer to Section 6 – Thermal Properties, for detailed information.