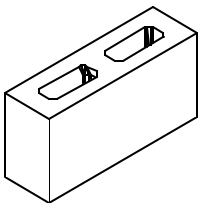
115mm BLOCK
Narrowest block offering:

- 1 hour fire rating (hollow)
- 2 hour fire rating (grouted solid)
- ability to accept reinforcement

Partition walls made of these blocks also offer excellent:
- Security
- Sound control
- Fire resistance

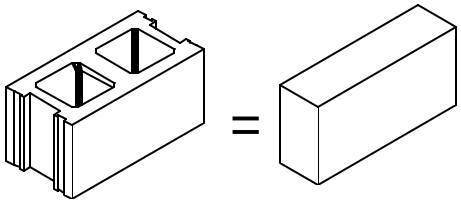


FIRE ENDURANCE

The fire resistance ratings of masonry walls are determined by heat transmission measured by temperature rise on the cold side. A masonry wall will not let flames or smoke through even after the temperature of the wall on the cold side has risen above required levels. Few walls fail due to load during the fire test, during cooling under the fire hose, or during the double load test that follows. Fire endurance can be calculated as a function of the aggregate type used in the block and the equivalent solid thickness of the wall.
Fire-rated walls made of gypsum wallboard are not required to endure the same fire-hose test.

The fire rating of a masonry wall can be evaluated in two ways. The "Equivalent Thickness" method is outlined in detail in *Appendix D* of the B.C. *Building Code*. The material equivalent thickness required to achieve various ratings are listed in *Table D-2.1.1*.
The second recognized method is to employ the higher fire ratings provided by the *Underwriters Laboratories of Canada (ULC)*. The U.L.C ratings apply only to specific block shipments from certified suppliers.

EQUIVALENT THICKNESS



Equivalent thickness is the solid thickness that would be obtained if the same amount of concrete contained in a hollow unit were re-cast without core holes.

Calculating Estimated Fire Resistance Example: A 200 mm hollow masonry wall is constructed of Type N or S concrete units reported to be 56% solid. What is the estimated fire resistance of the wall? Equivalent Thickness = 56% x 190mm = 106 mm which gives a 1.5 hour fire rating.

Fire Ratings

~~Minimum required equivalent thicknesses for masonry and concrete (mm)~~
~~From table D-2.1.1 of the Building Code~~

Hours	0.5	0.75	1	1.5	2	3	4
Solid Brick (>80%)	63	76	90	108	128	152	178
Cored Brick (<80%)	50	60	72	86	102	122	142
Concrete Block (Std. Weight)	44	59	73	95	113	142	167

Fire ratings for walls of hollow concrete masonry units in hours

Block Thickness (Actual)	Percent Solid	Equivalent Thickness	Standard Weight Concrete **Types N / S**		Semi-light weight concrete **Types N / S**		Light weight concrete **Type $L_2$20S**	
			N.B.C.[1]	U.L.C.[2]	N.B.C.[1]	U.L.C.[2]	N.B.C.[1]	U.L.C.[2]
mm	**%**	**mm**	**hrs.**	**hrs.**	**hrs.**	**hrs.**	**hrs.**	**hrs.**
90	73	66	3/4	-	3/4	-	1	-
115	63	73	1	-	-	-	-	-
140	58	81	1	-	1	-	1 1/2	-
190	56	106	1 1/2	2	1 1/2	2	2	4
240	53	127	2	3	2	3	3	4
290	51	144	3	3	3	3	4	4

[1] National Building Code of Canada (N.B.C. 1995 Table D-2.1.1.)
Hollow concrete units made with type N/S concrete
must have a net area comprehensive strength of 15 MPa 28 days.
[2] Underwriters Laboratories of Canada
Available in British Columbia from some manufacturers.

Example 1:

A four-hour firewall is required for 200mm nominal wall thickness.

A four-hour fire rating may be achieved by using a U.L.C. rated lightweight block, or by filling a 190 mm wide block with concrete grout (see BC*BC Section D-2*)

Example 2:

A two-hour firewall is needed.

Using the table, a 190mm unit is rated by the NBC to have a 1.5-hour fire rating, but with a U.L.C. certificate, that same block can be certified for two hours.

There are other options available to achieve the two-hour rating:

- Use a 115mm or larger block grouted solid
- Use a 240mm or larger block
- Use a lightweight 190mm or larger block