

**Boehmers Block**  
**CMU Fire Resistance Ratings**  
**60% solid, 190 mm CMU of Various Concrete Types**

Under Sections 2.1 and 1.6, SB-2 of the Ontario Building Code:

Equivalent thickness of 190 mm CMU @ 60% solid = 0.6 x 190 = 114 mm

Table 2.1.1 of the OBC, Excerpted:

Table D-2.1.1.  
Minimum Equivalent Thicknesses<sup>(1)</sup> of Unit Masonry and Monolithic Concrete Walls Loadbearing and Non-Loadbearing, mm

Type of Wall	Fire-Resistance Rating						
	30 min	45 min	1 h	1.5 h	2 h	3 h	4 h
Solid brick units (80% solid and over), actual overall thickness	63	76	90	108	128	152	178
Cored brick units and hollow tile units (less than 80% solid), equivalent thickness	50	60	72	86	102	122	142
Solid and hollow concrete masonry units, equivalent thickness							
Type S or N concrete <sup>(2)</sup>	44	59	73	95	113	142	167
Type L <sub>1</sub> 20S concrete	42	54	66	87	102	129	152
Type L <sub>1</sub> concrete	42	54	64	82	97	122	143
Type L <sub>2</sub> 20S concrete	42	54	64	81	94	116	134
Type L <sub>2</sub> concrete	42	54	63	79	91	111	127
Monolithic concrete and concrete panels, equivalent thickness							
Type S concrete	60	77	90	112	130	158	180
Type N concrete	59	74	87	108	124	150	171
Type L40S or Type L concrete	49	62	72	89	103	124	140

**Notes to Table D-2.1.1.:**

<sup>(1)</sup> See definition of equivalent thickness in D-1.6.

<sup>(2)</sup> Hollow concrete masonry units made with Type S or N concrete shall have a minimum compressive strength of 15 MPa based on net area, as defined in CSA A165.1, "Concrete Block Masonry Units."

**Fire Resistance Rating Using the Equivalent Thickness Calculation Method:**

S or N concrete:

$$FRR = 2 \text{ hr.} + (114 - 113) / (142 - 113) \times 1 \text{ hr.} = 2.03 \text{ hrs.}$$

L<sub>2</sub>20S concrete:

$$FRR = 2 \text{ hr.} + (114 - 94) / (116 - 94) \times 1 \text{ hr.} = 2.91 \text{ hrs.}$$

**Boehmers Block: FRR for 60% solid, 190 mm CMU**

Concrete Type	FRR (hrs.)
Type S or N concrete	2.03
Type L <sub>2</sub> 20S concrete	2.91