

Rated Fire Resistive Periods

All concrete masonry units manufactured by Anchor Block Company:

- 1) Exceed minimum standards as established by ASTM C90-06
- 2) Meet all current code requirements (Minnesota State Building Code is based on the International Building Code and the International Residential Code).

All standard weight aggregate conforms to the requirements of ASTM C33. All lightweight aggregate conforms to the requirements of ASTM C331.

Fire resistance of concrete masonry units is determined by the "equivalent thickness" of the block and the type of aggregate. The equivalent thickness is the theoretical thickness of the block if all the concrete was molded into a solid unit. It is calculated by multiplying the actual thickness by the percentage of solids. As an example, an eight-inch block with 52 percent solids has an equivalent of 4.0 inches ($7.625 \times 52\% = 4$). The greater the equivalent thickness, the greater the fire rating.

Lightweight aggregate (expanded clay) has better fire rating than standard weight block (siliceous gravel). As an example, an eight-inch standard weight block has a one-hour rating and an eight-inch lightweight block has a two-hour rating. Filling the cores of the block with grout or other non-combustible material will increase the fire resistance. Applying plaster or gypsum wallboard will also increase the fire resistance.

ESTIMATED FIRE RESISTIVE PERIODS OF WALLS AND PARTITIONS OF HOLLOW CONCRETE MASONRY:

	Minimum Equivalent Thickness for Ratings of:			
Type of Course Aggregate:	4 Hour	3 Hour	2 Hour	1 Hour
Expanded Clay (Lightweight)	5.7"	4.9"	3.9"	2.7"
Siliceous Gravel (Standard weight)	6.2"	5.3"	4.2"	2.8"

(Based on Table 720.1 (2) – International Building Code as adopted by the Minnesota State Building Code)

Wall Thickness	Block Number	Block Size (Inches)	Face Shell Thickness	Web Thickness	% Solid	Equivalent Thickness (Inches)	Fire Resistive Ratings/Hours Std. Wat.	L.W.
4	402	4x8x16	1	1	75	2.7	–	1
4 Solid	490	4x8x16	Solid	–	100	3.6	1	1
6	602	6x8x16	1	1	57	3.2	1	1
2 Hour	616	6x8x16	2	1	87	4.9	2	3
8	800	8x8x16	1¼"	1	52	4.0	1	2
2 Hour	816	8x8x16	1⅝"	1	64	4.9	2	3
3 Hour	817	8x8x16	2⅛"	1½"	77	5.9	3	4
Solid	890	8x8x16	Solid	–	100	7.6	4	4
10	1000	10x8x16	1¼"	1⅛"	51	4.9	2	3
12	1200	12x8x16	1¼"	1⅛"	45	5.5	2	3
Thick Wall	1200THW	12x8x16	1½"	1⅛"	47	5.5	3	3
3 Hour	1217	12x8x16	1⅝"	1¼"	47	5.5	3	3
4 Hour	1218	12x8x16	2⅛"	1½"	57	6.6	4	4
14	1400	14x8x16	1⅝"	1¼"	46	6.6	4	4
16	1600	16x8x16	1½"	1¼"	44	6.9	4	4

