

## 12" A-1/RF Masonry Units Structural Section Properties

<i>Grouted Cores</i>	<i>Mortar Bedding</i>	<i>A</i> ( <i>in<sup>2</sup>/ft.</i> )	<i>I<sub>x</sub></i> ( <i>in<sup>4</sup>/ft.</i> )	<i>S<sub>acoustic</sub></i> ( <i>in<sup>3</sup>/ft</i> )	<i>S<sub>opp. face</sub></i> ( <i>in<sup>3</sup>/ft</i> )	<i>r<sub>x</sub></i> ( <i>inches</i> )	<i>y</i> ( <i>inches</i> )
None	Faceshell	35.30	736	117.1	112.0	4.25	5.94
None	Full	47.72	830	118.1	140.6	3.92	5.31
8" o.c.	Full	95.30	943	127.8	209.6	3.09	4.40
16" o.c.	Faceshell	67.76	919	121.7	174.8	3.56	4.77
24" o.c.	Faceshell	57.48	874	119.7	158.6	3.74	5.00
32" o.c.	Faceshell	53.52	856	119.0	151.7	3.82	5.11
40" o.c.	Faceshell	51.14	844	118.6	147.3	3.87	5.18
48" o.c.	Faceshell	47.21	828	118.0	139.6	3.98	5.32

Notes:

1. A = minimum net cross-sectional area.
2. I<sub>x</sub> = moment of inertia based on average net cross-sectional area.
3. S<sub>acoustic</sub> = section modulus with respect to acoustic face based on minimum net cross sectional area.
4. S<sub>opp. face</sub> = section modulus with respect to non-acoustic face (opposite face) based on minimum net cross sectional area.
5. r<sub>x</sub> = radius of gyration based on average net cross sectional area.
6. y = Distance to centroid of cross-section from non-acoustic face of masonry based on minimum net cross-section.
7. Use of minimum versus average net cross section is based on the requirements of ACI 530-08/ASCE 5-08/TMS 402-08, *Building Code Requirements for Masonry Structures*, §1.9.

