

Product: Double Door with sidelites 12'x8'

Scope:

This analysis provides calculations, quantities, and spacing requirements for installing product to substrate, and it applies only to the product described herein. These calculations comply with requirements of the Florida Building Code.

Drawings verification:

This analysis verifies anchoring for the following drawings:

DWG-MA-FL0121-05	DWG-MA-FL0131-05	DWG-MA-FL0148-06	DWG-MA-FL0171-07
DWG-MA-FL0123-05	DWG-MA-FL0133-05	DWG-MA-FL0152-06	DWG-MA-FL0173-07
DWG-MA-FL0125-05	DWG-MA-FL0135-05	DWG-MA-FL0154-06	DWG-MA-FL0176-08
DWG-MA-FL0127-05	DWG-MA-FL0139-05	DWG-MA-FL0161-07	DWG-MA-FL0183-15
DWG-MA-FL0129-05	DWG-MA-FL0141-05	DWG-MA-FL0163-07	

Anchor to be qualified:

- #10 Wood screw, for installation in wood frame substrates.
- 1/4" Tapcon, for masonry installation

Anchor capacity in shear condition:

Solid members w/ & w/out gap:

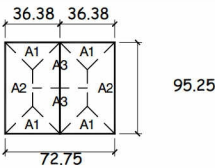
Fastener type: #10 wood screw	(NDS 2012, TR12)	Gap:	g: 0.0000 in
Root diameter: Dr: 0.152 in		Moment arm:	0.0000 in
Minimum required penetration: p: 1.140 in		Screw bending yield strength: F _{ys} =	80,000 psi
Side member: Douglas Fir-Larch		Main member: Spruce-Pine-Fir	
Side member thickness: t _s = 1.000 in		Main member thickness: t _m =	1.500 in
Side member dowel bearing strength: F _{es} = 4,650 psi		Main member dowel bearing strength: F _{em} =	3,350 psi
Side member dowel bearing length: l _s = 1.000 in		Main member dowel bearing length: l _m =	1.140 in

Mode I _m	Mode I _s	Mode II	Mode III _m	Mode III _s	Mode IV
qm = 509.2 lbs/in	qs = 707 lbs/in	A: 0.0008	A: 0.00120	A: 0.00134	A: 0.001689
P = 580.5 lbs	P = 707 lbs	B: 1.07	B: 0.57	B: 0.5	B: 0.000
K _b = 2.200	K _b = 2.200	C: -342.139	C: -212.263	C: -223.524	C: -93.6
Z _m = 264 lbs	Z _s = 321 lbs	P = 265 lbs	Ms = 46.8 in-lbs	Mm = 46.8 in-lbs	
Min. Design value:	Z = 107 lbs	K _b = 2.2	P = 246 lbs	P = 263 lbs	P = 235 lbs
Duration Factor:	C _D = 1.6	Z = 120 lbs	K _b = 2.2	K _b = 2.2	K _b = 2.2
Allowable Design Value (Z _{C_D}):	Z' = 171 lbs/anchor	Z = 112 lbs	Z = 119 lbs	Z = 119 lbs	Z = 107 lbs

Fastener type: 1/4" ITW Tapcon	N.O.A. 12-0816.06
Substrate: Hollow block	Minimum embedment: 1.25 in
Edge distance: 4.00 in	Tabulated shear design value: Z = 202 lbs
Edge distance: 2.00 in	Tabulated shear design value: Z = 161 lbs
Actual edge distance: 2.50 in	Reduction factor: 0.85
Spacing: 4.00 in	Tabulated shear design value: Z = 202 lbs
Spacing: 2.00 in	Tabulated shear design value: Z = 166 lbs
Actual spacing: 3.00 in	Reduction factor: 0.91
Allowable Design Value (Z _{fAN}):	Z' = 156 lbs/anchor
Minimum anchor capacity:	156 lbs/anchor

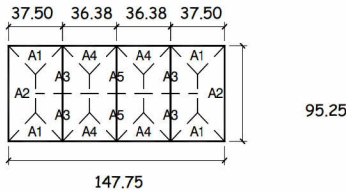
Note: Anchors with the least capacity is used for calculations to qualify anchors with higher capacity.

Anchor calculations, minimum required anchors



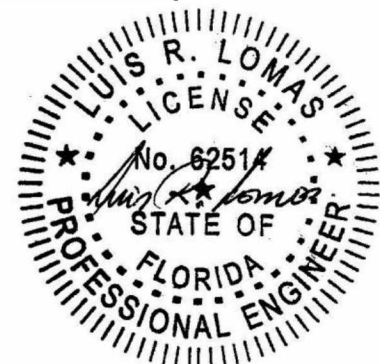
Design pressure: 55.0 psf

Zone	Area (ft ²)	Load (lbs)	Ind. (in)	Max. O.C. (in)	Anchor			Result
					Cap. (lbs)	Qty	Load (lbs)	
A ₁	2.3	126	N/A	N/A	156	1	126	OK
A ₂	9.7	535	6.00	21.00	156	5	107	OK
A ₃	9.7	535	N/A	N/A	156	4	134	OK



Design pressure: 55.0 psf

Zone	Area (ft ²)	Load (lbs)	Ind. (in)	Max. O.C. (in)	Anchor			Result
					Cap. (lbs)	Qty	Load (lbs)	
A ₁	2.4	134	N/A	N/A	156	1	134	OK
A ₂	10.0	548	6.00	21.00	156	5	110	OK
A ₃	9.8	542	N/A	N/A	156	4	135	OK
A ₄	2.3	126	N/A	N/A	156	1	126	OK
A ₅	9.7	535	N/A	N/A	156	4	134	OK



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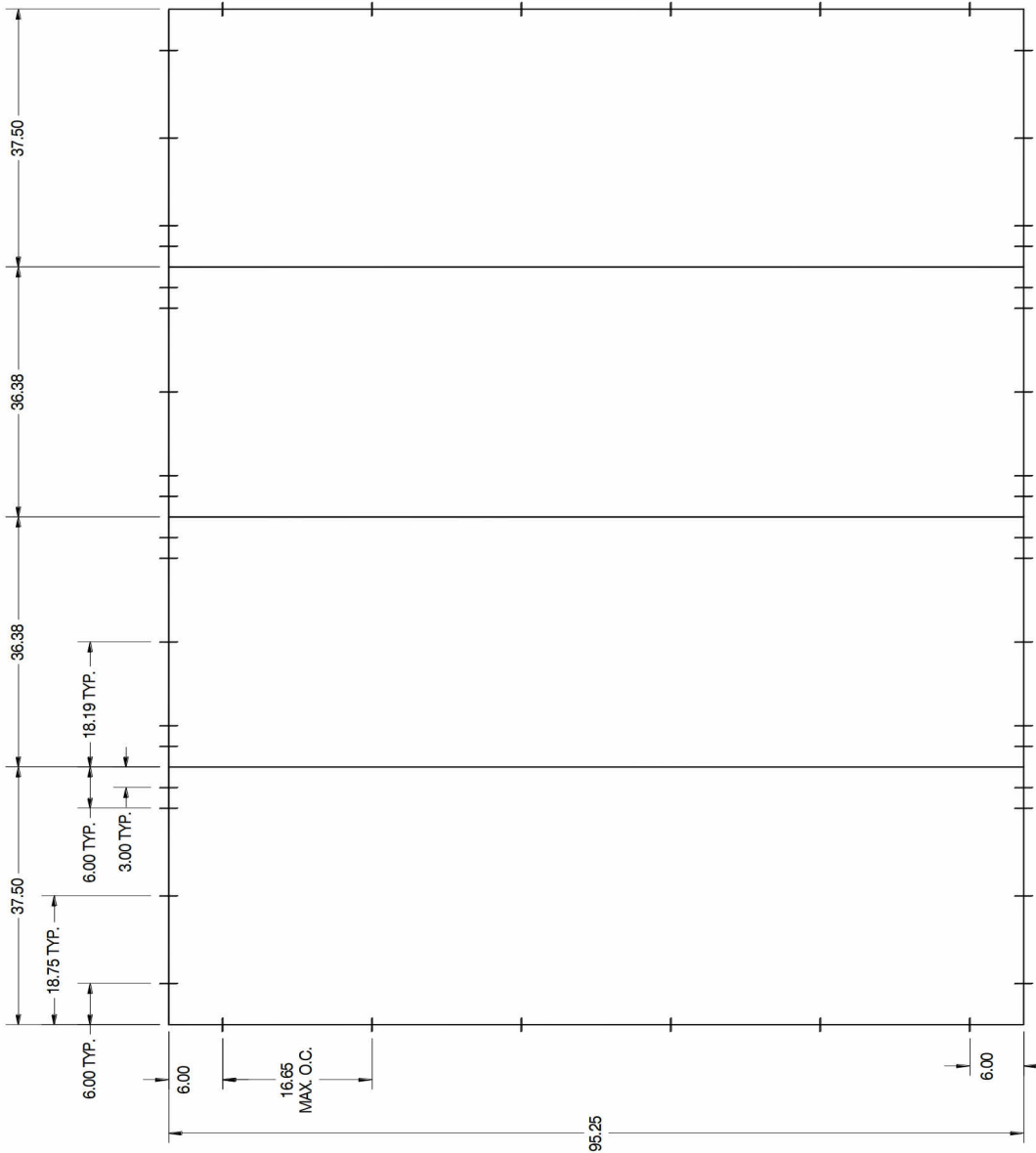
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Manufacturer: Masonite

Report #: 501C

Date: 09/10/2015

Anchor Locations: Double door with sidelites



Note:

Anchor locations indicated in this document are the minimum required for the described product exposed at the design pressure indicated herein.



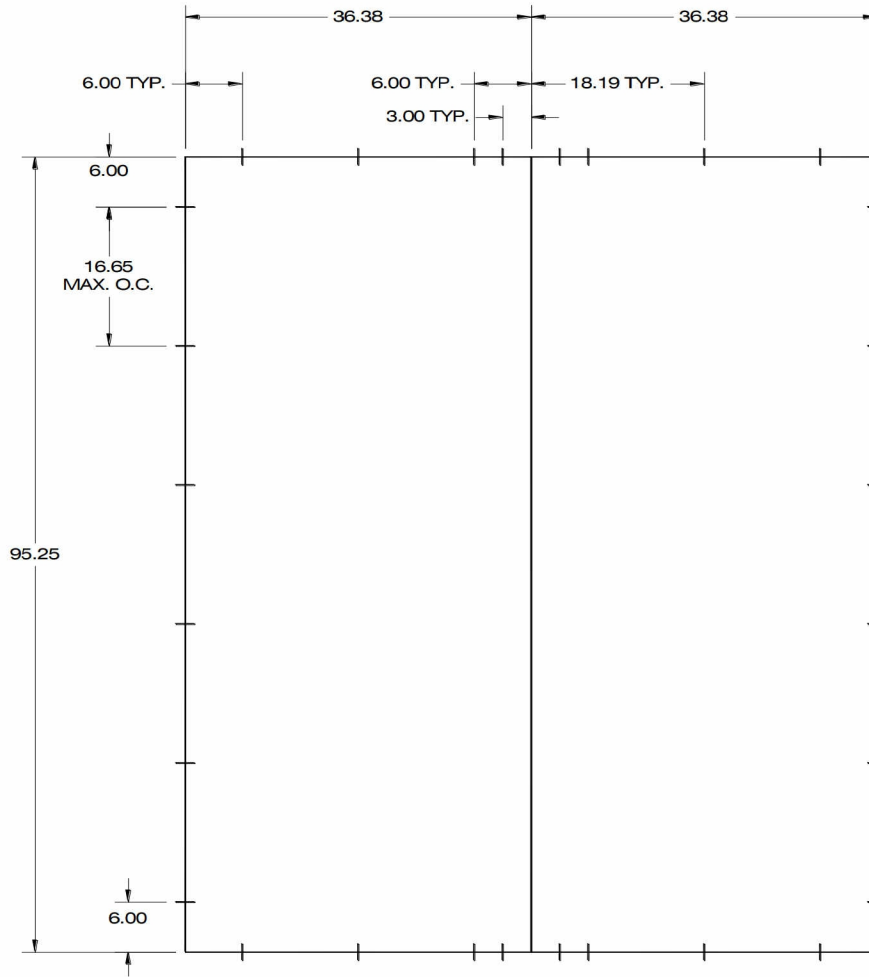
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