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BUILDING PRODUCTS
A Griffon Company

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JAMB FASTENER ANALYSIS
CONNECTING JAMB TO EXISTING STRUCTURE

DOCUMENT CBPC-JFA-0001-REV02

This analysis provides a series of Jamb Fastening Schedules for the following situations:

- 3/8" x 3" Lag Screw W/ 1-1/8" Dia. Washer (1-1/2" Embed) in SPF
- 3/8" x 3" Lag Screw W/ 1-1/8" Dia. Washer (1-1/2" Embed) in SYP
- 3/8" x 3" Sleeve Anchors (1-1/2" Embed) in 2000 psi (Min.) Concrete
- 3/8" x 3" Self-Tapping Concrete Anchors (1-1/2" Embed)

Using The Schedules

1. Determine the positive wind load for a particular door, in pounds per square foot and the maximum allowed door width from the Approved Clopay Windload drawing specific to the installation.
2. If the framing is made of wood, determine the type of lumber being used. The charts include southern yellow pine (SYP) and spruce-pine-fir (SPF). If the type is uncertain, SPF may be assumed.
3. Determine the type of fastener to be used, from the alternatives listed in this document.
4. Find the appropriate Schedule to use, and round the positive wind load to the nearest value listed in the Schedule.
5. Review the notes at the bottom of the schedule used.

Important Information

- The fasteners used may need to be installed in accordance with either manufacturer's instructions or requirements specific to a particular project
- Please observe the notes included with each Schedule.

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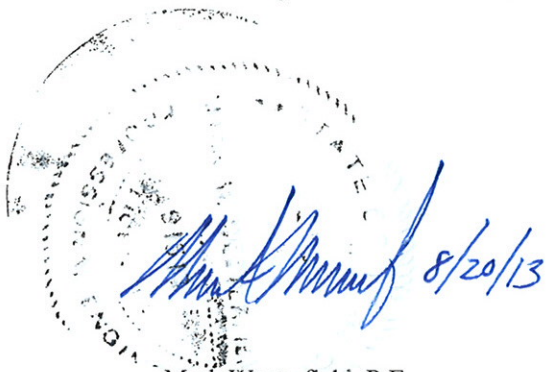
3/8" x 3" Lag Screw W/ 1-1/8" Dia. Washer (1-1/2" Embed) in SPF

3/8" x 3" Lag Screw W/ 1-1/8" Dia. Washer (1-1/2" Embed)
Reference: 2001 NDS for Wood Construction, p. 8, 59, 68, 74, 166

Spruce Pine Fir (SPF), Specific Gravity = 0.42
385 lb/anchor allowable load

	Maximum Spacing (INCHES)						
Door Width (ft) => Design Load	9'-0"	10'-0"	12'-0"	14'-0"	16'-0"	18'-0"	20'-0"
10 PSF	24	24	24	24	24	24	24
15 PSF	24	24	24	24	24	24	24
20 PSF	24	24	24	24	24	24	23
25 PSF	24	24	24	24	23	21	18
30 PSF	24	24	24	22	19	17	15
35 PSF	24	24	22	19	17	15	13
40 PSF	24	23	19	17	14	13	12
45 PSF	23	21	17	15	13	11	10
50 PSF	21	18	15	13	12	10	9
55 PSF	19	17	14	12	11	9	8
60 PSF	17	15	13	11	10	9	8

Notes:
1. Anchors to be evenly spaced between the header and the floor or between jams.
2. First (bottom) anchor starting at no more than half of the maximum on-center distance. Highest anchor installed at least as high as the door opening.
3. Minimum end distance of 1.5" required.
4. Anchor spacing calculated from loads per 2001 AF&PA NDS for Wood Construction.
5. Wood jambs shall be 2 x 4 SYP minimum. 2 x 6 SYP is recommended.
6. Use with 1-1/8" min. O.D. washers.
7. Supporting structural elements shall be designed by a registered professional engineer for wind loads in addition to other loads.
8. Pre-drill 3/16" dia. holes.
9. Lag screws must conform to ANSI/ASME Standard B18.2.1.



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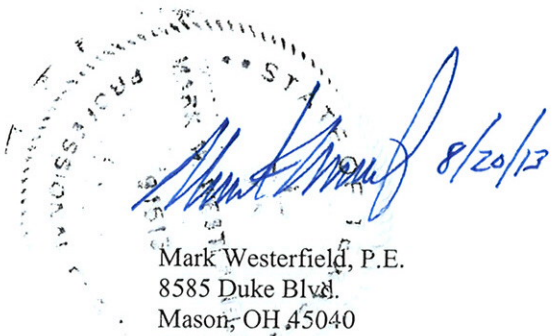
3/8" x 3" Lag Screw W/ 1-1/8" Dia. Washer (1-1/2" Embed) in SYP

3/8" x 3" Lag Screw W/ 1-1/8" Dia. Washer (1-1/2" Embed)
Reference: 2001 NDS for Wood Construction, p. 8, 59, 68, 74, 166

Southern Yellow Pine, Specific Gravity = 0.55
577 lb/anchor allowable load

	Maximum Spacing (INCHES)						
Door Width (ft) => Design Load	9'-0"	10'-0"	12'-0"	14'-0"	16'-0"	18'-0"	20'-0"
10 PSF	24	24	24	24	24	24	24
15 PSF	24	24	24	24	24	24	24
20 PSF	24	24	24	24	24	24	24
25 PSF	24	24	24	24	24	24	24
30 PSF	24	24	24	24	24	24	23
35 PSF	24	24	24	24	24	22	20
40 PSF	24	24	24	24	22	19	17
45 PSF	24	24	24	22	19	17	15
50 PSF	24	24	23	20	17	15	14
55 PSF	24	24	21	18	16	14	13
60 PSF	24	23	19	16	14	13	12

Notes:
1. Anchors to be evenly spaced between the header and the floor or between jams.
2. First (bottom) anchor starting at no more than half of the maximum on-center distance. Highest anchor installed at least as high as the door opening.
3. Minimum end distance of 1.5" required.
4. Anchor spacing calculated from loads per 2001 AF&PA NDS for Wood Construction.
5. Wood jambs shall be 2 x 4 SYP minimum. 2 x 6 SYP is recommended.
6. Use with 1-1/8" min. O.D. washers.
7. Supporting structural elements shall be designed by a registered professional engineer for wind loads in addition to other loads.
8. Pre-drill 3/16" dia. holes.
9. Lag screws must conform to ANSI/ASME Standard B18.2.1.



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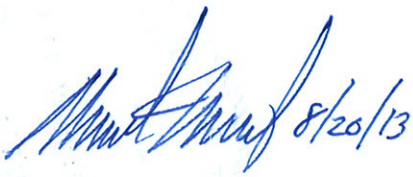
3/8" x 3" Sleeve Anchors (1-1/2" Embed) in 2000 psi (Min.) Concrete

3/8" x 3" Sleeve Anchors (1-1/2" Embed)
Reference: Simpson Strong-Tie Online Load Tables, www.simpsonanchors.com,
2001 NDS for Wood Construction, p. 8, 59, 68, 74, 166

Southern Yellow Pine Jamb (Specific Gravity = 0.55), 2000 psi Min. Concrete
336 lb/anchor allowable load

	Maximum Spacing (INCHES)						
Door Width (ft) => Design Load	9'-0"	10'-0"	12'-0"	14'-0"	16'-0"	18'-0"	20'-0"
10 PSF	24	24	24	24	24	24	24
15 PSF	24	24	24	24	24	24	24
20 PSF	24	24	24	24	24	22	20
25 PSF	24	24	24	23	20	18	16
30 PSF	24	24	22	19	17	15	13
35 PSF	24	23	19	16	14	13	12
40 PSF	22	20	17	14	13	11	10
45 PSF	20	18	15	13	11	10	9
50 PSF	18	16	13	12	10	9	8
55 PSF	16	15	12	10	9	8	7
60 PSF	15	13	11	10	8	7	7

Notes:
1. Anchors to be evenly spaced between the header and the floor.
2. First (bottom) anchor starting at no more than half of the maximum on-center distance. Highest anchor installed at least as high as the door opening.
3. Min edge distance of 3" required.
4. Anchor spacing calculated from loads per Simpson Strong-Tie online performance data and AF&PA 2001 NDS for Wood Construction.
5. Wood jambs shall be 2 x 4 SYP minimum. 2 x 6 SYP is recommended.
6. Use washers provided by sleeve anchor manufacturer.
7. Supporting structural elements shall be designed by a registered professional engineer for wind loads in addition to other loads.
8. **SPACING LESS THAN 6 INCHES NOT RECOMMENDED**



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3/8" x 3" Self-Tapping Concrete Anchors (1-1/2" Embed)

1/4" x 3" Self Tapping Concrete Anchors (1-1/2" Embed)
Reference: ITW Ramset/Redhead Tapcon Online Performance Data, www.ramset-redhead.com

Grout-Filled CMU Block (1-1/4" Max. Embed for CMU Block)
154 lb/anchor allowable load

	Maximum Spacing (INCHES)						
Door Width (ft) => Design Load	9'-0"	10'-0"	12'-0"	14'-0"	16'-0"	18'-0"	20'-0"
10 PSF	24	24	24	24	23	21	18
15 PSF	24	24	21	18	15	14	12
20 PSF	21	18	15	13	12	10	9
25 PSF	16	15	12	11	9	8	7
30 PSF	14	12	10	9	8	7	6
35 PSF	12	11	9	8	7	6	5
40 PSF	10	9	8	7	6	5	5
45 PSF	9	8	7	6	5	5	4
50 PSF	8	7	6	5	5	4	4
55 PSF	7	7	6	5	4	4	3
60 PSF	7	6	5	4	4	3	3

Min. 2000 PSI Concrete
280 lb/anchor allowable load

	Maximum Spacing (INCHES)						
Door Width (ft) => Design Load	9'-0"	10'-0"	12'-0"	14'-0"	16'-0"	18'-0"	20'-0"
10 PSF	24	24	24	24	24	24	24
15 PSF	24	24	24	24	24	24	22
20 PSF	24	24	24	24	21	19	17
25 PSF	24	24	22	19	17	15	13
30 PSF	24	22	19	16	14	12	11
35 PSF	21	19	16	14	12	11	10
40 PSF	19	17	14	12	11	9	8
45 PSF	17	15	12	11	9	8	7
50 PSF	15	13	11	10	8	7	7
55 PSF	14	12	10	9	8	7	6
60 PSF	12	11	9	8	7	6	6

Notes:
1. Anchors to be evenly spaced between the header and the floor.

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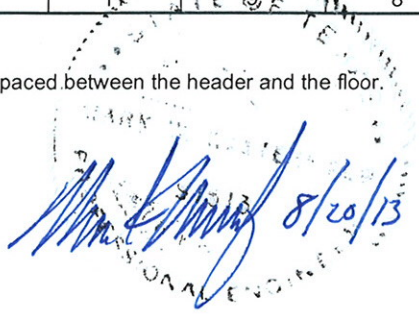

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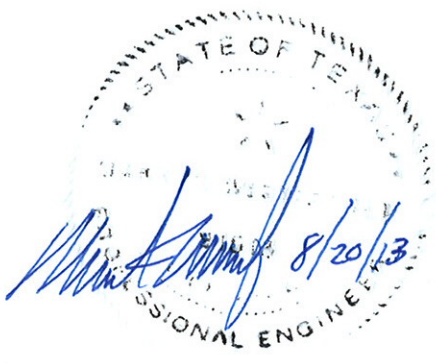
3/8" x 3" Self-Tapping Concrete Anchors (1-1/2" Embed)

2. First (bottom) anchor starting at no more than half of the maximum on-center distance. Highest anchor installed at least as high as the door opening.
3. Minimum edge distance of 2.5" required.
4. Anchor spacing calculated from loads per ITW Ramset/Redhead online performance data.
5. Wood jambs shall be 2 x 4 SYP minimum. 2 x 6 SYP is recommended.
6. Use with 1" min. O.D. washers.
7. Safety factor of 4:1 used to calculate allowable load per anchor.
8. Supporting structural elements shall be designed by a registered professional engineer for wind loads in addition to other loads.



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