

Building Types for Wood Framed Fire-Rated E-Wall Panels

Non-Sprinkled Allowable Stories, Building Heights, Areas
Construction Type & Occupancy Group ^{1, 2, 3, 5, 11}

2-hr

BuildSMART 2-hour Rated Firewall

1-hr

BuildSMART 1-hour Rated Firewall

0-hr

BuildSMART non-rated

Not Possible (NP) per 506.2 or not suitable for BuildSMART (NS) per 601

Building Types	Construction Types								
	I-A ^{9, 10}	I-B ^{9, 10}	II-A ^{9, 10}	II-B ^{9, 10}	III-A ⁶	III-B ⁶	IV ^{7, 8}	V-A ¹⁸	V-B ¹⁸
Movie Theaters and Performing Arts Group A-1	NS	5 st. 160' UL	3 st. 65' 15,500	2 st. 55' 8,500	3 st. 65' 14,000	2 st. 55' 8,500	3 st. 65' 15,000	2 st. 50' 11,500	1 st. 40' 5,500
Restaurants and Night Clubs Group A-2	NS	5 st. 160' UL	3 st. 65' 15,500	2 st. 55' 9,500	3 st. 65' 14,000	2 st. 55' 9,500	3 st. 65' 15,000	2 st. 50' 11,500	1 st. 40' 6,000
Galleries, Community and, Fitness Centers, Courts, Libraries, Museums, Worship Group A-3	NS	5 st. 160' UL	3 st. 65' 15,500	2 st. 55' 9,500	3 st. 65' 14,000	2 st. 55' 9,500	3 st. 65' 15,000	2 st. 50' 11,500	1 st. 40' 6,000
Banks, Health Clinics, Offices, Retail, and Small Restaurants, Universities Group B	NS	11 st. 160' UL	5 st. 65' 37,500	3 st. 55' 23,000	5 st. 65' 28,500	3 st. 55' 19,000	5 st. 65' 36,000	3 st. 50' 18,000	2 st. 40' 9,000
Pre-Schools, K-12 Schools Group E, Note 17	NS	5 st. 160' UL	3 st. 65' 26,500	2 st. 55' 14,500	3 st. 65' 23,500	2 st. 55' 14,500	3 st. 65' 25,500	1 st. 50' 18,500	1 st. 40' 9,500
Assisted Living, Group Homes, other custodial care Group I-1, Note 17	NS	9 st. 55' 55,000	4 st. 65' 19,000	3 st. 55' 10,000	4 st. 65' 16,500	3 st. 55' 10,000	4 st. 65' 18,000	3 st. 50' 10,500	2 st. 40' 4,500
Nursing Homes, Hospitals Group I-2, Note 17	NS	9 st. 55' UL	4 st. 65' 15,000	3 st. 55' 11,000	4 st. 65' 12,000	NP	4 st. 65' 12,000	3 st. 50' 9,500	NP
Day Care Group I-4, Note 15	NS	5 st. 160' 60,500	3 st. 65' 26,500	2 st. 55' 13,000	3 st. 65' 94,000	2 st. 55' 23,500	3 st. 65' 13,000	1 st. 50' 74,000	1 st. 40' 36,000
Retail Stores Group M	NS	11 st. 160' UL	4 st. 65' 21,500	2 st. 55' 12,500	4 st. 65' 18,500	2 st. 55' 12,500	4 st. 65' 20,500	3 st. 50' 14,000	1 st. 40' 9,000
Hotels and Motels Group R-1, Notes 16, 17	NS	11 st. 60' UL	4 st. 60' 24,000	4 st. 60' 16,000	4 st. 60' 24,000	4 st. 60' 16,000	4 st. 60' 20,500	3 st. 60' 12,000	2 st. 60' 7,000
Dormitories, Multifamily, permanent residence types Group R-2, Notes 16, 17	NS	12 st. 60' UL	4 st. 60' 24,000	4 st. 60' 16,000	4 st. 60' 24,000	4 st. 60' 16,000	4 st. 60' 20,500	4 st. 60' 12,000	3 st. 60' 7,000
Single Family and Duplexes Group R-3, Notes 14, 16	NS	12 st. 60' UL	4 st. 60' UL	4 st. 60' UL	4 st. 60' UL	4 st. 60' UL	4 st. 60' UL	4 st. 60' UL	3 st. 60' UL

- Notes:**
- 1

Table 504.3 Allowable Building Height Above Grade Plane
- 2

Table 504.3: Allowable building height can be increased by 25' in buildings sprinklered per 903.2, except construction types IIB and IIIB can only be increased by 15', type VA can only be increased by 10' and type VB cannot be increased.
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Table 504.4 Allowable Number of Stories Above Grade Plane
- 4

Table 504.4, Note g: Allowable number of stories can be increased by one in sprinklered buildings (per 903.2) except no increase is allowed in Group I-2 in construction types IIB, IIIA, IV and VA.
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Table 601 Fire-Resistance Rating Requirements for Building Elements
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602.3 Type III exterior walls shall be of noncombustible materials. Fire-retardant-treated wood framing is permitted within exterior wall assemblies of 2-hour rating or less.
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602.4.1 Fire-retardant-treated wood framing shall be permitted within Type IV exterior wall assemblies with a 2-hour rating or less.
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BuildSMART panels in Type IV construction are non-structural within a heavy timber frame, designed by others.
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603.1, 1.2 BuildSMART walls are suitable within a structural frame provided by others.
- 10

603.1 All materials in BuildSMART's Firewall¹⁻², 2-hour wall panel, are noncombustible except the FRTW studs as allowed in Type I-B, Type II construction. Type I-B requires 2-hr rated walls and Type II-B can be 0-hr rated per Table 601. Type I-A requires 3-hr exterior walls per Table 601 and is shown above not
- 11

Table 602 Fire Resistance Rating for Exterior Bearing Walls
- 12

Table 602 For buildings with at least 5' fire separation distance, 1-hr exterior fire walls are required.
705.5 Exterior walls with fire separation distance greater than 10' shall be rated for exposure to fire from the inside. Walls with fire separation distance less than or equal to 10' shall be be rated for exposure to fire from both sides. BuildSMART 2-hr Wall Panels are designed to withstand fire for 2-hours for fire exposure from interior and 1-hour fire exposure from the exterior side. Therefore, they are suitable for buildings with 2-hr exterior fire walls and at least 10' fire separation distance.
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Table 705.8 Maximum Area of Exterior Wall Openings Based on Fire Separation Distance and Protection
- 14

Refer also to the International Residential Code which has less stringent sprinkler requirement for Group R facilities.
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Table 504.3 Note e. Group I-1 buildings are required to be sprinklered per 903.2.6.
- 16

Table 504.3 and Table 504.4, Note h. Group R buildings require quick-response sprinkler system per 903.2.8 and 903.2.8.1 for R-3.
- 17

Section 308 The table is a simplification of the occupancy classifications for Group I-1 care facilities and R-4 residences which are affected by number and capabilities of occupants in the facility and the level of care provided.
- 18

Section 2603.5 Foam plastic insulation shall be labled on packaging for frame spread index <75 and smoke-developed index <450 per ASTM E84 or UL 723.