NFPA

Single Stair Update

March, 2025

IT'S A BIG WORLD. LET'S PROTECT IT TOGETHER.™

Single Stair Exists (not the only issue)

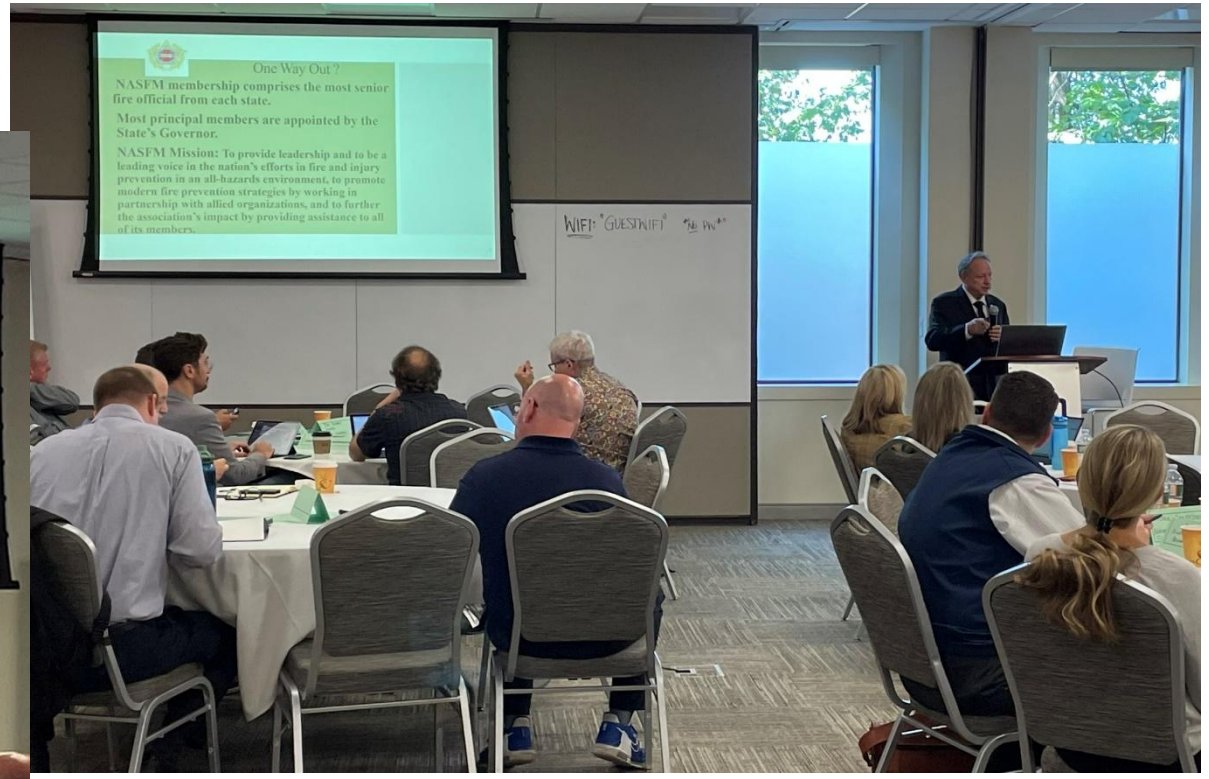
NFPA JOURNAL

EMERGING ISSUES

Single Stair, Many Questions

The push to increase the allowable height of residential buildings with a single exit stairwell illuminates the tangled intersection between safety, housing affordability, building codes, and politics.

September NFPA Single Stair Symposium



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Outcomes from the Symposium

1. Single egress points from buildings mean a single point of failure
2. Are there construction types where this would be more acceptable?
3. Operational impacts in single stair buildings needs further study to determine impact on fire attack, and fire growth

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Outcomes from the Symposium

4. Further study needed to define occupant egress time in combination with fire attack
5. New hazards caused by occupancy (the human factor)
6. Knowledge gaps identified

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Identified Knowledge Gaps

1. Impact on firefighting in single-stair buildings
   - Occupants Egressing While First Responders Ingressing
2. Need for more detailed comparison of single vs. multiple egress buildings

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Identified Knowledge Gaps

3. Need for more detailed and consistent data
    - Data and data collection differ by country
4. Human characteristics impact on fire risk
    - Hazards Arising Post Occupancy
    - Occupant storage of Li-ion battery equipment
    - ITM of fire protection features

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Identified Knowledge Gaps

5. Impact of stair and building construction
   - Combustible vs non-combustible materials
6. Impact of emerging technologies

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Data and data collection differ by country

1. Data is that countries collect and report data differently.
2. Vietnam, for example, likely only collects data on fires with deaths or injuries, whereas the United States collects data on all fires.
3. What is counted and reported as a fire death in one country may not be counted the same way in another.
4. One of the biggest pieces of data that is lacking are construction type details.

If comparisons are to be made between countries, there is a need to ensure data is being collected and reported the same way.

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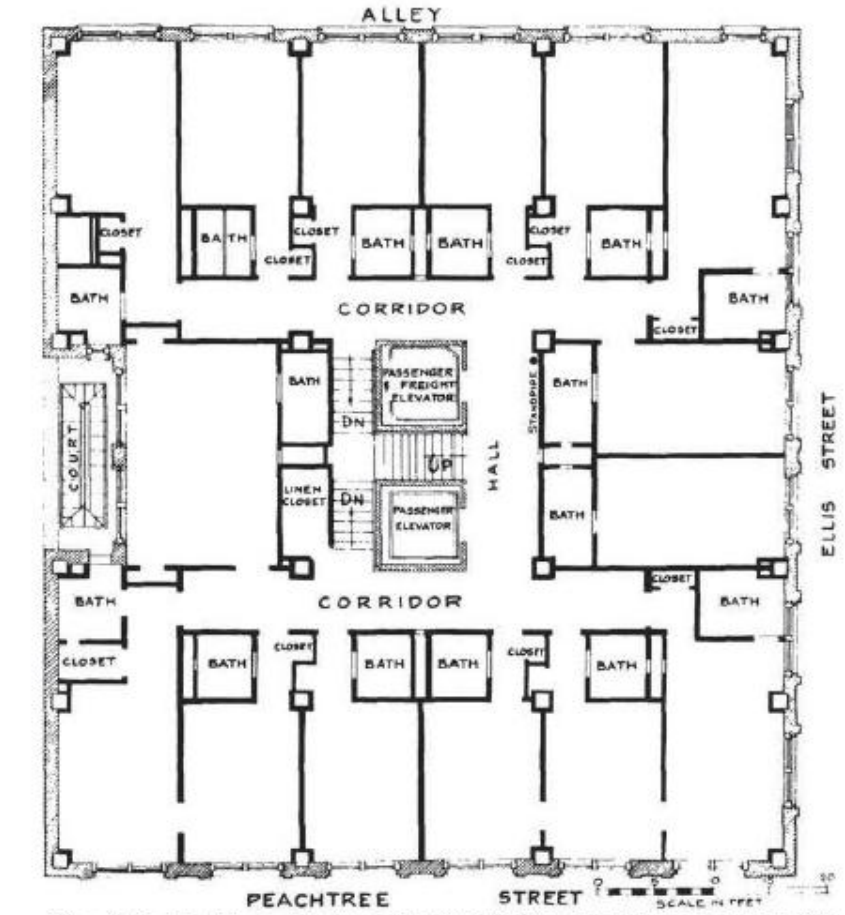
Winecoff Hotel December 7, 1946

Press Association.

When the fire department raised their first aerial ladder, people were awaiting rescue at windows and many were already jumping. This picture shows improvised bed sheet ropes which were used successfully in some instances to descend from windows above the reach of the 85 ft. ladder. Many of those seen in the windows of this picture, beyond the reach of the fire department, could not be rescued.



Plan of the third floor. The fire is supposed to have started near the end of the corridor, upper left in this plan, although the exact origin may never be known. The arrangement was the same on all floors above.

Since the Symposium

1. ICC Committee Hearings Part 2
2. Public Comments and modifications presented in Long Beach, CA
3. Several alternatives were approved by the ICC Means of Egress Committee

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Since the Symposium

TABLE 1006.3.4(1)
STORIES AND OCCUPIABLE ROOFS WITH ONE EXIT OR ACCESS TO ONE EXIT FOR R-2 OCCUPANCIES.

STORY	OCCUPANCY	MAXIMUM NUMBER OF DWELLING UNITS	MAXIMUM EXIT ACCESS TRAVEL DISTANCE
Basement, first, second, ~~or~~ third, or fourth story above grade plane and occupiable roofs over the first, ~~or~~ second, or third story above grade plane	R-2[a, b, c, d]	4 dwelling units	125 feet
~~Fourth~~ Fifth story above grade plane and higher	NP	NA	NA

(Portion of footnotes not shown remain unchanged)

d. 4-story buildings and 3-story buildings with an occupiable roof above the third story shall also comply with Section 1006.3.4.2.

1006.3.4.2 Single exit four-story buildings with Group R-2 dwelling units.
Four-story buildings with a single exit for Group R-2 dwelling units shall comply with Table 1006.3.4(1) and all of the following:

1. The *net floor area* of each floor shall not exceed 4,000 square feet (418.5 m2).
2. Openings to the *interior exit stairway* enclosure shall be limited to those required for exit access into the enclosure from normally occupied spaces, those required for egress from the enclosure, and openings to the exterior. Elevators shall not open into the *interior exit stairway* enclosure.
3. A *manual fire alarm system* and *automatic smoke detection system* that activates the occupant notification system in accordance with Section 907.5 shall be provided. Smoke detectors shall be located in common spaces outside of *dwelling units*, including but not limited to gathering areas, laundry rooms, mechanical equipment rooms, storage rooms, interior *corridors*, *interior exit stairways*, and *exit passageways*.
4. Regardless of the stairway construction type, *automatic sprinkler* locations in *interior exit stairways* shall comply with the requirements of NFPA 13 for combustible stairways.
5. Electrical receptacles shall be prohibited in an *interior exit stairway*.

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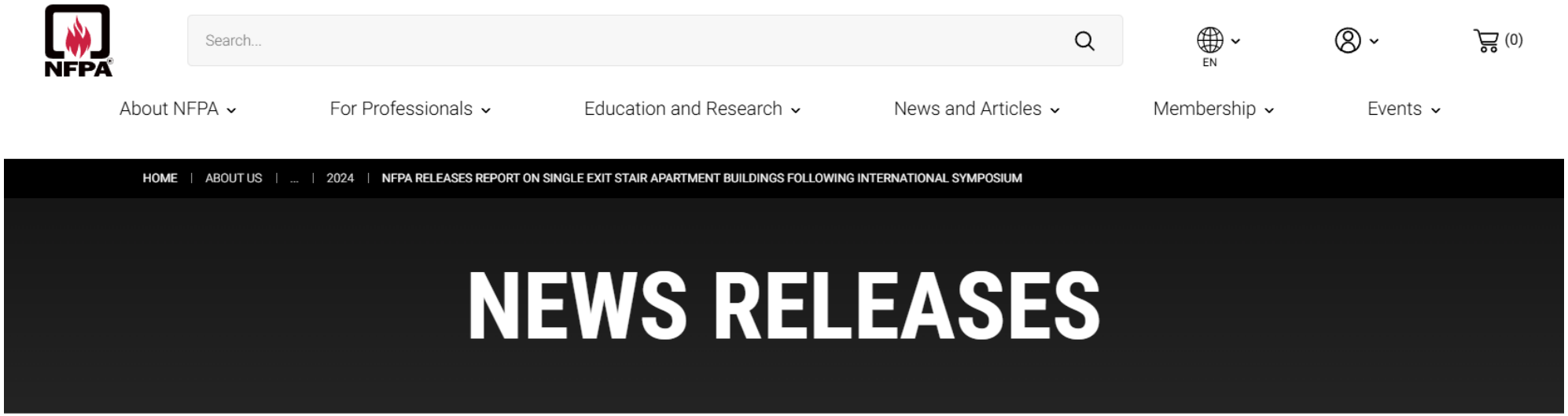
Full Symposium Report



NFPA releases report on single exit stair apartment buildings following international symposium

14-Nov-2024

NFPA denounces safety changes occurring outside of the codes and standards process

The National Fire Protection Association® (NFPA®) released *"One Stair, Two Perspectives: Single Exit Stair Symposium,"* a report summarizing key discussions and findings from a recent symposium addressing concerning efforts by legislative bodies in the U.S. and Canada to increase the allowable height of single exit stair apartment buildings from three or four stories to six.

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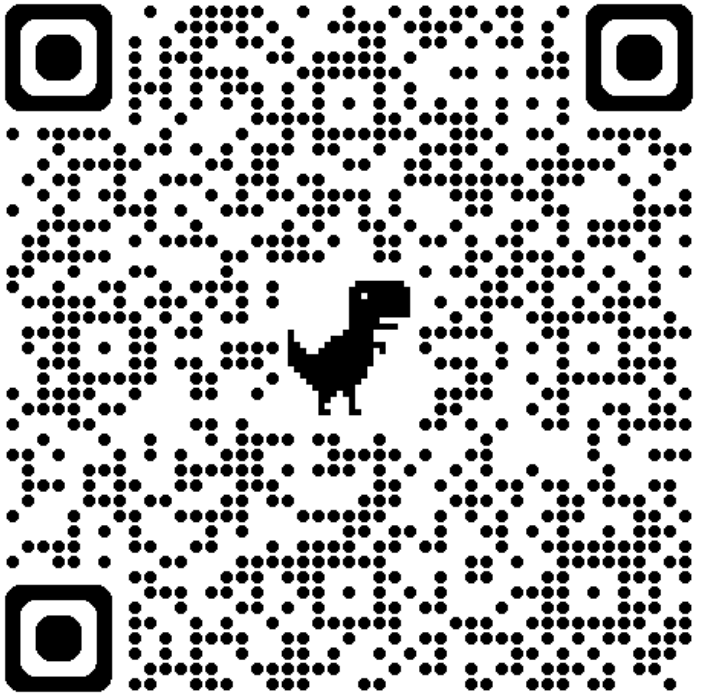
Full Symposium Report

www.nfpa.org/singleexit



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Next Steps

- Research/Analysis on existing code requirements
  - NFPA Research Foundation work on
    - Code analysis of different types of construction
    - Code analysis of different egress times
    - Alternatives to six stories with single egresses
    - Modeling
- Future meetings possible???

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NATIONAL FIRE PROTECTION ASSOCIATION

The leading information and knowledge resource on fire, electrical and related hazards

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