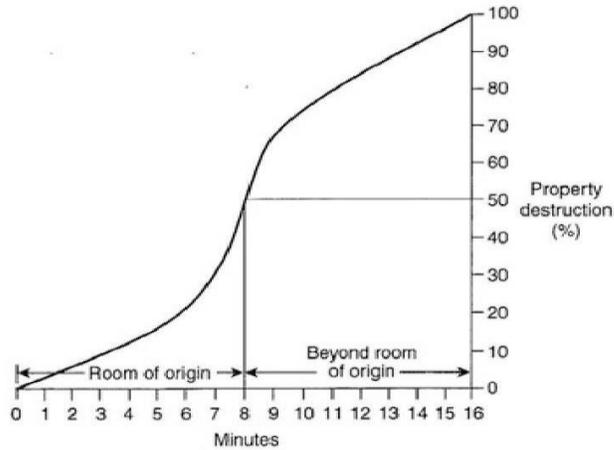


Fire Propagation Risks per NFPA 1710 Appendix A

From NFPA 1710, Appendix A

A.5.2.2.2.1 An early, aggressive, and offensive primary interior attack on a working fire, where feasible, is usually the most effective strategy to reduce loss of lives and property damage. In Figure A.5.2.2.2.1, the line, which combines temperature rise and time, represents a rate of fire propagation in an unsprinklered room and roughly corresponds to the percentage of property destruction. At approximately 10 minutes into the fire sequence, the hypothetical room of origin flashes over. Extension outside the room begins at that point.



Fire Propagation Curve.

FIGURE A.5.2.2.2.1 Fire Propagation Curve.

Consequently, given that the progression of a structure fire to the point of flashover (i.e., the very rapid spreading of the fire due to superheating of room contents and other combustibles) generally occurs in less than 10 minutes, two of the most important elements in limiting fire spread are the quick arrival of sufficient personnel and equipment to attack and extinguish the fire as close to the point of its origin as possible.

The ability of adequate fire suppression forces to significantly influence the outcome of a structure fire is undeniable and predictable. Data generated by NFPA and used by the committee in developing this standard provide empirical data that rapid and aggressive interior attack can substantially reduce the human and property losses associated with structure fires (See Table A.5.2.2.2.1 (b) as an update of Table A.5.2.2.2.1.(a)).

Table A.5.2.1.2.1 (a) Fire Extension in Residential Structures 1994-1998

| Extension | Rate per 1000 Fires | | Average Dollar Loss per Fire |
|---|---------------------|-------------------|------------------------------|
| | Civilian Deaths | Civilian Injuries | |
| Confined to the room of origin | 2.32 | 35.19 | \$ 3,185 |
| Beyond the room but confined to the floor of origin | 19.68 | 96.86 | \$ 22,720 |
| Beyond the floor of origin | 26.54 | 63.48 | \$ 31,912 |

Note: Residential structures include dwellings, duplexes, manufactured homes (also called mobile homes), apartments, row houses, town houses, hotels and motels, dormitories, and barracks.

Source: *NFPA Annual Fire Experience Survey and National Fire Incident Reporting System.*

Table A.5.2.2.2.1(b) Fire Extension Home Structure Fires,
 2006-2010 Rate per 1000 Fires

| Flame Spread | Rate per 1000 Fires | | Average Dollar Loss per Fire |
|---|---------------------|----------------------|---------------------------------|
| | Civilian Deaths | Civilian Injuries | |
| Confined fires or contained fire identified by incident type | 0.000 | 10.29 | \$ 212 |
| Confined fire or flame damage confined to object of origin | 0.65 | 13.53 | \$ 1,565 |
| Confine to room of origin, including confined fires and fires confined to object | 1.91 | 25.32 | \$ 2,993 |
| Beyond the room but confined to floor of origin | 22.73 | 64.13 | \$ 7,445 |
| Beyond the floor of origin | 24.63 | 60.41 | \$ 58,431 |