Preface

This book updates the report, *Home Fire Sprinkler Cost Assessment* (Fire Protection Research Foundation 2008). The primary purpose of this study is to review current home fire sprinkler system costs against the 2008 benchmark study to gain a better understanding of how increasingly widespread adoption of sprinkler ordinances impacts system cost. Using a larger sample size, the current study attempts to gain a better understanding of the impact of sprinkler ordinances on home fire sprinkler system cost and other factors that affect system cost.[1]

The current study examines 51 homes in 17 communities; the 2008 study examined 30 homes in 10 communities. The long-term goal is to enlarge and repeat the study at regular intervals to measure costs within an increasing number of communities over time. Several key statistics comparing the two studies are shown in Table 1.

The 2008 report was completed prior to the International Residential Code's sprinkler requirement, *Section R313 Automatic Fire Sprinkler Systems,* applicable to townhouses and one-and-two family dwellings. The requirement has also been included in the NFPA 1 Fire Code, the NFPA 101 Life Safety Code, and NFPA 5000 Building Construction and Safety Code since the 2006 editions of each code. Section R313.2.1 of the IRC requires that fire sprinkler systems be installed either in accordance with Section P2904 (Dwelling Unit Fire Sprinkler Systems)[2] of the IRC or with the National Fire Protection Association (NFPA) 13D standard. Prior to the section's inclusion in the 2009 IRC, residential fire sprinkler provisions were previously available via appendix. However, none of the communities in the study require that systems be installed in accordance with Section P2904.[3] Instead, all jurisdictions apply the NFPA 13D standard, or NFPA 13D with local amendments.

[1] Variables that factor into sprinkler system costs include product and installation costs, permit and inspection fees, increased tap fees, testing and design fees, and additional equipment such as backflow preventers, booster pumps, and holding trunks where required.

[2] Section P2904 is a prescriptive residential fire sprinkler design and installation requirement consistent with NFPA 13D and is found in the 2009 and 2012 IRC plumbing requirements.

[3] 2012 International Residential Code.

Table 1 Comparison of key statistics, 2008–2013

Select key statistics	2008 Study	2013 Study
Number of communities	10	17
Number of homes	30	51
Number of homes on public water supply/stored	24/6	44/7
Number of homes with basement/slab/crawl space foundations	20/6/4	31/18/2

Table 2 Residential sprinkler system costs, 2008–2013

	2008 Cost		2013 Cost	
	$/Sprinklered ft^2 [a]	Total cost[b]	$/Sprinklered ft^2	Total cost
Mean	$1.61	$6,316	$1.35	$6,026
Median	$1.42	$5,843	$1.22	$5,000
Minimum	$0.38	$2,386	$0.81	$1,695
Maximum	$3.66	$16,061	$2.47	$21,000

[a]The term "sprinklered square feet" (sprinklered ft^2) reflects the total area of sprinklered spaces, including basements, garages, and attics where applicable. This term is used to better characterize the cost of sprinklers per unit of space which is covered by the system, especially because many of the homes have sprinklers in spaces beyond the normal living space, such as a garage

[b]"Total Cost" includes all cost including spaces beyond the normal living space, such as garages and unfinished basements, and any associated fees

The cost analysis is provided in two major sections. *Cost Analysis of Residential Sprinkler Systems* examines all 51 homes in the study and analyzes the data across homes and, where applicable, provides community comparisons. The *Individual Community Analysis* section provides individual community data and also includes qualitative data gained through interviews with community officials, builders, and fire sprinkler contractors.

In the 2013 update the average cost per sprinklered ft^2 was $1.35. Table 2 provides a comparative summary of costs for the 2008 study and the 2013 update. Study findings also include:

- CPVC piping continues to be the material of choice;
- Significantly lower costs are found in the two states having statewide ordinances, Maryland and California, than in the sample as a whole; and,
- There is no noted increase in number of homes using a multipurpose system.



http://www.springer.com/978-1-4939-1082-3

Home Fire Sprinkler Cost Assessment

Partners LLC, N.
2014, X, 38 p. 14 illus., 13 illus. in color., Softcover
ISBN: 978-1-4939-1082-3