

Mandatory Installation of Fire Sprinklers in All New One & Two Family Homes: Facts and Truths

Proponents of mandatory fire sprinklers in all new 1 & 2 family homes – or even just 2-family homes - make a number of factual assertions. Learn the truth and what's behind the facts.

See also, <http://www.hbact.org/FireSprinklers>

Factual Assertion	Truth
Fire sprinklers in new homes will save lives.	<p>In CT, "almost" all fire deaths in homes occur in older homes, homes built prior to 1985. Why? That's the year hard wired smoke detectors, with battery backup, were required in all new home construction in CT. For new homes, we say "almost" because we leave open the possibility there may be a fire death in a new home the records have not yet revealed, but nobody has put that evidence forward. We examined, when we had the resources to do so, all CT fire deaths in homes that occurred over 11 years. Every fire death occurred in a home that was built well prior to 1985, many of them in much older homes. So, if nobody has died in a home fire in a home built since 1985, how can fire sprinklers in new homes save more lives? In new construction, smoke detectors and other fire safety requirements, save lives. Fire sprinklers could save some lives if installed in all older homes (see next line).</p>
Fire sprinklers save twice as many lives when installed in a home with working smoke detectors versus a home with just working smoke detectors. Or, as stated by CT Fire Chiefs Association, "the fire death rate per 1,000 reported home structure fires was lower by 82%" in homes with sprinklers. (2015 testimony on HB 6777)	<p>This grossly misstates what an NFPA study actually shows. NFPA data shows your survival rate in a home fire increases from 99.62% (without sprinklers) to 99.82% (with sprinklers) - assuming in both cases you have working smoke detectors. NFPA looked at the <u>avg. fire death rate per 1,000 reported home fires</u>, and compared (A) homes with hardwired smoke detectors <u>but no fire sprinklers</u>, and (B) homes with battery or hardwired smoke detector <u>and</u> installed sprinklers. The rate of fire deaths per 1,000 reported fires for (A) is 3.8 deaths out of 1,000 home fires (or a 99.62% survival rate), and for (B) is 1.8 fire deaths (or a 99.82% survival rate). In terms of lives saved, it's 996.2 per 1,000 fires without sprinklers versus 998.2 per 1,000 fires with added sprinklers. Yet, that incremental increase in lives saved will cost society \$1 billion + per life (see next line). And, even with fire sprinklers, there will still be 1.8 deaths per 1,000 fires. The data (NFPA's own data) overwhelmingly shows it is smoke detectors that save lives.</p> <p>It also overwhelmingly demonstrates the law of diminishing returns. It's like saying you can be struck by lightning 1,000 times and with a special suit (aka home smoke detectors that cost \$500 - \$600) you'll survive 996.2 times. But if you buy a super special suit (aka sprinklers, costing an add't'l \$15,000, \$20,000 or more) you'll survive 998.2 times.</p>
Sprinklers are a reasonable and cost effective way to save lives.	<p>There are just over 1.4 million housing units in CT, and just under 73% are 1&2 family homes. Fire data from the US Fire Administration shows 23 fire fatalities in CT in "residential settings" in 2014. 12 were in multifamily structures, 11 in 1&2 family homes, and <u>where age could be determined all of the homes were built in 1960 or earlier.</u> That's one fire death per 92,000 homes. At "only" \$11,000 cost of sprinklers per home (<u>a very low avg.</u>) that's over \$1 billion to, statistically, save the next life. Real sprinkler quotes from installers have come in at \$6+ / sq. ft. or \$15,000 to over \$20,000 per home.</p> <p>There is nothing reasonable or cost effective to these numbers.</p>

<p>The cost of sprinklers is equivalent to granite countertops, or wall to wall carpeting, or the cost "to put a front door on their home."</p>	<p>Proponents obviously do not know the cost of granite countertops, flooring or doors, all of which are far less than sprinklers. But, more to the point, are proponents suggesting consumers should trade off granite countertops, wall to wall carpets or front doors so they can afford sprinklers? Legislators should offer that trade off to new home constituents in their districts and see what they say. Ask your constituents what they would have paid to have sprinklers in their new homes and see what they say - See next line.</p>												
<p>If consumers were only educated to the benefits of sprinklers they would pay for them.</p>	<p>Maybe, but unlikely. But even if true this calls for an education campaign, not a construction mandate. An extensive survey of home buyers regarding sprinklers was done in Indiana and showed the following results: When asked, "if fire sprinkler systems were offered as an option for your new home, what is the most you would be willing to pay for it?" For a typical 3 bedroom home:</p> <table border="0"> <tr> <td>Choose not to have fire sprinklers regardless of cost:</td> <td>49%</td> </tr> <tr> <td>\$3,000 to \$4,000:</td> <td>31%</td> </tr> <tr> <td>\$5,000 to \$6,000:</td> <td>9%</td> </tr> <tr> <td>\$7,000 to \$8,999:</td> <td>2%</td> </tr> <tr> <td>\$9,000 to \$10,999:</td> <td>1%</td> </tr> <tr> <td>\$11,000 to \$13,000:</td> <td>1%</td> </tr> </table> <p>At the real costs of \$15,000, \$20,000 and up, it's the very rare home buyer who wants sprinklers installed in their home.</p>	Choose not to have fire sprinklers regardless of cost:	49%	\$3,000 to \$4,000:	31%	\$5,000 to \$6,000:	9%	\$7,000 to \$8,999:	2%	\$9,000 to \$10,999:	1%	\$11,000 to \$13,000:	1%
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<p>"40, 29, 8 and 5 are the only stats you need to know." This cites a UL "study" that shows that older legacy homes will collapse in a fire in 40 minutes and flashover in 29 minutes, while modern homes collapse in 8 minutes and flashover in 5 minutes, based on test burns of homes with three different configurations. This is blamed on both allegedly "new" lighter frame (i.e., truss) construction and modern synthetic furnishings that are in newer homes. Light frame construction is also blamed on threats to fire fighters.</p>	<p>The "new" light frame construction argument is just wrong and the UL study has been discredited. Collapse of a structure is determined most by how fire impacts the structural elements of home construction and especially when the fire starts in a building cavity where it could be in contact with lightweight building materials. Yet, lighter frame truss construction has been used in home construction since the 1950s. It's not new at all even though firefighters cannot seem to learn this. <u>See here from the pen of a fire battalion chief</u> who is also a building contractor.</p> <p>Firefighters themselves are finally only recently beginning to question tactics when fighting fires with known truss construction. And, HB 5348 (2015) would establish a truss notification system to protect firefighters, which the HBRA would likely support. About 60% of new home construction today uses truss construction while 40% uses traditional framing. According to NIST, "the number of collapse fatalities on an annual basis has declined since 1979." Finally, according to NFPA, only 3.1% of fires reported originated within concealed structural locations, causing 2.8% of civilian fatalities – the reason being due to enforcement of code requirements for properly installed fireblocking.</p> <p>Flashover is determined most by contents in a home, not construction. The UL study assumed new homes are filled with all new, more flammable synthetic furnishings, while older homes are furnished with more flame resistant older furnishings. Yet, when people move from an older home to a new home, most take their existing furnishings with them. It also presumes owners of older homes don't buy new furnishings. Both assumptions have no basis in reality. Perhaps the solution is to require better fire retardants in new furnishings, over which builders have no control.</p>												

<p>Sprinklers cost only \$2/sq ft.</p>	<p>This number comes directly out of the 1996 fire sprinkler legislative task force report. That's 20 years old. Has labor increased since then? Have material costs increased since then? Real quotes received from sprinkler installers today have are in the \$6/sq.ft range. And, the NFPA 13D standard, which all home sprinkler installations must meet, requires you to sprinkler basements, so a 2,000 sq. ft. home will require an additional 1,000 sq ft., a 3,500 sq ft homes could require 5,300 sq ft to be sprinklered.</p>
<p>Cost of sprinklers is only \$6,000 to \$7,000</p>	<p>Again, this also comes out of the 1996 legislative report. It's very old data and very old costs. At \$6/sq.ft., a new 2,000 sq.ft. home today would cost \$18,000; a 3,500 sq.ft. home would cost \$21,000 – NOTE the math – it's because under the code sprinklers must also be installed in basements, so what is called a 2,000 sq. ft home requires about 3,000 sq.ft of sprinklered space. One fire fighter at the 2015 public hearing on HB 6777, who stated he felt it necessary to sprinkler his new home to protect his family responded to the cost question by saying it cost him \$12,000 - \$14,000. We can show you real quotes sprinkler installers provide to builders.</p>
<p>The CT Residential Fire Sprinkler Research Working Group has been cited as a broad based group with all stakeholders that should be taken as the authority on this issue. Proponents have offered to send it to the Public Safety Committee.</p>	<p>We, too, cited to this report in the HBRA's 2015 testimony. We hope you look at it and look first to the last page listing the working group members. Created as a "compromise" by the state Codes & Standards Committee when it rejected the sprinkler mandate, this group, totally dominated by sprinkler proponents, was 34 members and the HBRA had one (1) rep on the group. In fairness, we hope you also look at the dissenting comment memo the HBRA rep filed with then DPS (now DAS). The working group nonetheless, even as one-sided as it was, pointed out a number of problematic hurdles to implementing a sprinkler mandate, all of which remain to this day. All posted at: http://www.hbact.org/FireSprinklers</p>
<p>"All model safety codes now require the use of home fire sprinklers in new 1&2 family homes."</p>	<p>In reality, the only <u>two</u> model codes for homes do require sprinklers. But, the nation's model codes are far from perfect and are subject to special interest lobbying pressures as much as legislatures. What's not said about the two model codes (i.e., all of them) is one such code for new construction is written by the NFPA itself and is not used in virtually any jurisdiction for 1&2 family homes. The other code is the IRC (International Residential Code), used in most states, that's produced by the International Code Council (ICC). Also what's not said is how the ICC code hearing that led to the sprinkler mandate adoption was rigged by sprinkler manufacturers, who even paid for voting fire officials to attend the hearing. All documented here: http://www.hbact.org/FireSprinklers#Sprinkler_Mandate_Rigged. Also what's not said is, as of Jan 2013, forty (40) states have removed this mandate when adopting the IRC "model" code; some have passed legislation prohibiting the sprinkler mandate in new homes. And, some states are even moving away from the ICC codes because of the irregular voting procedures that led to this mandate's adoption. Model codes necessarily require state review and because they're not perfect, these "models" are substantially amended on a number of provisions.</p>

<p>Consumer costs are offset by reduced homeowner's insurance.</p>	<p>Not true. Real quotes from real insurance brokers, including a Hartford area firm that does extensive work with new homes, quotes the cost savings at \$18/yr. What's not said is the annual or quarterly (we're not sure which; both were stated at the 2015 public hearing) maintenance costs for the sprinkler system. Sprinkler installers testified that they perform this service and it should be similar to one's annual maintenance service on a furnace, about \$200 - \$300 per year, far exceeding any annual insurance savings. Also what is not said are the occasional malfunctions of sprinkler systems that cause water damage when there's no fire that has occurred. See, for example, the <u>Wallingford Library sprinkler malfunction</u>.</p>
<p>Sprinklers add value to a home's resale.</p>	<p>Not true. This obviously does not come from anyone who sells homes. Sprinklers are not desired by buyers – see the survey results above. Just because something costs a certain amount does not mean it automatically gets added to market value. That's the reality of how real estate markets work, indeed how any free market works for any product. Sprinklers are, in fact, a marketing liability. Real estate brokers also report that some buyers disable sprinklers by shutting off the water valve to the system. Rightly or wrongly, they don't want to risk potential water damage and a buyer's belief is very determinative of market value.</p>
<p>"Let's face facts. Smoke detectors don't work. People and children sleep right through them."</p>	<p>Again, the NFPA own data shows survival rates in homes with fires is 99.62% when hard wired smoke detectors are available. That's 996.2 out of 1,000 home fires there is no death. It does rise from 99.62% to 99.82% when sprinklers and smoke detectors are both available. Also, we have found no evidence of a home fire death in CT in a home built since 1985, when hard wired smoke detectors were first required in new home construction in CT. Fire deaths occur in older homes (homes built prior to 1985), not new homes, and most likely when smoke detectors are not present or working.</p>
<p>The latest argument made by proponents of a sprinkler mandate professes their concern for the potential liability of Codes & Standards Committee members if they do not adopt the mandate.</p>	<p>Obviously not an argument made by an attorney, although made directly to Codes and Standards late in 2015 by the sprinkler coalition in attempt to pressure them to not exempt the mandate from the 2012 IRC. This argument has no basis in law. <u>See the HBRA's response, also provided to Codes and Standards.</u> As our statement concludes, for all of the logical and legal reasons noted, CSC members would not be liable for exercising their governmental discretion to not adopt the ICC's sprinkler mandate for the state.</p>