

# SAME OLD LINES

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For the past few decades the line has been drawn up in the sand, separating the proponents and the opponents of the mandatory requirements for installation of residential fire sprinkler systems in all newly constructed homes. On one side, under the banner of "cost", the home builders, represented by the National Association of Home Builders (NAHB) oppose the requirements for installation of the residential fire sprinkler systems. And on the other side of the issue, under the banner of "life safety", stand the fire service and all other advocates and proponents from the fire prevention and protection fields, who demand mandatory requirement of residential fire sprinkler systems in all new homes, to decrease the fire fatalities.

It was only a couple of years ago that the proponents of the residential fire sprinkler systems achieved a significant milestone, by finally revising the codes and standards developed by the National Fire Protection Association (NFPA) to mandate installation of fire sprinkler systems in all newly constructed one and two family dwellings. This was an accomplishment, and in a sense a moral victory in this vast battle ground; but indeed not yet the triumphal end of the war. It is important to recognize that the absolute majority of the houses built in our country are constructed based on the International Residential Code (IRC), developed by the International Code Council (ICC). And as of yet, ICC has not revised their residential building code to require installation of fire sprinkler systems in all new homes. Therefore, the absolute majority of the approximately 1.5 million new homes constructed across the country every year are still built without the protection of the residential fire sprinkler systems.

Interestingly enough, NAHB proudly considers this to be their major victory. In their October 9, 2006, News Release titled "Builders Win Big in First Code Hearing Round" posted on their website; NAHB declares that "*NAHB scored significant wins for construction design, safety, security and affordability at the annual meeting of the International Code Council in Orlando, Fla., where more than 2,200 code change proposals were presented for consideration.*" This same stance was previously repeated in their October 2, 2006, News Release titled "NAHB Defeats Mandated Fire Sprinklers at Code Hearing" where NAHB stated "*citing their high costs and significant installation and maintenance problem, NAHB representative attending the International Code Council's code development hearings in Orlando, Fla., last week resoundingly defeated proposals to mandate fire sprinklers in one- and two family homes.*" Once again, cost of the fire sprinkler systems was their main concern, and in the same News Release they stated "*currently, installation costs range from \$2 to \$7 per square foot, builders say.*"

An important point to be cognizant of is that the cost of the residential fire sprinkler systems are not absorbed by the home builders. They simply pass it along to the consumers, just as they do with all other increased costs of land, labor, materials, etc. In our national economic system of capitalism, the basic free enterprise rule of supply and demand governs the market. Needless to say then, there are numerous economical factors that are beyond the control of the NAHB that have contributed even more significantly to the increasing of the construction cost of the new homes in America.

Our own personal experiences as individual home buyers, in addition to the available national statistics, clearly point out that even despite the current housing market stagnation, the cost of new homes in America has skyrocketed during the past couple of decades. National statistics are indicative that such increases in cost would make buying new homes less affordable for the first-time low-income buyers. Despite the fact that the cost of land, labor and materials are the most significant contributing factors to such cost increases; NAHB still tends to focus extensively on the cost of the residential fire sprinklers.

In their July 31, 2006 News Release titled "Michigan Builders Fight Costly Residential Fire Sprinklers" posted on their website, NAHB stated that "*when sprinklers cost \$2 to \$3 per square foot, you're pricing out the families who would most benefit from an affordable new home, and allowing them to remain in an older poorly maintained home that's demonstrably less safe. That is the paradox of mandatory sprinkler requirements – you end up putting even more people at risk.*"

In their statement about the “older, poorly maintained home that’s demonstrably less safe”, it is not clear whether these buildings are “less safe” because of the age of the buildings, or the human factor and behaviors. Regardless though, the real “paradox” is the fact that the proponents of the residential fire sprinkler systems could not agree with the NAHB anymore on this very exact issue. The proponents of the residential fire sprinkler systems believe that precisely because the age deterioration of the buildings and the human factor, protecting of the new homes of today with fire sprinklers, will undoubtedly result in reduction of fire fatalities in future. After all, these “demonstrably less safe” homes of today that NAHB refers to were once new homes many years ago, built by the home builders that claimed them to be the highest quality. Needless to say, if only they had installed residential fire sprinkler systems in them when they were being constructed, they would be much safer today.

Just like the lumber industry that plants trees for their future harvest decades down the line, it should be acknowledged that building new homes today without the protection of residential fire sprinkler systems, would undoubtedly result in abundance of “demonstrably less safe” homes in the future. It is only logical to conclude that unprotected buildings of today, would directly contribute to the future fire loss statistics. The proponents of the residential fire sprinkler systems have longer range views and believe that this cycle of unnecessary destruction must end now. They believe that mandating installation of residential fire sprinkler systems in all new homes, not only protects the new homes today but also as they age, thus resulting in less fire fatalities in future.

NAHB’s statement in that News Release though is indicative of their offensive posture. Their statement is indeed bold and quite interesting, because the NAHB has now forced the ball to the court of the proponents of residential fire sprinkler systems. In a sense, NAHB is claiming that not only the proponents of the mandatory residential fire sprinkler systems are to blame for the first-time low-income buyers not to being able to fulfill their American dream of owning a new home. But, NAHB also implicitly blames the fire safety promoters for endangering the people and putting them at more risk by requiring the new houses to have fire sprinklers, thus making them less affordable.

Besides the unsubstantiated assertions, the other interesting statistic in that News Release is their stated maximum cost of \$3 per square foot to install residential fire sprinklers, which is far less than the previous \$7 per square foot that they have claimed in their other News Release. Considering that NAHB’s prime focus appears to be the cost of the residential fire sprinkler systems, and also the fact that their cost estimates seem to widely fluctuate, it is of value to focus on it more in depth. Thus, the following paragraphs will briefly discuss the economics aspects of the residential fire sprinkler systems from a historical perspective.

Despite NAHB’s beliefs, fire service, fire safety advocates, and the proponents of the residential fire sprinkler systems have always been cognizant of the impact of cost to the consumers, and have consistently tried to reduce such adverse impact. Back in 1973, after almost two years of research commissioned by President Nixon, the National Commission on Fire Prevention and Control published their America Burning report. This report was a very comprehensive analysis of the fire problem in America for that era.

On page 129 of the America Burning report, it is stated that “*Reliable estimates place the cost of automatic sprinkler systems between \$0.65 and \$1.25 per square foot, depending on the difficulty of installation. While this is roughly similar to the cost of carpeting, we recognize that the cost could be burdensome to many owners.*” It is quite interesting that the cost estimates for installation of fire sprinkler systems back in 1973 is quite similar and in the same range as today’s cost estimates. Also interesting is the fact that the proponents of the fire sprinkler systems were aware of the cost impact of this life-saving technology even back in 1973.

Just to give a historical perspective, back in 1973, a gallon of gas was only \$0.38. But, in 2006, discarding the seasonal price surges, the national average cost for a gallon of regular gasoline fluctuated around the \$2.50 range. Thus, while we now pay about 7 times more for filling our gas tanks, the average cost of installation of fire sprinkler have only risen modestly. According to Home Fire Sprinkler

Coalition (HFSC), currently, the average home fire sprinkler system adds 1% to 1.5% the total building cost. In jurisdictions that have long mandated the residential fire sprinkler system requirements, such as Scottsdale, Arizona, due to the tremendous volume of work, the prices have fallen off to below a dollar per square foot; but the national average seems to be in the \$1.00 to \$1.50 per square foot range.

Based on the statistics available on the NAHB's website, back in 1973, the average cost of a new home in America was about \$35,500. Even considering that last year, the housing market had the sharpest drop in new home prices since the seventies, on October 26, 2006, CNN reported that in September 2006, the average cost of new homes was still \$293,200.

I am by no means an economist or an expert statistician. But utilizing the available calculation tools and statistics on the various government sites, anyone can perform the basic calculations and duplicate the results mentioned in this article. Using the Consumer Price Index (CPI) inflation calculator, provided on the U.S. Department of Labor's website, it is easy to calculate that the average \$35,500 new home back in 1973, should hypothetically cost the consumers \$161,110 today. But then the actual average cost of new homes in 2006 is \$293,200. This means that the consumers are paying an extra \$132,090 more than they would have, even including the inflation factors.

It is also interesting to know that based on the U.S. Census Bureau statistics, the federal minimum wage in 1973 was \$1.60. And now there are debates on the Hill, to raise the federal minimum wage from the current \$5.15, to keep up with the inflation. These numbers clearly indicate that while the minimum wage in 2006 is 3.2 times more than what it was back in 1973, to buy a new home, consumers must now pay about 8.26 times more than they did back in 1973.

That indeed proves that the new homes today, are significantly less affordable for the first-time low-income buyers. But that being said, then who is really responsible for increasing the cost of new homes and making them less affordable for the low-income first-time home buyers? Surely, not the fire safety advocates, since these new homes are not even protected by residential fire sprinkler systems to begin with.

Back in 1973, the cost for installation of fire sprinkler systems was about \$0.65 to \$1.25 per square foot. Using the same CPI inflation factors as mentioned above, in 2006, adjusted for inflation, the cost for installation of residential fire sprinkler systems should have been about \$2.95 to \$5.67 per square foot. The range of these hypothetically calculated numbers are lower than the NAHB's own cost estimates of \$2 to \$7 indicated in their previously mentioned News Release. Fact of the matter is that the actual \$1.00 to \$1.50 per square foot current average national cost to install residential fire sprinkler systems is merely about one third of what the hypothetical inflation adjusted cost should have been.

Back in 1973, the average square footage of the house was around 1,660 square feet. Multiply this average square footage by the \$0.65 to \$1.25 cost factors of that era, the average cost for installing fire sprinklers would have been about \$1,079 to \$2,075 back in 1973. And this cost would have been about 3% to 5.8% of the total cost of the new homes back in 1973. But again, based on the HFSC statistics, currently the average home fire sprinkler system adds only 1% to 1.5% the total building cost. The fact of the matter is that because of the technological advancements, abundance in product availabilities, and also addition of more qualified labor and specialized fire sprinkler companies, during the past twenty years, the cost for installation of fire sprinkler systems have dropped significantly, and they are much more affordable now than they were back in 1973.

Just like with any additions, there indeed is a cost increase to install residential fire sprinkler systems in all new homes. But then statistics show that such increases are only marginal when compared to the other major cost increases, such as land, materials and labor increases. Thus, NAHB's claim that the proponents of the residential fire sprinkler systems are not only responsible for the less affordable homes, but also are the culprits for imposing higher risk on the people, should merely be viewed as campaign propaganda tactics. And at best, it should only be interpreted as an outrageous aggrandization.

In the September 2006 issue of the NFPA Journal, the article titled "Fire Loss in the United States During 2005" stated that "*with home fire deaths still accounting for 3,030 fire deaths or 82% of all civilian deaths, fire safety initiatives targeted at the home remain the key to any reductions in the overall fire death toll.*" The same claim is also repeated on the HFSC's website, where they indicate that "*installing both smoke alarms and a fire sprinkler system reduces the risk of death in a fire home by 82% relative to having neither.*"

Simple affordable life-saving technologies, such as the smoke alarms and the residential fire sprinkler systems, have been available for decades. But, while smoke alarms are now quite common in our households, and 96% of our homes have smoke detectors installed in them, residential fire sprinkler systems have unfortunately been installed in only 2% of homes in our country.

Installation of residential fire sprinkler systems in all new homes will not have an impact on the fire loss in all of the existing homes throughout the country. But, then it would definitely have a long-term positive impact on the 1.5 million new homes constructed around the country every single year. And if we don't address this problem now, these new homes of today will be where we will be fighting the fires of tomorrow, and where we will be collecting our future fire fatalities and loss statistics. It is precisely from this angle that the proponents of the residential fire sprinkler systems believe that national efforts should be focused on persuading the International Code Council (ICC) to modify their 2009 edition of the International Residential Code (IRC), to require installation of residential fire sprinkler systems in all new homes.

Just like anything else in our democratic ways in America, change will only come about through mass participation in the established process. ICC has scheduled their Final Action Hearing for May 21-26, 2007, in Rochester, New York; and their Annual Conference is scheduled for September 30 through October 4, 2007, in Reno, Nevada. To see any changes at all, fire prevention advocates and fire safety proponents must participate in full force and with all their might in the ICC's code development process.

More than three decades has passed since the publication of the 1973 America Burning report, and yet the crux of the fire problem in our country is still the residential occupancies, just as it was back then. While the advancement in technology has lowered the cost of installing residential fire sprinkler systems in homes, NAHB, as the major opponent to the life-saving residential fire sprinkler systems, still uses the same old lines, and claims cost as the main justification for their opposition.

On the other hand, proponents of the residential fire sprinkler systems, just as I, have historically focused solely on savings of lives, as our main battle cry. In my professional opinion, life safety is the highest criteria and the most important factor, and simply the essence of our core philosophical stance. But to deflect the barrage of inaccurate claims that the opposition has consistently and quite effectively used against us for the past three decades, we need to start focusing more extensively on the economics aspect of the issue, explaining to the public the invalidity of our opposition's cost impact claims.

And rather than the jurisdictional and regional approach to modify the local codes and ordinances, with common purpose and strong resolve, we must approach the ICC and participate in their code development process at the national level. We must face the opposition; not splintered, but unified.

To be able to defeat the claims of our respectable opponents in the national debates for residential fire sprinkler system in the code hearings, we must be prepared and focus on addressing the cost issues in addition to the life safety angle that is so dear to our hearts. We must have the facts and the statistics that soundly expose the flaws and the weaknesses of our opponents' logic. NAHB has used the same old lines for the past several decades. But then, they do not hold true in this day and age. We might know that to be the undisputable fact in our own minds and hearts; but to succeed, the general public must be well aware of them also.