

NIST Study Shows Homeowner's Gain with Installation of Fire Sprinkler System

A new study by the National Institute of Standards and Technology (NIST) found that for new home construction, a multipurpose network sprinkler system that connects to a house's regular water supply and piping makes good economic sense. NIST's Benefit-Cost Analysis of Residential Fire Sprinkler Systems report, released last month, examines data from 2002 to 2005 to value the economic performance of a residential "wet-pipe" fire sprinkler system. The study builds on a prior cost analysis developed by NIST's Building and Fire Research Laboratory and offers a current analysis of the economics of residential fire sprinkler technology.

According to NIST, the cost in 2005 dollars for adding a multipurpose network sprinkler system to a house under construction was approximately \$2,075 for a 3,338-square-foot colonial-style house, \$1,895 for a 2,257-square-foot townhouse and \$829 for a 1,171-square-foot ranch house. However when a house fire occurs, the estimated benefits of a residential fire sprinkler system include a 100 percent reduction in civilian fatalities and a 57 percent reduction in civilian injuries, a 32 percent reduction of both direct property damage and indirect property costs. Houses with sprinklers, in addition to smoke alarms, also received an 8 percent reduction in homeowner insurance premiums, over houses only equipped with smoke alarms.

After subtracting installation costs and weighting the benefits by the odds that a house would catch on fire, NIST economists concluded that, depending on assumptions, the net gain from installing a sprinkler system (in 2005 dollars) would vary between \$704 and \$4,801 for the colonial-style house, between \$884 and \$4,981 for the townhouse, and between \$1,950 and \$6,048 for the ranch-style house, over the 30-year study period. In all cases examined, the researchers found that the data supported the finding that multipurpose network residential fire sprinkler systems are cost-effective.