

Accessible Home Fire Sprinkler Demonstration Trailer

Fire Protection Publications at Oklahoma State University designed and built a Home Fire Sprinkler Demonstration Trailer which is used to demonstrate the effectiveness of fire sprinklers in the home. The desire was not only to benefit the general public, but also to be fully accessible to people with disabilities. Special design elements are targeted to people who are blind or have low vision, people who are deaf or hard of hearing, and people who are mobility impaired and may use a wheelchair or other mobility equipment.



The design of the trailer consists of three rooms: An interior viewing room, a live fire demonstration (middle) room, and the sprinkler control room. The demonstrations may be viewed from the interior which is climate controlled, or externally from either side through large, low windows. The trailer has an ADA compliant ramp to bring people into the interior viewing room and a large retractable awning on the outside for shade when needed.



Specialty equipment on the exterior of the trailer includes an LCD screen for sign language translations or viewing video; an LED board for displaying demonstration times, captioning, or other announcements; and a public address system. The interior viewing room is equipped with sprinklers not only to protect the viewers, but also to dispel the myth of all sprinkler heads activating at once. This has proven to be an effective teaching tool. There is a large countdown clock which tracks the amount of time that has passed from fire ignition to sprinkler activation.



A typical demonstration begins with a discussion of the importance of home fire sprinklers, common misconceptions of their functions, how and when they activate, fire extinguishment, the installation of sprinkler systems; as well as the installation of smoke alarms, their importance and maintenance; and general home fire safety education.



The demonstration continues with a live fire set in the burn room. Four pieces of newspaper are ignited in a metal trash can below a hanging curtain made of cotton. Once the newspaper is lit it takes the fire only a few seconds to spread to the curtain and raise the temperature at the ceiling to 155 degrees F. At this point the sprinkler head activates and the fire is extinguished.



Home fire safety educational materials in booklet form, customized for the specific needs of people with disabilities, are given to attending consumers. The booklets are offered in a variety of formats including copies in large print, regular print, and Spanish large print. In addition to the printed booklets the information is available in braille, audio tape, and CD. Additionally a DVD in American Sign Language was produced for adults who are deaf and offered. The DVD which has voice over and captioning options is an alternative to the printed booklet for people who are deaf.

The fire pump and piping are all rated and listed residential components, and is an example of what a residential system in a typical home might look like. The trailer is completely self-sufficient. It is equipped with a generator and several hundred-gallon water tank. The water used to extinguish the fire is recycled and used again. The system can also be operated directly from a fire hydrant without using the fire pump.

Funding for the sprinkler demonstration trailer was made possible through Assistance to Firefighters, Fire Prevention and Safety Grant Program. Housed in the College of Engineering, Architecture and Technology, Fire Protection Publications designed the unique trailer with assistance from the School of Fire Protection & Safety Technology and the School of Mechanical Engineering Technology at Oklahoma State University.

The staff provides demonstrations to interested groups and also at large public events, conferences, and fairs. The Home Fire Sprinkler Demonstration Trailer was first unveiled at the National Fire & Emergency Services Expo on the National Mall in Washington, D.C. in April 2008.



For additional information contact Fire Protection Publications, Research Department, at 800-654-4055.