FIRE SAFETY

Don't Keep the Home Fires Burning

NewsUSA

(NU) - In January 1998, fire erupted from the gas water heater in the Crowders' 1950s ranch-style home. Although the family escaped unharmed, their wood frame home was destroyed within 15 minutes despite an immediate response from the local fire department.

Unfortunately, the Crowders are not alone. According to the National Fire Protection Association, 76 percent of all structure fires in the United States in 2001 occurred in residences, resulting in $4.65 billion worth of property loss in one- and two-family dwellings alone. Fire also kills more Americans than all natural disasters combined, with 84 percent of all fire deaths occurring in residences.

While the nation's fire statistics have improved over the years, the National Concrete Masonry Association maintains that those gains have been restricted by "trade-offs" made within building codes to reduce containment requirements provided by passive firewalls.

The Crowders, who decided to rebuild their home, chose concrete masonry construction to provide the fire safety for their new home. Concrete masonry is used throughout the home for both interior and exterior walls.

"Concrete masonry is noncombustible," said Tom Crowder, an architect with Architektur, PA in Raleigh, N.C. "Obviously, if we used concrete masonry, we'd have at least a one-hour fire rating."

In fact, his home's walls provide much more protection than that. Exterior walls constructed using two 4-inch wide masonry units separated by a 2-inch air space provide a minimum fire rating of over three hours. Depending on the mix used to manufacture the concrete masonry units, this same wall could provide a fire resistance rating of almost six hours.

Interior walls were built using hollow, 10-inch wide concrete masonry units, which provide a fire rating of two to four hours.

Crowder took special care with the heating and air conditioning equipment — the source of the original fire. To prevent gas appliance fires from spreading through the home, Crowder completely enclosed the equipment room with all masonry.

This fire safety design approach, known as compartmentation, is readily used in commercial construction but is less frequently seen in residences. Compartmentation isolates one part of a building from another, containing fire and smoke and preventing fire from sweeping through and destroying an entire building. For containment to work, the entire room must be fire-rated, including floor, ceiling and doors or windows.

For the Crowders, concrete masonry's attributes have paid off.

"Though my family will never forget the pain of that January morning, we have risen from the ashes to a far more functional, fire-resistant and comfortable environment in which to live our lives," Crowder said.

Citizens concerned about lax building codes may send e-mail to their elected representatives at www.ncma.org/fire.