



Stucco Manufacturers Association

Why Stucco Homes Survive Fires

Many of these homes incorporated special design features that prevented the fires from destroying them.

The recent fires in the West demonstrate the importance of building with stucco. In 1993, 2003, 2006, and again in 2007, severe fires broke out in wilderness areas but quickly spread to endanger nearby homes. Thousands of homes were destroyed in these fires, but the ones that survived against the odds were not just lucky—many of these homes incorporated special design features that prevented the fires from destroying them.

The firefighters and city officials interviewed after these disasters saw the value of stucco first-hand:

"You can sit up on a road and see the fire burn up to the tile roofs and stucco buildings, and it just keeps moving" —Fire Chief Ernylee Chamlee, California Department of Forestry and Fire Protection¹

"Take one lonely structure standing... The houses around it are gone, and combing through their rubble one can discover they had wooden shake roofs and wooden siding. In contrast, the surviving home is stucco with slate and stone detailing... The house even served as something of a tackling linebacker for others near it. The wildfire was

clearly slowed—if not stopped—by its construction, and the homes directly behind it survived with little damage."²



This house survived the 1993 fires in Laguna Beach, CA because of special design features and stucco cladding.

"It's almost like you have to pick the house that you can save and pass the other ones that you can't. And, you know, things like shake-shingle roofs and things, you almost have to pass those up. There's people that put shake all over, the side of their houses that just light right up."

—Captain Don Sander, San Diego Fire Department³

Stucco Is Fire Resistant

By its nature, cement-based stucco does not burn. In fact, the furniture of a house will combust from the heat of a fire before the

stucco is affected.⁴ By building with stucco, the vulnerable contents and structure of a building are protected behind a 7/8" thick layer of cementitious stucco. Anything the building designer can do to remove combustible materials from the exterior of the home will increase the home's ability to withstand a fire.

Best Practices for Fire Prevention

The houses that have survived the recent Western fires provide some practical lessons in how to build for fire prevention. The Stucco Manufacturers Association will assist homeowners and design professionals with these details, which include:

- Use 3-coat stucco as the exterior cladding.
- Use only non-combustible accents, including stone and masonry.
- For window and door trims, use foam shapes coated with mesh and cementitious foam coating materials available from SMA members.
- Use cement or clay roof tile or other non-combustible materials.
- Use tempered or dual-pane windows to knock down heat and prevent fire blow-outs to slow down the entry of the fire to the interior of the home.
- Eaves, or overhangs, are places where embers can swirl and fires can start. On enclosed eave homes, 3-coat stucco should extend from foundation to roof, and coat all eaves. On open eave homes, 3-coat stucco should extend from foundation to roof, and terminate at the 2X solid blocking.
- Do not put attic vents under the eaves where burning embers can blow into the attic. Cover all attic vents with 1/4" wire mesh.
- Pay attention to decks as well. These can be built from non-wood composites or out of decorative concrete, tiles, or pavers. Also ensure that areas under elevated decks are enclosed with stucco to prevent ignition there.
- Build walls out of concrete block and stucco instead of wood, which can serve as a fuse to lead fire to a home.
- Clear excessive landscaping from around the home, instead using non-combustible walkways that serve as fire breaks.
- When homes are built close together, take extra care to remove combustible materials to prevent the spread of fire from house to house.



This San Diego-area community survived the 2007 wildfires thanks to stucco and smart design features.⁵

¹"Few areas in West enforce strict fire codes," *USA Today*, November 11, 2004.

²"Some homes beat the heat," *Chicago Tribune*, October 29, 2007.

³ABC News Broadcast, October 30, 2003.

⁴"Fire-Resistant Details," *FineHomebuilding.com*. By John Underwood, June 1, 1995.

⁵"California's surviving homes are not just lucky," *USA Today*, November 1, 2007.

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