

EXACOR® Wall Sheathing in Wildland Urban Interfaces

This technical tip will discuss how EXACOR® wall sheathing panels can be used to satisfy Wildland Urban Interface (WUI) requirements. EXACOR wall sheathing panels are magnesium oxide cement-based sheathing panels that are fire-resistant, dimensionally stable, and can be used in structural applications. Code compliance for EXACOR wall sheathing is provided in ICC-ES ESR-4635.

What is the Wildland Urban Interface (WUI)?

The Wildland Urban Interface is the geographical area where buildings and other human infrastructure are located close to wildlands that are at risk for wildfires. Communities built in these WUI zones must comply with local codes and regulations to mitigate the spread of wildfires.

Building Codes for WUI Zones

The concept of WUI zones has been around since the 1980s to identify areas where human life and property are at risk from wildfires. Due to the increasing development of land near previously undeveloped wildland areas, building codes and supplemental codes have been introduced to address WUI building practices and property maintenance in WUI zones. Several states and local governments have already adopted building codes for structures built in WUI areas, while others are expected to adopt them in the future. Many of these codes stem from the model code, known as the International Wildland Urban Interface Code (IWUIC) published by the International Code Council (ICC), with adjustments based on region-specific requirements. The IWUIC presents a multifaceted approach that addresses fire spread, accessibility, defensible space, water supply, structure hardening and more for buildings constructed near wildland areas. Some states, such as Nevada and Pennsylvania, have directly adopted the IWUIC. In contrast, other states, such as California and Colorado, have developed their own codes that were heavily influenced by the IWUIC. With these codes being relatively new and everchanging, we recommend contacting your local code authority or Authority Having Jurisdiction(AHJ) before construction.

Exterior Wall Requirements in a WUI Zone

Many state and local codes that address WUI zones use the requirements set forth in Chapter 5 of the model code, IWUIC. Other WUI codes may differ in requirements, so we recommend contacting your AHJ to determine any specific requirements in your region.

Several options for exterior walls are presented in Chapter 5 of the IWUIC, including:

1. Materials approved for not less than 1-hour fire resistance-rated construction on the exterior side
2. Approved noncombustible materials
3. Heavy timber or log wall construction
4. Fire-retardant-treated wood (FRTW) on the exterior side
5. Ignition-resistant materials complying with section 503.2 of the IWUIC

Fire-resistance-rated exterior wall assemblies require the exterior facing side of the wall assembly to be capable of achieving a minimum 1-hour fire-resistance rating when tested in accordance with ASTM E119 or UL 263. Non-combustible materials must meet the requirements of ASTM E136, whereas FRTW must meet the requirements outlined in Chapter 23 of the International Building Code (IBC).

The IWUIC includes “ignition-resistant materials” as an option for compliant exterior walls, which is a unique classification of building materials that are capable of resisting ignition and the spread of flames. Ignition-resistant materials must be tested in accordance with the extended ASTM E84 test and ASTM E2768 and meet the following:¹

- ASTM E84:
 - o The test duration shall be extended to a total test period of 30 minutes.
 - o The material shall exhibit a flame spread index not exceeding 25.
 - o The material shall exhibit a flame front that does not progress more than 10 ft. 6 in. beyond the centerline of the burner at any time during the test.
- ASTM E2768:
 - o This is a pass/fail test

In addition to these requirements, ignition-resistant materials must maintain their performance when exposed to the effects of weathering applicable to their condition of use.

1. Section 503.2 of the 2024 International Wildland Urban Interface Code

EXACOR Wall Sheathing in WUI Zones

EXACOR® wall sheathing can be used as part of a fire-resistance rated assembly to meet the requirements of option 1 of Chapter 5 of the IWUIC (a 1-hour fire-resistance rated exterior wall) as detailed in Figure 1.

Fire Testing Results of EXACOR:

ASTM E84	Flame Spread ≤ 10 (Class A) Smoke Developed ≤ 5
Extended E84	Pass
ASTM E2768	Pass



Figure 1: ICC Design No. MOS-1290-04 published in ICC-ES ESL-1290 with EXACOR as the exterior sheathing.

EXACOR Fire-Resistance Rated Assemblies (ASTM E119 / ANSI UL 263)			
ICC Design No.	Typical Application and Construction Type	Fire-Resistance Rating	
		Interior Face	Exterior Face
MOS-1290-03	Exterior Walls - Type III	2 hr	2 hr
MOS-1290-04	Exterior Walls - Residential	1 hr	1 hr
MOS-1290-05	NFPA 285 Compliance Table (Type III)		
MOS-1290-06	Exterior Walls - Type III	2 hr	1 hr

ESL-1290: <https://www.huberwood.com/uploads/documents/technical/ESL-1290.pdf>