

COMPLYING WITH BUILDING CODES

IBC SECTION 2603.5 – EXTERIOR WALLS OF BUILDINGS OF ANY HEIGHT

Flame spread and fire propagation are matters of life, safety, and welfare.

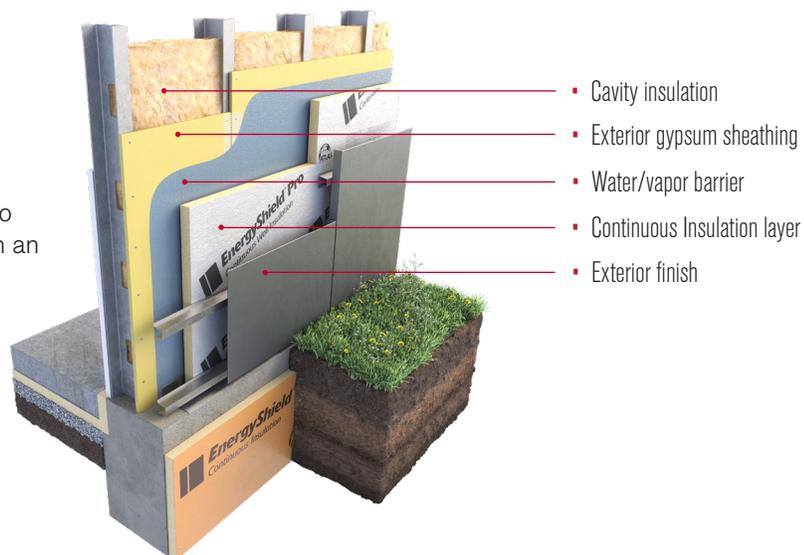
The fire safety provisions of the International Building Code (IBC) are the result of hard lessons learned by failures in the US and other countries, and the collaboration of thousands in the open forum of the International Code Council to carefully consider changes to the codes that can make buildings safer.

Two Criteria. Two Tests.

In Section 2603.5, the International Building Code identifies two separate and distinct fire performance requirements for foam plastic insulations used in exterior walls on most Type I, II, III, and IV buildings of any height. These criteria are consistent throughout the 2009, 2012, 2015, 2018, 2021, and 2024 IBC.

- 1. Flame Spread and Smoke Developed Indices:** Foam plastic insulation core, and any facer on the foam core, must be tested separately and each have a flame spread of 25 or less and a smoke development index of 450 or less as determined by ASTM E84 or UL723 (i.e., Class A), **AND**
- 2. Vertical and Lateral Fire Propagation:** Wall assemblies using foam plastic insulation must comply with NFPA 285 acceptance criteria.

Code requires all foam plastic insulation used in exterior walls to be Class A and to be approved in an NFPA 285 compliant assembly.



Code Compliant. Design Options.

Atlas EnergyShield Pro, EnergyShield CGF Pro, EnergyShield XR, and EnergyShield Ply Pro meet both of these important fire performance criteria. These products are UL Classified as having a foam core flame spread of 25 or less, and boast many approved NFPA 285 assemblies (see DRJ TER 1306-03 for details). With multiple compliant options from Atlas, there is no need to compromise on design by selecting alternative products.

One Flawed Counter Argument.

Other manufacturers may suggest the requirement for foam plastic flame spread may be ignored, that a flame spread of 75 or greater is fine. The justification is that they have met the separate requirement of having the overall assembly approved per NFPA 285. This reasoning is flawed for not considering other factors:

- The flame spread section for exterior walls was purposely a separate requirement, despite the code authors knew that passing an assembly approval was also required.
- The code anticipates that buildings are complex, and include nuances that cannot be anticipated completely by a lab test.
- NFPA 285 does not simulate what happens with flame spread at building corners, in high winds, or at transitions of different claddings, soffits, parapet walls, etc.
- ASTM E84 is used in many sections of the code to classify materials for relative fire risk; the code authors understood the need to specify the lowest risk in exterior walls given the uncertainties that would not be addressed by the NFPA 285 approval.
- Despite being very active in the code process, none of the manufacturers or engineers selling on this flawed reasoning have formally proposed ignoring ASTM E84 for commercial exterior walls for the last 6 code cycles (15 years) and counting.

If a formal proposal is ever brought before the code committee and the concept of ignoring ASTM E84 in commercial exterior walls is considered by all parties and judged to be wrong, the owners or occupants of buildings who purposely chose to ignore the code and sourced non-code compliant products (i.e., NOT Class A) will be disadvantaged. Perhaps this is why the formal proposals have not been brought forth.

The architectural community traditionally adopts a belt and suspenders approach to all hazards, including water intrusion, air leakage, and electrical safety. Disregarding this when considering fire safety in exterior walls would contradict this line of thinking, and be difficult to explain their decision in the event of a major fire incident. Fortunately, Atlas provides solutions that will ensure these concerns will not arise.

Don't compromise – choose Atlas.