Tech Solutions 516.0

DuPont™ ArmorWall™ Systems Pass NFPA 285 Testing

Summary

The **National Fire Protection Association (NFPA) 285 Standard Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior Wall Assemblies Containing Combustible Components** regulates combustible components and the flammability of exterior, non-load bearing wall assemblies. The test is designed to simulate what happens when an interior fire spreads to the exterior of a multistory building. NFPA 285 fire testing standards can be applied in Type I, II, III, and IV construction, which is further explained in Technical Bulletin 517.0.

Undergoing NFPA 285 Testing

When testing a wall assembly for NFPA 285 compliance, a two-story wall assembly with a rough window opening must be built. It must also include all components that will be in a typical installation. It will undergo testing for a full thirty minutes, wherein it must limit fire and smoke propagation both vertically and horizontally, and stay within the required temperature limits.

There are two gas burners that are introduced at differing times during the test. The first gas burner is in the interior of the first story, and is lit at the very beginning of the test. The second gas burner is introduced at the rough window opening from the exterior, and is lit after five minutes into the test. Both gas burners are then burning for the next twenty-five minutes. Once the full thirty minutes are completed, the wall is then inspected for fire and smoke propagation across the first and second stories.

Passing the Test

In order to pass the NFPA 285 and obtain a certificate of completion, there must be visual and temperature-based observations made. See Figure 1 for visual details.

1. Flames cannot extend greater than 10'-0" vertically above the rough opening
2. Flames cannot extend greater than 5'-0" horizontally from the center of the rough opening
3. Flames cannot extend beyond the side walls of the assembly
4. Flames cannot be present in the interior of the second story
5. Temperatures must stay within the predetermined measurements

If all five of these conditions are not met, the wall assembly will not pass the NFPA 285 test. All buildings 40' or higher that

NFPA 285 Testing on a DuPont™ ArmorWall™ System

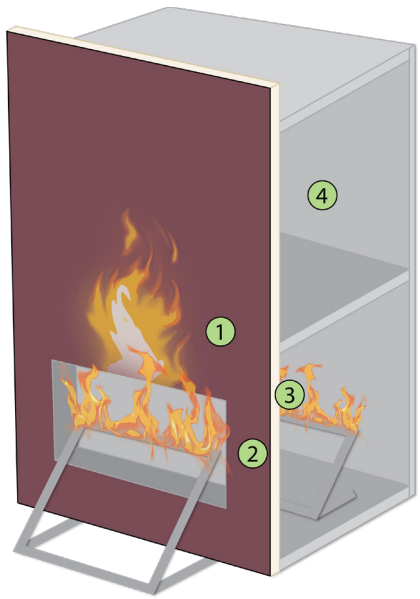

Figure 1: Graphic displaying a typical NFPA 285 test

contain combustible material must comply with NFPA 285. This pertains to foam plastic insulation as well as many types of claddings. In addition, all components must be tested together in order to be listed as compliant; an individual component of a wall assembly cannot be certified as NFPA 285 passing.

DuPont™ ArmorWall™ Systems Pass the Test
DuPont™ ArmorWall™ Systems pass NFPA 285 testing without the additive protection of an exterior cladding on the front. This allows for engineering evaluations to be made for most NFPA 285 approved exterior finishes when used with ArmorWall™ Systems as part of a complete wall assembly.

By fusing the protective Magnesium Oxide (MgO) sheathing on the exterior face of the insulation, the resulting fire-resistant properties are unmatched within the marketplace.

During the test, the ArmorWall™ System had **no**:

- Protective cladding or mineral wool present to shield the panel on the exterior or in the rough opening
- Fire spread over 10' vertically to the second floor, or more than 5' horizontally
- Fire present in the second story interior
- Heavy smoke or high temperature rise present at second floor

For more information, contact us at:
ArmorWall.CustomerService@DuPont.com
Or, visit the DuPont Performance Building Solutions (PBS) Resource Center to view NFPA 285 Assembly Guides, NFPA 285 Certificate of Compliance, and more.

Two-story exterior wall assembly with window for NFPA 285 testing


ArmorWall™ System during the two-hour duration test

For more information visit us at armorwall.dupont.com or call 1-800-448-9835

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