

Understanding the Use of NFPA 285 Engineering Judgments

To Whom It May Concern:

NFPA 285 is the nationally recognized fire test used to evaluate the fire propagation characteristics of exterior wall assemblies containing combustible components. Because NFPA 285 is an assembly test, compliance is based on the performance of the complete wall system—not on any individual product. Variables such as framing, sheathing, water-resistive barriers (WRBs), insulation type and thickness, air space, cladding, and detailing all influence the outcome of the test.

As a result, there are virtually unlimited combinations of wall assemblies that could require evaluation. Conducting a full-scale NFPA 285 test for every possible wall configuration is neither practical nor economically feasible. While project-specific testing remains an option, the cost, schedule, and risk associated with full-scale testing make it uncommon in today's construction industry. Instead, manufacturers typically invest in representative "worst-case" NFPA 285 testing and rely on qualified Fire Protection Engineers to develop Engineering Judgments (EJs), also referred to as Engineering Evaluations, that extend validated test results to comparable wall assemblies using accepted engineering principles.

For this reason, Engineering Judgments have become the accepted industry standard for demonstrating NFPA 285 compliance when project conditions differ from an exact tested assembly. These evaluations are routinely relied upon by architects, building envelope consultants, contractors, code officials, and Authorities Having Jurisdiction (AHJs) to support code-compliant exterior wall designs.

This approach is recognized throughout the building envelope industry. Other major manufacturers including **Henry/CCW**, **Tremco**, and **GCP (Saint-Gobain)** publish NFPA 285 assembly documentation, engineering evaluations, and engineering support for project-specific applications. Henry's published NFPA 285 guidance specifically states that compliant assemblies are based on verified testing and engineering analysis and that its documentation is continually expanded and updated as additional assemblies become available. Likewise, Tremco provides project-specific NFPA 285 Engineering Judgment services and recognizes engineering evaluations as a standard method for supporting compliant wall assemblies.

Independent industry organizations have reached the same conclusion. Publications from **Construction Specifier** and **IIBEC** explain that because an exact tested assembly rarely exists for any individual project, qualified Engineering Judgments based upon existing NFPA 285 testing have become the practical and widely accepted method for extending compliance to similar wall assemblies. These resources also emphasize that a properly prepared Engineering Judgment should be developed by qualified fire protection engineers using established fire science, comparative testing, and recognized engineering methodology.



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AVM Industries follows this same well-established engineering practice. Our current Engineering Evaluation, prepared by **Priest & Associates Consulting** in March 2025, incorporates current NFPA 285 data, flame spread testing, comparative fire performance analysis, and recognized engineering methodology to evaluate numerous compliant wall assembly configurations using AVM water-resistive barriers. The evaluation is based upon recognized NFPA 285 approvals, comparative fire testing, and accepted engineering principles to provide architects, designers, contractors, and building officials with technically sound documentation supporting code-compliant wall assemblies.

AVM is committed to maintaining **one of the industry's most current and comprehensive engineering evaluations** and to providing design professionals with documentation that reflects today's building codes, current fire engineering practices, and the evolving needs of the construction industry.

Engineering Judgments are no longer viewed as an exception to NFPA 285 compliance—they are the practical and widely accepted means by which compliant exterior wall assemblies are evaluated and specified throughout North America. AVM Industries is proud to provide the technical resources necessary to support this process with confidence.

Respectfully,
AVM Industries

References

1. Priest & Associates Consulting, *Engineering Evaluation – AVM Industries WRBs with Various Insulations in NFPA 285-12 Assemblies*, Project No. 11615, March 19, 2025. The evaluation is based on recognized NFPA 285 approvals, comparative fire testing, and accepted engineering methodology to extend compliance to comparable wall assemblies.
2. Henry/CCW, A Carlisle Company, *Henry® NFPA 285 Air Barrier Assemblies*, Effective December 20, 2021. Henry states that compliant wall assemblies are based on verified NFPA 285 testing and engineering analysis and that its published assembly documentation is continually updated as additional compliant assemblies become available.
3. Construction Specifier. *Where to Find Compliant NFPA 285 Test Data (2024)*. Discusses the accepted methods of demonstrating NFPA 285 compliance, including engineering judgments based upon existing test data.
4. Construction Specifier. *NFPA 285 Engineering Judgments*. Explains why Engineering Judgments are widely used when project wall assemblies differ from tested configurations and outlines best practices for preparing technically defensible evaluations.
5. *IIBC. NFPA 285: Extending Data with Comparative Engineering Analysis*. Describes comparative engineering analysis as the accepted method for extending validated NFPA 285 fire test data to similar wall assemblies when full-scale testing is impractical.
6. Tremco Construction Products Group. *NFPA 285 – Frequently Asked Questions*. Explains the role of engineering evaluations in demonstrating compliance and recognizes project-specific Engineering Judgments as a standard industry practice.

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7. Tremco Construction Products Group. *NFPA 285 Engineering Judgment Request*. Demonstrates that project-specific Engineering Judgments are routinely offered by major building envelope manufacturers as part of their NFPA 285 technical support services.
8. GCP Applied Technologies (now Saint-Gobain Construction Chemicals). NFPA 285 assembly documentation and engineering support for Perm-A-Barrier® wall assemblies, illustrating the industry's long-standing reliance on engineering analysis in conjunction with full-scale NFPA 285 testing

Manufacturer	Published NFPA 285 Assembly Guide	Engineering Judgments Available	Current Evaluation Date
AVM Industries	✓	✓	March 2025
Henry/CCW	✓	✓	2021 guide (updates as issued)
Tremco	✓	✓	Project-specific EJs
GCP/Saint- Gobain	✓	✓	Engineering support