



STAHLIN NON-METALLIC ENCLOSURES

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Stahlin J, CF, and F Series Non-Metallic Enclosures Pass UL 2043 for Plenum Space Compliant Applications

THE SITUATION

In a plenum space compliant application, a metal enclosure is most commonly specified as it can meet the UL 2043 requirements. For a long time, specifying engineers sought additional enclosure options for HVAC building controls. The need for finding another option developed because although the paint used to protect the metal enclosure is compliant—it is often smoky. Today, there are viable non-metallic enclosure options that have passed UL 2043 testing.

THE CHALLENGE

The Stahlin Non-Metallic Enclosures engineering team believed that the materials used to manufacture the company's products could pass testing requirements for UL 2043. Stahlin Non-Metallic Enclosures' patented material **SolarGuard®**, a thermoset resin, is formulated with non-halogenated flame retardant additive. Non-halogenated additives produce few emissions and the smoke that is released is white and nontoxic.

Since the development of the **SolarGuard®** formulation, the team had never tested the product line for UL 2043. That is, until a recent customer wanted to view testing results before placing an order. Then, the team quickly worked with the UL testing lab to confirm the compliancy of UL 2043.

The Stahlin engineering team provided the UL lab at the Northbrook testing facility with samples of its J, CF, and F Series enclosures. All three series were subjected to the flame test described in *UL Standard 2043, Fourth Edition*.

THE SOLUTION TO THE CHALLENGE

The Stahlin non-metallic enclosures product specimens that were tested **MET** all **three** requirements for UL 2043, which are:

- The peak rate of heat release measured during each enclosure tested was 100 kilowatts, or less.
- The peak smoke release rate measured during each test was 0.21 m²/s, or less.
- The total smoke released (10 minute test duration) was 75 m², or less.



The Stahlin F Series Non-Metallic Enclosure during testing for UL 2043

The UL Standard 2043, Fourth Edition Flame Test:

The UL 2043 fire test simulates a rectangular volume of air space similar to an air handling space (plenum space) above an enclosed ceiling. The UL technician suspends the product approximately 24 inches above the live gas burner. The air intake occurs through a 12-inch tall opening located below the walls on all four sides. Exhaust heat and smoke rise into an air exhaust hood in which heat and smoke sensors reside. The flame conforms to a heat release rate of 60 kilowatts.

The test determines the rate of heat release and the rate of smoke release of the burning product samples as they relate to the requirements for fire-resistant and low-smoke producing characteristics in accordance with the provisions of the following codes: National Electric Code, NFPA 70; International Mechanical Code, NFPA 5000; and Standard for the Installation of Air Conditioning and Ventilating Systems, NFPA 90A.

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*Stahlin Non-Metallic Enclosure CF Series
during the UL 2043 testing*

“Stahlin Non-Metallic in-house SMC formulation and compounding has always been one of our strengths. These new UL 2043 testing results for Stahlin’s J, CF, and F Series, provides even more evidence as to why our enclosures should be specified by engineers that need long term performance in the field,” stated Roger Schroder, Engineering Manage, Stahlin Non-Metallic Enclosures.

Today, electrical engineers that specify products for HVAC building controls, now non-metallic enclosure have new options to specify on projects---Stahlin Non-Metallic Enclosures J, CF, and F Series.

Contact Roger Schroder for full testing results:
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**FOR MORE INFORMATION ON STAHLIN
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