

The Town of Mansfield

Roof Replacement Options

**Mansfield Middle School
205 Spring Hill Rd. Storrs, Connecticut 06268**

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Prepared by:



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I. Executive Summary

This report is the result of a study commissioned by the Town of Mansfield, Connecticut to assess the current condition of the roofs located at the Mansfield Middle School. To pursue professional recommendations for roof repairs and/or replacements including, but not limited to, projected roof replacement schedules, opinions of probable cost for roof replacement & the analysis of roof coverings for the replacement.

Based on committee feedback and selection, the architects will develop schematic design plans and inventory for the entire facility, based upon to State's Office of School Construction Grants (SCG) guidelines for school roof projects. These documents are intended to serve as record documents for the town and state, and to assist the town during future roof replacement projects.



Birdseye view of Mansfield Middle School

This report was prepared by Silver Petrucelli & Associates, Inc. (S/P+A) of Hamden, Connecticut, an architecture and engineering firm specializing in municipal and school programming, planning and design, feasibility analyses and building condition investigations. This report was developed with input from the officials of the School District and the Municipal Government.

2-ply Modified Bituminous Membrane Roofing:

Modified bitumen membranes -- MBS -- combine the features of a built-up roof with the added tensile strength from its polymer modification. Using a reinforced sheet that is prefabricated in the plant, modified bitumen systems require a less labor-intensive application and can be applied cross-platform in both commercial and certain residential applications.

A modified bitumen roofing system is composed primarily of polymer-modified bitumen reinforced with one or more plies of fabric such as polyester, fiberglass or a combination of both. Factory surfacing, if applied, includes mineral granules, slag, aluminum or copper. The bitumen determines the membrane's physical characteristics and provides primary waterproofing protection, while the reinforcement adds strength, puncture resistance and overall system integrity.

Factory-assembled, modified bitumen membranes undergo strict quality control standards to ensure uniform thickness and consistent physical properties throughout the membrane. The finished roofing system is usually a two- to four-ply system consisting of a modified bitumen membrane and a base sheet, with additional plies for added strength if needed. The substrate often determines which ply system is best specified.



Advantages:

- Polymer modification to asphalts result in greater elongation and the ability to accommodate building movement
- Ability to manufacture rolls in plants, providing better quality control and quality assurance
- Versatile application options: hot asphalts, cold adhesives
- A variety of modified types and mils are available to better provide resistance against foot traffic and common rooftop abuse when needed
- Thicker mil applications offer more resistance to environmental and weather conditions