



Polyurethane Foam Roof Coating / Restoration

Source/Author: Rohm & Haas Company

Even in a heavy industrial environment, the roof mastic based on RHOPLEX EC acrylic will retain its white, reflective color.

Introduction

The roof had become impossible to patch. Leaks were damaging a sizeable inventory of cardboard cartons and bagged pigments at Rohm and Haas Company's Bristol Plant warehouse. The company avoided replacing the roof with the installation of an acrylic elastomeric coating / urethane foam system. A formulation based on RHOPLEX EC-1791 acrylic polymer was selected for the job because of its superior adhesion to sprayed polyurethane foam.



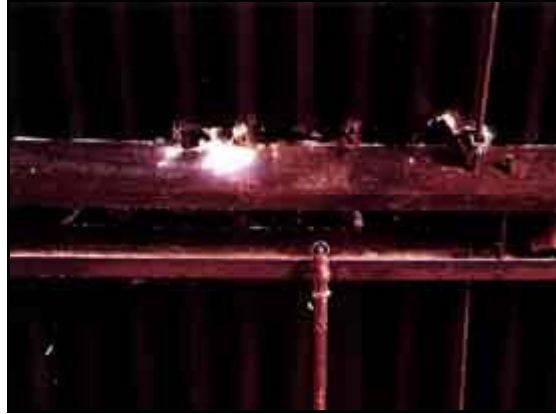
The Building

Name: Rohm and Haas Bristol Plant Building

Location: Bristol, PA

Use: Industrial Warehouse

Environment: Heavy Industrial



Constant expanding and contracting of the metal roof due to temperature changes led to splits in the panel seams. This photograph was taken from inside of the building looking up.

The Roof

Size:4,000 square feet (upper section) 3,870 square feet (lower section)

Age:60 years old

Substrate:Corrugated galvanized metal roof panels covered with asphalt asbestos.

Condition: Constant expansion and contraction of the metal roof due to temperature changes caused splits in the panel seams and deterioration of the asphalt and felts. This caused leakage from holes, open seams, and rust spots. In many areas, rust spots had turned into holes.

Preparation: The metal roof was brushed clean. In some cases, galvanized steel panels were used to patch large holes in the roof. A contact adhesive-foam bond primer-was sprayed on the new steel to enable the foam to adhere to the steel. One-inch minimum of three pound density rigid polyurethane foam was sprayed on top of the repaired roof.





The repaired corrugated metal roof receives a polyurethane foam application, which forms a seamless water tight seal over the roof.

Elastomeric Coating Application

Date: June 1983

Method: Spray (First and Second Coats)

Formulation: ARM-91-1, based on RHOPLEX EC-1791 acrylic

Coverage: 3 gallons per 100 square feet

Thickness : 30 dry mils

Color: White

Time: 6 hours

Weather Conditions : High humidity and temperature in the high 90s

Dry Time Between Coats: Overnight



Elastomeric roof mastics based on RHOPLEX EC acrylic prolong the life of polyurethane foam by protecting it from ultraviolet degradation.

Discussion

Inventory at the warehouse remains dry due to the sprayed polyurethane foam which provided a durable light weight, seamless base, eliminating joints and seams where water leaks had developed. Formulation ARM-91-1, designed to have superior adhesion to foam, maintains its durability and dirt pick-up resistance.

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