



## Mixed Nuts: A Polyurea and Silicone Roofing System Halts Leaks at a New York-based Nut Butter Factory

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By Juan Sagarbarria (Spray Foam Magazine)

**T**he production of high-quality nut butter is a lengthy and intricate process that involves different stages. From dry roasting the peanuts, cashews, or almonds; to cooling and blanching; to grinding them up; to processing; and to storing the product before its packaged and shipped off to vendors. Therefore, in order to ensure nut butter quality control, the conditions of the building it is produced and stored in must be optimal. This was a particular dilemma that a New York-based nut butter company faced after one of their manufacturing facilities failed its annual inspection due to a few penetrations on the roof that afflicted the building with leaks. Since passing the inspection was mandatory for the nut butter business to renew its lease, the operators opted for a quick and cost-effective solution with the application of polyurea and silicone coating to seal the roof from leaks and subsequent air or moisture infiltration. The project entailed cleaning the existing roof membrane, which consisted of 25-year-old EPDM rubber and then installing the roofing system over an 80,000 square-foot flat surface. For the polyurea and silicone coating installation, the operators brought in a crew from roofing specialists Weathertight Installations (WTI).

“I believe that the ideal situation here would’ve been to remove the rubber system and then install spray foam and polyurea as a new system,” said WTI’s Steve Ezard. “However, coating

the membrane with polyurea and silicone proved to be a cost-effective yet efficient option to safeguard the building.”

WTI arrived on site with a six-man crew and one spray rig, which was equipped with a PHX-40 PMC proportioner, a Graco Reactor H20/35 Pro proportioner, and a Graco Xtreme 70:1 airless spray pump. WTI utilized materials manufactured by **Oak Ridge Foam & Coating Systems** for the duration of the project. During the prep work phase of the project, the WTI crew encountered their first challenge in clearing the substrate of all the dirt, debris, and contaminants that included carbon black residue.

“We pressure-washed this roof three times and still had black chalky dirt that kept coming from the rubber membrane,” said Ezard. “To tackle this issue, we found that mopping the roof was key. The dirt was picked up in mop heads and wrung out in the mop wringer. Once we were able to clear the chalky black residue, we could move on to the next stage of the application.” The next stage entailed priming the entire roof for adhesion of the polyurea coating. The WTI crew applied by hand using nine-inch rollers Oak Ridge’s OR811 single-component primer mixed with 15 percent methyl ethyl ketone (MEK) in 10,000 square-foot sections per day. Even though SPF was not applied to the entire flat surface, the WTI crew saw fit to install spray polyurethane foam around the perimeter of the roof to eliminate shrinkage of the roof membrane, as well as to mitigate wind uplift. The WTI crew installed two inches of Oak Ridge’s 3 lb. spray polyurethane foam to the perimeter of the roof.



#### APPLICATION PROCESS

The WTI crew primed the flat surface of the roof and installed perimeter flagging prior to the coatings application. Spray foam was applied to the perimeter of the roof to eliminate shrinkage of the roof membrane

“The existing EPDM had noted holes and defects, which had released the membrane from the outer perimeter,” said Ezard. “It was pulled pretty tight, so we had to relief cut the membrane and refasten it every 12 inches into the metal decking. The spray foam successfully

encapsulated the outer perimeter over the wood blocking and onto the refastened EPDM membrane.”

The WTI crew wore PPE consisting of Tyvek suits, gloves, boots, and battery-powered, fresh-air-supply belt-pack respirators. For added safety while working around the edges of the roof, crewmembers wore harnesses and tied off to anchors that were installed at the center of the roof.

Once the primer flashed off, the WTI crew used a Graco Probler P2 gun to apply the base coat, which was silver Oak Ridge ORSLM Pure Polyurea at a minimum thickness of 1.5 gallons per square. The crew first applied the polyurea to all seams twice followed by an overlay to the entire substrate. During the polyurea application, the WTI crew divided itself to begin the silicone topcoat application so that one part of the crew focused on completing the polyurea application and the others followed immediately with the topcoat. The topcoat consisted of the installation of 18 dry mils of Oak Ridge’s 78 percent solid, single-component White Silicone coating. The two-coat application totaled approximately a 48-mil dry film thickness.

“We started applying the top coat on the East side of the roof because we witnessed intermittent wind coming in from the West,” said Ezard. “We didn’t want to chance any silicone overspray onto the uncoated rubber before the polyurea was applied. We witnessed very little down time by applying the roofing system in this manner.”

It took the WTI crew almost three weeks to complete the entire application, which was well received by the operators who are now worry-free when it comes time to renew their lease. Ezard pointed out that the Oak Ridge coatings constituting the roofing system will provide durability to the roof, as well as added assurance to the workers who make the nut butter production possible.

“The polyurea provides strength, durability, and ideal insulation; while the white silicone coat provides UV protection and reflectivity, which boosts the building’s energy efficiency,” said Ezard. “The two coats create a seamless membrane that breathed new service life to the old EPDM membrane below, all this at a fraction of the cost of a removal and replacement. The operators and the workers can certainly expect a tremendous difference in the indoor climate inside the facility.”