

## US Capitol Building - Washington, D.C.



### Waterproofing of 33 Antefixes on the US Capitol Building

The United States Capitol in Washington, D.C., is among the most architecturally impressive and symbolically important buildings in the world. It had housed the meeting chambers of the Senate and the House of Representatives for almost two centuries. Begun in 1793, the Capitol has been built, burnt, rebuilt, extended, and restored; today, it stands as a monument not only to its builders but also to the American people and their government.

When the U. S. Capitol was expanded in the 1850s, the original wood-frame dome was replaced by a cast-iron dome. The dome structure, which together weigh about 4,450 tons, expands and contracts slightly depending on the weather. When several leaks were found and the water started penetrating into the Rotunda in these areas, an extensive restoration program was started in the late 1990s. After examining the

detail area adjacent to the 33 antefixes, (ornamental elements derived from the ancient Greek and Rome design), it was determined that water had started leaking into the structure behind these architectural elements. To prevent further deterioration and protect the Nation's Capital, installing a proven and reliable waterproofing solution behind these cast iron ornaments was critical. In 2010, the surfaces behind the Antefixes were waterproofed with Kemper System's odor free waterproofing system - Kemperol 2K-PUR. After completion of the waterproofing system, the membrane was painted to obtain a surface matching the appearance of the historic structure, and a long term solution was provided.

To prevent further deterioration waterproofing the dome behind the cast iron ornaments had become necessary. However, this turned out to present a

challenge to the architect as the area is difficult to access and extremely tight to work at. A liquid-applied system that fully adheres to the substrate, following any shape and contour of the surface was the preferred solution. Standard Restoration & Waterproofing Co., Inc., MD, certified Kemper System contractor, was awarded the job and installed the system in 2010. Prior to applying the new waterproofing, several layers of lead based paint had to be completely stripped away. In the following, the surfaces were thoroughly cleaned and primed. The benefits of liquid-applied waterproofing systems greatly depend on the fleece reinforcement. It gives the system the ability to withstand structural movements between elements of different materials and compensates for the impact of frost-thaw cycles. Kemper System waterproofing membranes incorporate a high tensile strength, polyester fleece reinforcement which can be tailored to the area that is to be waterproofed. In combination with the cold-liquid applied resin it forms a durable membrane.

The comprehensive restoration program addressed maintenance, repair, modification and restoration for all systems, spaces and finishes from the floor of the Capitol Rotunda to the Statue of Freedom to preserve the architectural monument and symbol of the United States.

### **Kemper System - over 50 years of experience in cold liquid-applied resins**

Kemper System is a leading manufacturer of liquid-applied waterproofing and roofing systems for high profile applications. Kemper System fleece-reinforced, cold-applied resin membranes reliably protect the most renowned buildings such as the Empire State Building, the Freedom Tower, Fenway Park, Madison Square Garden, Falling Water, Woodruff High Museum of Art. Building Owners and property managers base their trust on a proven performance of over 50 years. Kemper System focuses on sustainable products with renewable resources and solvent-free applications.



**Architect,:**

Hoffman Architects, Washington DC

**Contractor:**

Standard Restoration & Waterproofing Co., Inc., MD

**Year of completion:**

2010

**Surface:**

33 Antefixes