

T  
E  
C  
H  
N  
I  
C  
A  
L  
R  
E  
P  
O  
R  
T

# **TecSeal™ Negative Force Leak Repair Process**

*is*

*An Improved Method of Repairing  
Leaks in Concrete, Masonry & Stone*

**Report of Leak Repairs at the  
Smithsonian Institute  
Sackler Museum of Art Building**

*Washington, DC*



TECVAC, Inc.

1998

© ALL RIGHTS RESERVED

---

TECVAC, Inc. ✕ 886 Rhonda Place, SE. Leesburg, VA 20175  
Office 703.742.9186 ✕ FAX 703.742.9231

---

# TecSeal™ Technical Report

## Repairs To Leaking Fractures At The Sackler Museum

### Background

After each rain, the Assistant Director could count on a trickle of water seeping into, and ultimately soaking the carpet and furnishings, in his basement office located in the Sackler Museum.

### Development

Numerous attempts to repair the leakage only resulted in total disruption and did little to suppress or stop the seeping water. Each attempt to repair the leak necessitated tearing out a masonry block wall, furred with an aluminum stud and dry wall partition, in order to expose the shotcrete foundation wall. The interior foundation wall was anticipated to leak and a drainage trench was formed along the inside perimeter of the foundation, on top of the floor slab and between the columns during the original construction. The finish partition wall was then constructed against the curbing. Although the length of wall in the Assistant Director's office had been exposed many times, the repair of the identified cracks breaching the intention of the trench, were all unsuccessful. Local technicians were called in by the architect, Architrave, Inc., to apply the proprietary leak repair process to the defect.

### Outcome

Architrave's survey of the exposed shotcrete foundation wall revealed a crack approximately 33mm wide extending through the wall, across the drainage trench floor and through the bottom of the support column. After examination, the technical team prepared the crack by drilling deep into and along the crack line and installed the porting hoses into the drilled holes. Then, they applied a pliable latex sealer to enclose the whole fracture line system. Upon application of vacuum pressures, the system began to evacuate an amount of water believed to be drawn from the exterior side of the wall. The water subsided however and the enclosed system produced a vacuum nearing 16 inches. While maintaining the vacuum, a proprietary mixture of micro-fine cements and latex was introduced into the system. The amount of materials

introduced into the fracture confirmed a cavity within the fracture line that was filled during the injection process. After completion of the work, a waterproof coating was applied to the exposed drainage trench and an unscheduled water test was soon coming.

## Conclusion

While the masonry block was being installed the area received heavy thunderstorms that produced .5 inches of rain in the area in less than twelve hours. The architect's confidence in the repair proved to be well placed...twenty-four hours later, and now some three years later, there is not even a sign of dampness in the wall or the office.