BELOW-GRADE INJECTION WATERPROOFING

CGI®

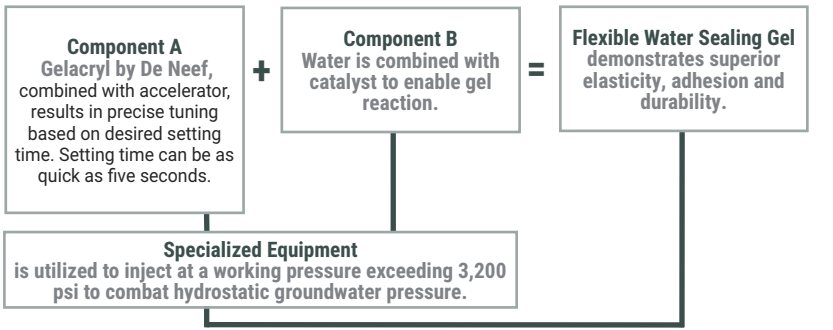
CONCRETE GEL INJECTION

CONCRETE | BRICK | STONE | RUBBLE

CELLARS | ELEVATOR PITS
FLOOR SLABS ON GRADE
MECHANICAL ROOMS | PARKING GARAGES
PIPE PENETRATION | TUNNELS
VAULTED SIDEWALKS | VAULTED STRUCTURES

The CGI Waterproofing System | A Two-Part Liquid Component System

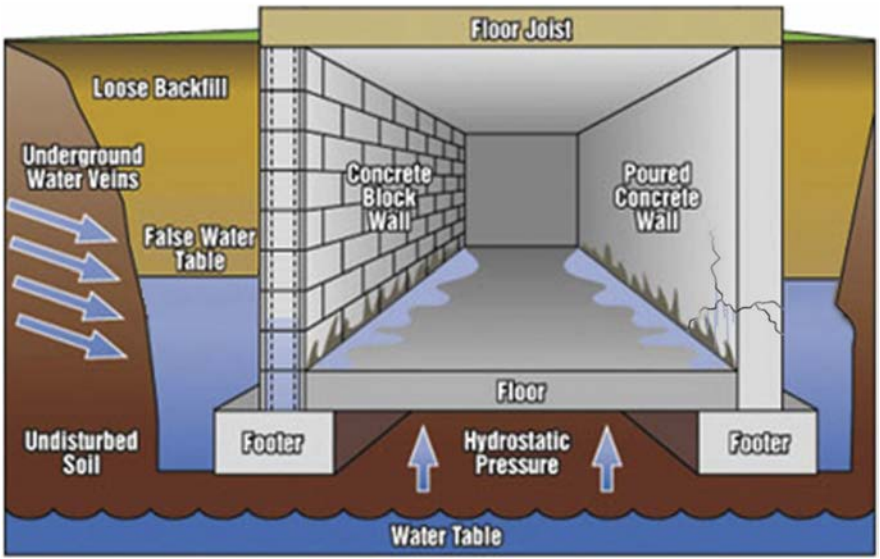
The CGI Waterproofing System is a cost-effective and environmentally safe solution to stopping water infiltration in below-grade foundations, cellars, elevator pits, tunnels, mechanical rooms, vaulted structures, and garages.
CGI performs "concrete gel injection" by drilling and injecting a two-component hydrophilic resin system through the negative, or interior, side of the structure using our specialized equipment. The two liquid components, which are water-like in viscosity, penetrate the tiniest cracks, fissures and water pockets to the full depth of the substrate and travel to the compromised membrane above, chemically reacting to form a flexible gel barrier. CGI's methodology is beneficial and advantageous as a result of the gel's properties, and by implementing its technology from the negative side of the foundation, all costly and disruptive exterior excavations common with traditional waterproofing applications are avoided.



Properties
- Water-like viscosity
- Highly elastic and adhesive
- Lab tested as non-toxic, non-flammable and non-hazardous
- Little to no odor produced during and after reaction
- Will not promote growth of fungi, mold or bacteria
- Cleans with water requiring no cleaning solvent
- Resilient against water containing oil, salt and/or sewage

Advantages
- Disruptive exterior excavations avoided
- Implement technology during active leaks
- No drilling to the positive side required, avoiding damage to existing waterproofing membrane(s)
- Controlled setting time calculated based on active water pressure and volume
- Occupies and seals water entry points for the life of the structure

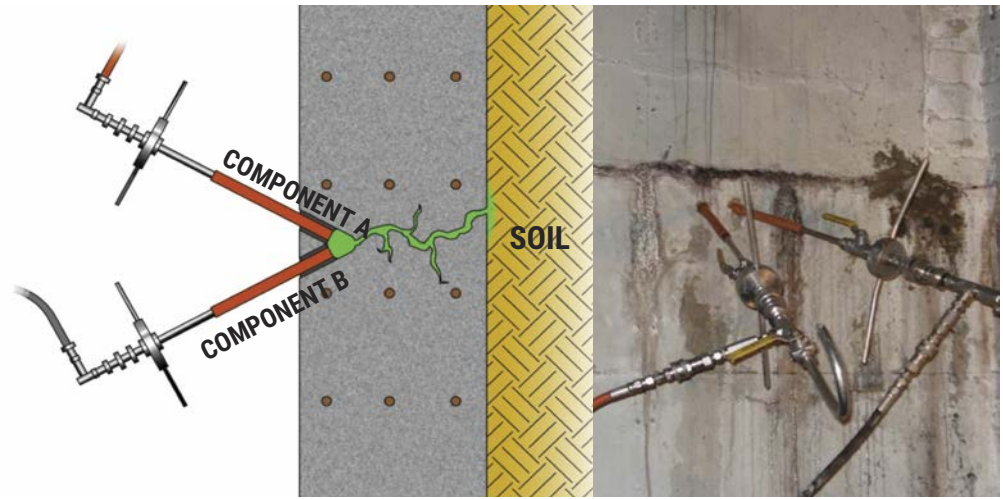
Benefits
- Reclaim unusable space
- Restore structural integrity, durability and appearance
- Reduce unhealthy and unsafe tenant conditions



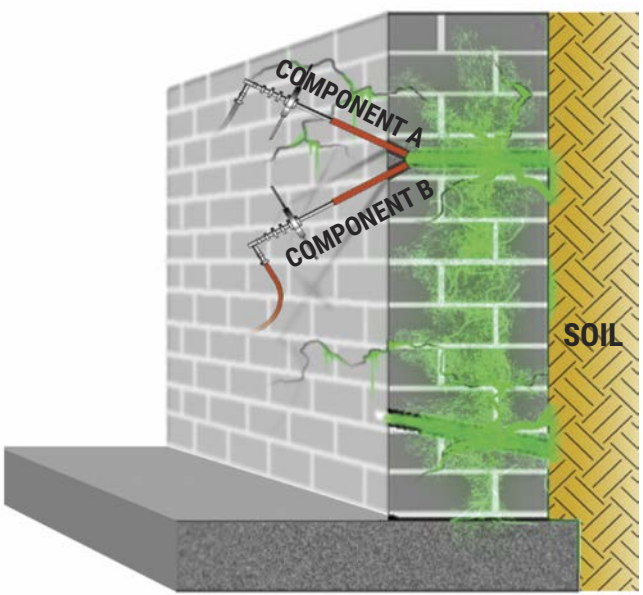
Active Groundwater Infiltration Through Cracks and Cold Joints

Concrete Wall Injection

Holes are drilled from the interior side, next to cracks/cold joints, where the two liquid components are then pressure-injected within the substrate to form a flexible water sealing gel, which eliminates water intrusion.

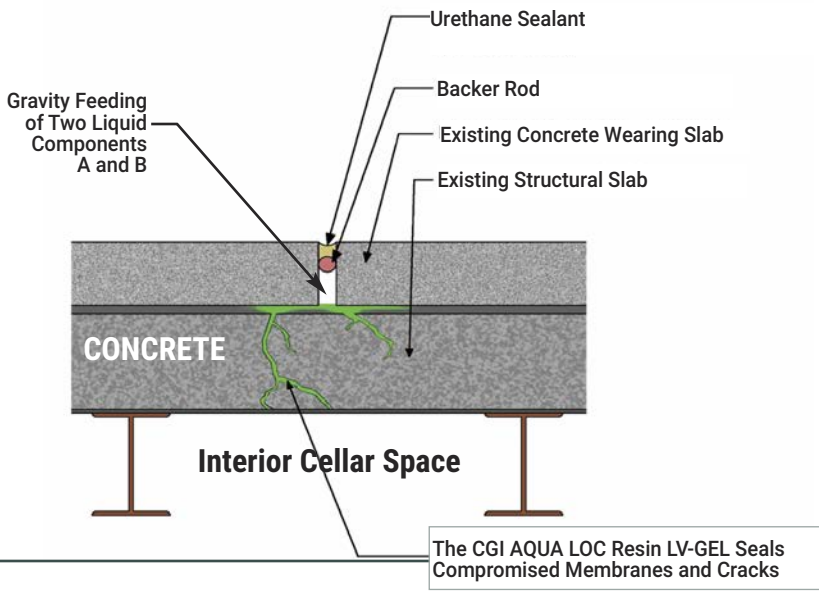


Masonry Wall Injection

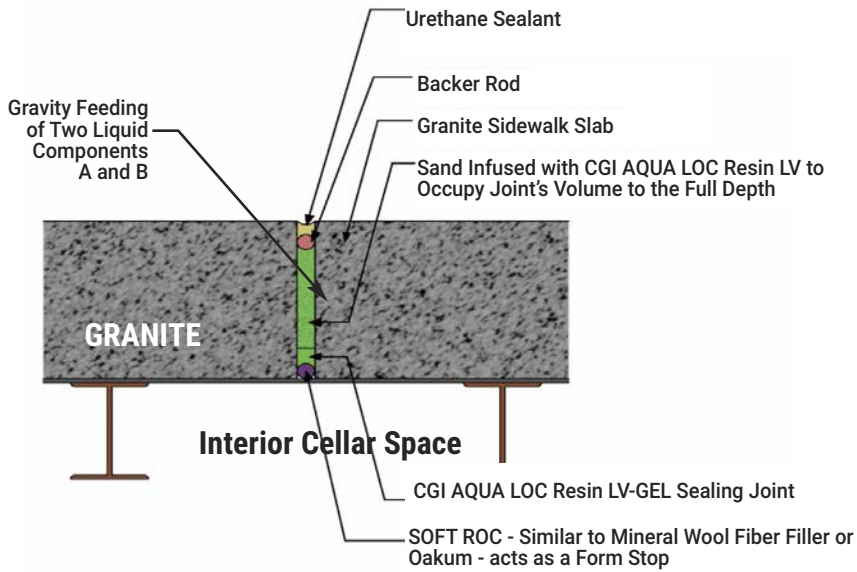


Holes are drilled from the interior side where the two liquid components are then pressure-injected within the substrate to form a flexible water sealing gel, which eliminates water intrusion.

Vaulted Concrete Sidewalk Application



Vaulted Granite Sidewalk Application



CGI Specialized Equipment | Automatic Injection Tool Utilizing Compressed Air

CGI Specialized Equipment | Pipe Penetration Tools

CORE TO PIPE PENETRATION

CONDUIT SLEEVE TO CABLE(S) PENETRATION (ANNULAR INJECTION)

CGI Specialized Equipment | Pipe Penetration Tools

CONDUIT SLEEVE TO CABLE(S) PENETRATION (ANNULAR INJECTION)

ONE WORLD TRADE CENTER

Featured Project

Address: One World Trade Center
285 Fulton Street , New York, NY
Building Type: Commercial
Location: Oil Tank Room
Substrate: Concrete
Owner: The Durst Organization
General Contractor: Tishman Construction

In the C4 Level Broadcast Tank Room, the south facing concrete foundation wall was showing signs of active below-grade water infiltration along with signs of previous water staining and efflorescence. Upon review, our team found vertical foundation wall cracks that started at the floor slab and continued upward on the wall, in addition to several locations with 3/4-inch diameter holes that were actively leaking. As a result of the structural defects, ponding of water was found on the floor slab on grade. The elevation of the cracks and holes were well within the groundwater table and under tremendous hydrostatic pressure as this C4 Level was at least 50 feet below-grade and very thick, as this structural wall was necessary to support the Freedom Tower above.

It was very critical that these actively leaking locations were rectified so that the specialized epoxy floor slab coating could be properly applied to a dry surface. These water entry points were successfully resolved using the CGI waterproofing system where our specialized pumps created the necessary pressure output of over 3,000 psi for the two-component gel to penetrate full depth toward the exterior side. Thus, the resulting gel was able to reach deep within the cracks and the holes for a complete waterproofing seal. Consequently, the general contractor was able to perform the application of the specialized epoxy coating effectively.

CGI®
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1 Northside Piers, Brooklyn, NY

Before

The Uniondale Public Library
400 Uniondale Avenue, Uniondale, NY

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NY-Presbyterian Hospital
The Helmsley Medical Tower
1320 York Avenue, New York, NY

Before

After

Boiler Room

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Public School 101
The Verrazano School
2360 Benson Avenue, Brooklyn, NY

Vaulted Structural Slab Below Courtyard

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London Terrace Gardens
435 West 23rd Street, New York, NY

Cracks

Parking Garage Below

Perimeter Expansion Joints

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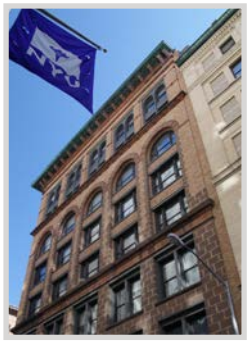
The GM Building
The Fifth Avenue Apple Store
767 Fifth Avenue, New York, NY

Resulting gel

Injection from below



New York University
246 Greene Street, New York, NY

Vaulted Masonry Structure | Below Street Grade

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The Evelyn Hotel
7 East 27th Street, New York, NY

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111 Mercer Street, New York, NY

Vaulted Sidewalk | Expansion Joints Above Cellar Level Interior Space

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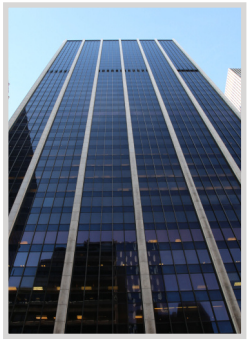
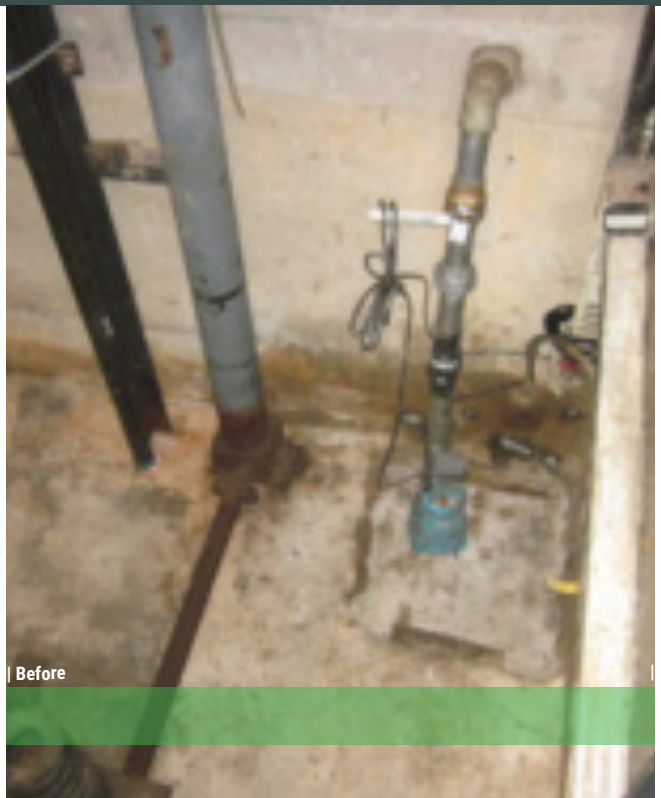


1185 Avenue of the Americas, New York, NY

Gravity Feeding Two Liquid Components

After

Cellar Level



Before

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Silver Towers South
620 West 42nd Street, New York, NY

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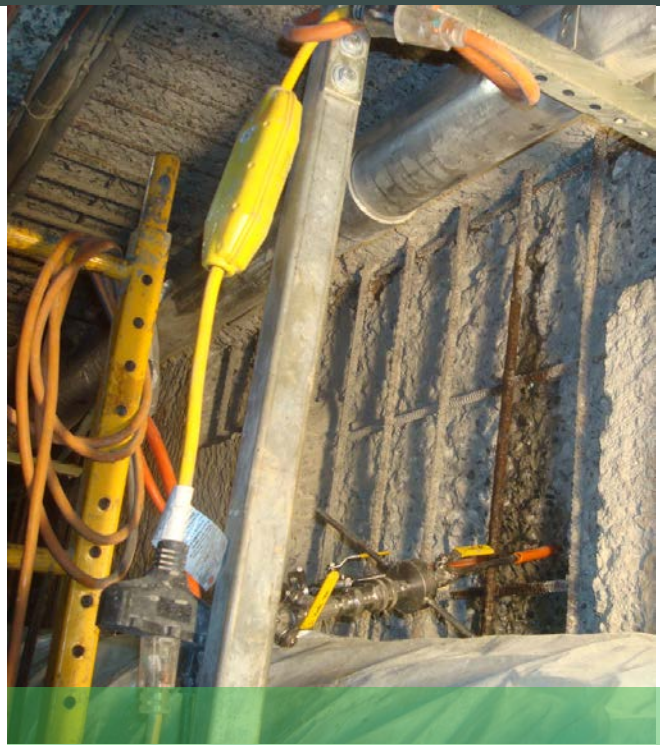
Lincoln Center
70 Lincoln Center Plaza, New York, NY



| Before

CONCRETE GEL INJECTION

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CONTINUING EDUCATION AIA

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