

Alchatek

CASE STUDY
LEAK SEAL

US HIGHWAY 98 STORMWATER SYSTEM FLORIDA

Preventing Undermining: *US-98 Stormwater Repair*

US Highway 98 is the main coastal route along Florida's panhandle, connecting Panama City Beach, Destin, and Fort Walton Beach.

TREATED ALONG A THREE-MILE STRETCH OF US 98

2,000 *pipe joints*

PRODUCT

Spetec H100

01 What made this job *difficult.*

US HIGHWAY 98 STORMWATER SYSTEM FLORIDA

Groundwater infiltrating the stormwater system carried exceptionally fine sugar sand into pipes and manholes, gradually reducing capacity and causing flooding on roadways during heavy rains. The situation escalated when a vehicle was damaged after falling into a void created by soil loss beneath the roadway, highlighting the urgent need for a lasting solution.

THE CONSTRAINT

3 *miles*

STRETCH OF HIGHWAY AFFECTED

KEY CONDITION

Groundwater was entering through pipe joints, manhole connections, and cracks in concrete structures, transporting fine sand and creating sizable voids beneath the infrastructure. Voids were estimated to range from several inches to several feet around key structures.

02 What was specified, *and how it went in.*

SPETEC H100

Alchatek recommended Spetec H100, a semi-rigid polyurethane grout, for comprehensive rehabilitation. The approach involved direct injection into leaking joints and cracks, followed by creating a curtain wall around critical structures to prevent further sand migration and stabilize the surrounding soils. FDOT required a five-year warranty on the repair, underscoring both the severity of the problem and their confidence in the solution.

THE MATERIAL

Spetec H100

SPETEC H100

A semi-rigid polyurethane grout that expands to fill voids while remaining flexible enough to accommodate minor ground movement and maintain a watertight seal.

THE METHOD

01
Drilled
Technicians drilled directly into each pipe joint, installing injection ports for precise placement of H100 grout.

02
Encapsulated
Additional holes were drilled about one foot from each joint in a clock pattern to encapsulate the joints and stabilize the surrounding soil.

03
Injected
Injection began at the lowest point of each structure and progressed upward to ensure complete filling and displacement of water.

04
Sealed
Manholes received perimeter injections to form a waterproof curtain wall, with special attention to all pipe penetrations.

FIVE-YEAR WARRANTY

FDOT required a five-year warranty on the repair.

A requirement that underscored both the severity of the problem and FDOT's confidence in the solution.

THE TRIGGER

A vehicle was damaged after falling into a void created by soil loss beneath the roadway.

03 What the result was, *and what confirmed it.*

ESTIMATED REPLACEMENT COSTS AVOIDED 2017

Over the course of 18 months, approximately 2,000 pipe joints and numerous manholes were treated along a three-mile stretch of US 98. Since the project's completion in 2017, there have been no warranty claims or reported issues, even during multiple heavy storm seasons. The highway has remained free of flooding and sand accumulation, and no further undermining of the roadbed has occurred.

ESTIMATED REPLACEMENT COSTS AVOIDED

$7 million to $16.5 million

By choosing polyurethane injection over full excavation, the FDOT avoided these estimated replacement costs while keeping the highway open and safe throughout the process.

AT A GLANCE

36 to 84 inches
PIPE DIAMETER RANGE

3 miles
HIGHWAY STRETCH TREATED

18 months
PROJECT DURATION

2,000 pipe joints
TREATED

SINCE 2017

No warranty claims or reported issues, even during multiple heavy storm seasons.

START THE CONVERSATION

Send us the job.
We will send back an approach.

Send us the soil report or the failure photos and Technical Services will return a written approach within two business days.

TECH SUPPORT
404 · 618 · 0438
WWW.ALCHATEK.COM
Alchatek

Alchatek manufactures polyurethane resins, chemical grouts, and injection equipment for infrastructure repair: leak sealing, soil stabilization, concrete lifting, and seawall repair. Headquarters in Tucker, Georgia, with a bonded warehouse in Reno, Nevada.

Information in this document is believed accurate at the date of publication. Product performance depends on site conditions and application; consult the current Technical Data Sheet, which is the controlling document.

ALC-CS-XX-033
DRAFT V0.1 · SEPT 2026