THE FOAM GUYS | SOLAR + INFRASTRUCTURE

HF 402 vs. CONCRETE

A practical comparison for pile support and soil stabilization

THE RIGHT MATERIAL FOR THE RIGHT JOB

HF 402 is an expansive, hydro-insensitive polyurethane used to stabilize and confine soil around piles and piers. Concrete remains essential when the engineered design calls for a structural concrete element.

12-16x
EXPANSION
HF 402 free-rise expansion

10-15 sec
REACTION
Approximate full expansion

15-30 min
LOAD TIMING
Typical same-day load readiness

SIDE-BY-SIDE MATERIAL COMPARISON

PARAMETER	HF 402 POLYURETHANE	CONVENTIONAL CONCRETE
Material	Expansive, two-part polyurethane	Portland-cement-based mix
Density	4.0-4.5 lb/ft3 (free rise)	Approx. 145-150 lb/ft3
Volume behavior	Expands to fill voids and fissures	Can undergo drying shrinkage
Set / strength	Expands in ~10-15 seconds; typically load-ready in ~15-30 minutes	Strength develops over time; commonly evaluated at 28 days
Water conditions	Hydro-insensitive; formulated to react in wet conditions	Underwater placement requires appropriate mix and methods
Soil interaction	Can permeate voids and mechanically interlock	Typically forms a placed structural mass
Installation	Small-port injection; limited excavation	Often needs excavation or forming, depending on design
Best role	Soil confinement, void filling and stabilization	Engineered structural pile or pier elements

KEY DISTINCTION

HF 402 stabilizes the pile-soil system; it does not replace a structural concrete pile section.

BUILT FOR CHALLENGING SOILS

Where HF 402 can help - and when concrete is the right choice

HF 402: IDEAL USE CASES

SATURATED OR VARIABLE SOILS

Stabilization around piles where water and loose soil create challenges.

EXISTING SOLAR ARRAYS

Targeted remediation with limited disturbance to surrounding work.

VOIDS + WEAK SUB-BASES

Expansion can fill gaps and improve confinement around support elements.

TIME-SENSITIVE REPAIRS

Fast reaction and same-day return-to-load potential, subject to verification.

WHEN CONCRETE IS THE BETTER FIT

Use engineered concrete when the material itself must form a structural pile, pier, column, or other primary load-bearing element - or when the engineer of record and applicable code specify concrete.

ONE SYSTEM. TWO DIFFERENT ROLES.

The pile carries the structural load. HF 402 can serve as the surrounding binder and confining medium to support the pile-soil interface.

FIELD-READY SOLUTIONS

The Foam Guys supports utility-scale solar, wind, battery storage, O&M structures, and civil infrastructure with soil stabilization and pile remediation services.

LET'S BUILD ON SOLID GROUND.

Connect with our team at RE+ to discuss your site conditions.

Technical note: Values summarized from the supplied HF 402 comparison sheet; performance depends on installation, site conditions, and testing. This is not an engineered design. Confirm product certifications, current manufacturer data, and project-specific requirements with the engineer of record.