



**STRONG WATER TECHNOLOGY**

## Frequently Asked Questions

- Q.** How does **STRONG WATER™** technology differ from first-generation gels?
- A.** 1. **SWT** can be applied via typical hose and nozzle configurations, while old-fashioned gels require “garden type” hose-end applicators that are undependable and limited in spray performance.  
2. First-generation gels were very slippery, like ice on the floor in an incident scene. **SWT** is not slippery and is similar to a puddle of water.  
3. First-generation gels were too hard to remove, especially when baked on. **SWT** is not.  
4. First-generation gels do not biodegrade and will reappear when water is added. **SWT** disappears rapidly and does not come back.
- Q.** What is the shelf life of **STRONG WATER™** technology?
- A.** Six+ years.
- Q.** Will **STRONG WATER™** technology settle?
- A.** There will be slight separation of the gel over time, but it is easy to shake back into suspension.
- Q.** Is **STRONG WATER™** technology corrosive?
- A.** No, **SWT** does not cause rusting or corrosion.
- Q.** Will **STRONG WATER™** technology work on class B (fuels) fires?
- A.** While gel still contains water and can therefore splatter, it would certainly be valuable on exposures or in cooling tanks.
- Q.** What does **STRONG WATER™** technology cost?
- A.** One 5-gallon jug costs \$300, but when compared to Class A foam, and the work differential, gel actually costs about 2 cents less per sprayable gallon.
- Q.** Can **STRONG WATER™** technology reduce operational costs?
- A.** Yes. **SWT** can reduce suppression time, run time and exposure time, as it works faster than plain water or foam. It can reduce firefighter exposure and injuries and their associated costs. It can also reduce water hauled or purchased, as well as toxic run-off and its cleanup expenses.
- Q.** Can any fire engine apply **STRONG WATER™** technology? How long does it take?
- A.** Yes. When equipped with a FoamPro or powered proportioner, properly optimized, cleaned and calibrated, most engines can be configured in 4-6 hours.

- Q.** What benefits does **STRONG WATER™** technology have over plain water and foam?
- A.** **SWT** causes plain water to “stick & stay,” where it is most effective. This is huge, given that traditionally, 90% of water and foam just run to the ground, where they do no work. Being able to extend the value of water is big, but being able to choose “on-the-fly” between suppression (thin–low viscosity) and protection (thick–toothpaste) is unheard of. Gel can eliminate flashover, rekindle and water loads via simple efficiency.
- Q.** Can **STRONG WATER™** technology save homes that would otherwise be written off, due to surrounding fuel loads?
- A.** Yes. Coating a home or exposure, and even the nearby fuel loads, can provide enough protection to save an asset from a severe burn-over.
- Q.** Is there added maintenance involved in using **STRONG WATER™** technology?
- A.** No more than Class A foam, and usually less. We flush the apparatus manifold after use, but do not flush the proportioner. If unused, flow 1/4 cup of gel concentrate through the proportioner, via the “calibrate” valve.
- Q.** Can you change back and forth, between **STRONG WATER™** technology & foam?
- A.** No, you cannot, at least not without a thorough cleaning and recalibration.
- Q.** Can **STRONG WATER™** technology be used in sensitive watersheds?
- A.** In practicality, yes, **SWT** is safe for aquatic life and humans.
- Q.** What is the availability of **STRONG WATER™** technology, especially for a large incident?
- A.** We are working to set up strategic caches with agencies and departments at the local levels. We have regional representatives that can shuttle gel to an incident, and large trucks to move gel (re-supply) at a moment’s notice.
- Q.** Is **STRONG WATER™** technology available in bulk?
- A.** We are in the process of adding gel concentrate tenders, to support large incident needs.
- Q.** How does a “Gel Strike Team” function?
- A.** Normally, a team of five type 6 engines, one water tender, a task force leader and a supply vehicle (flatbed with pallets of jugs or a 500 gal gel supply tender), will operate as a unit to “gel” homes 1-2 hours before an expected fire front.
- Q.** Can type 1 engines and tenders use **STRONG WATER™** technology?
- A.** Gel was meant for type 1 structural use, and there are tactical tenders capable of coating large exposures – structural or wildland.
- Q.** How hard is **STRONG WATER™** technology to clean off of a building, after a fire?
- A.** **SWT** can be cleaned off using plain water and a brush or broom.
- Q.** Can **STRONG WATER™** technology be re-hydrated, like first-generation super-absorbent gels?
- A.** No. However, the trade-off is the ability to pump and adjust **SWT** on-demand, rather than being stuck with one viscosity.
- Q.** Application of first-generation gels is very temperamental. Is **STRONG WATER™** technology?
- A.** No. We rely on a positive displacement pump to “inject” **SWT** into the water stream, while first-generation gels utilized a spring-loaded check valve, which is prone to clogging.
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- Q.** Does **ATIRA Systems®** provide technical support?
- A.** Yes. Our Strong Water assistance Team (SWaT) includes qualified/carded firefighters who are available to provide frontline support of systems, supply and tactics. We provide training and we “loiter around” our customers to provide ultimate satisfaction.
- Q.** What other help can **ATIRA Systems®** provide?
- A.** We have three **SWT**-equipped type 3 contract (VIPR) engines, which can be available, with or without crews, to supplement agency strike teams. And our sister company, **ATIRA GST**, manufactures type 3 & 6 engines, tenders and slip-ins.
- Q.** Can **ATIRA Systems®** repair and configure FoamPro systems and/ or apparatus?
- A.** Yes. We have mobile Field Tech Support units equipped with tools and parts, and we will soon be adding a heavy truck maintenance unit.
- Q.** Does **ATIRA Systems®** sell FoamPro systems?
- A.** Yes, and we are a factory authorized repair center.
- Q.** Who is using **STRONG WATER™** technology?
- A.** CalFire/ San Diego County and San Bernardino County Fire pioneered the use of **STRONG WATER™**, and are authorities on gel strike team formations. Our VIPR engines have been using **STRONG WATER™** for four years on contract in USFS Region 6.
- Q.** Does **ATIRA®** conduct demonstrations?
- A.** We prefer to conduct demonstrations because “seeing is believing.” Call us to schedule a live-fire demonstration.
- Q.** Is **STRONG WATER™** technology available from distributors?
- A.** Not yet. We insist on managing the conversion, training, and supply process to ensure ultimate customer satisfaction.
- Q.** Can **STRONG WATER™** technology be used in aerial applications?
- A.** Yes, with approvals. It could be used in bucket drops without much fuss, but tanker and internal tank operations are subject to USFS QPL approval, which is in-process – but not yet complete.
- Q.** How would **STRONG WATER™** technology work in aerial applications?
- A.** At a 1- 1.5% constancy, **SWT** would wrap the upper layers of vegetation, knocking fire out of the canopy. **SWT** is designed for suppression and it has no long-term (PhosChek) properties. **SWT** will last for several hours on a hot/ windy fire day.
- Q.** How long will **STRONG WATER™** technology protect a structure?
- A.** **SWT** will protect for 2-8 hours, depending on the circumstances. Ember and fire-brand showers can be rejected for hours, while a full-on burn-over should have gel applied 1-2 hours before the advancing fire front. Temperature, humidity and wind, as well as coating thickness (1/8” – 1/2”) all contribute to the resultant protection.
- Q.** Are there established tactics for structure protection?
- A.** Apply **STRONG WATER™** technology 1-2 hours prior to approaching fire front, retreat to safety, then re-engage to handle any residual hot-spots.
- Q.** How much surface area will a 5-gallon jug of **STRONG WATER™** technology cover in protection mode?
- A.** Five gal of **SWT**, at 2% mix of concentrate, with 250 gal of water = 58,000 cu in divided by 3/8” thick = 154,666 sq in or 1074 sq ft of surface area. That will cover the frontal exposure area of most average WUI homes.
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- Q.** What model FoamPro should be used to apply **STRONG WATER™** technology?
- A.** Only FoamPro models 1600 & 2001/2 will provide enough flow for typical discharge rates. Model 1601 units are too small (1/2 the displacement of a 1600 model). Other brands of powered proportioners can also be configured to apply **SWT**.
- Q.** Will “around-the-pump” proportioners work for **STRONG WATER™** technology?
- A.** No. Around-the-pump and syphon eductors rely on a spring-loaded check valve that becomes clogged as gel meets water.
- Q.** Are there any special FoamPro installation instructions?
- A.** Yes. The suction circuit must be at least 3/4” diameter, short (less than 24”), AND the injection port must be beyond (discharge port side) the flowmeter.
- Q.** Are there any other special installation issues?
- A.** We relocate the Inject/Calibrate valve to the engineer’s panel, so that purging/ priming can be conducted as needed, without accessing a (typically) buried FoamPro system.
- Q.** I am sold – where do I sign?
- A.** Call 503-769-8188.