

FormDirectTM
In, on & around concrete



RIVE STOP

PATENTED ELASTIC RIVET

Big expertise. Real convenience. Concrete commitment.

RIVESTOP is a patented elastic rivet with a mechanical waterproofing system specifically designed to **SEAL** hermetically formwork holes on the concrete walls quickly, permanently and effectively. Provides waterproofing reliability and efficiency into the taper tie voids or cast in pipes onto the concrete wall.



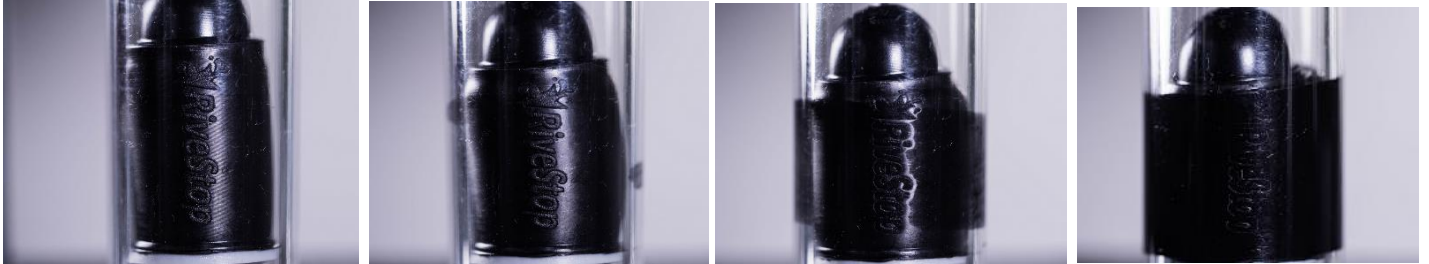
In comparison with other actual existing solutions in the market, **RIVESTOP** provides durability, effectiveness, security, reliability and the most important: **is a tremendous TIME SAVER and FULL WATER PROOFABILITY.**

You do not have to worry anymore about possible water leaks over the time, or the labor costs and special trainings for the operators. **RIVESTOP is the easiest, permanent and best solution.**



RIVESTOP is an elastic rivet that expands inside any formwork hole by approximately 50% of its original diameter, exerting force against the concrete walls of the hole, thus sealing it completely. The mechanical system is activated with a **RIVETER** (see page 3).

Once the product is applied with a Riveter/Rivet gun, it expands inside the hole, sealing it completely with uniform and controlled pressure, as follows:



STEP 1: Placed into the hole **NEXT STEPS:** it starts to contract and to expand **LAST STEP:** hole completely sealed
*You can see how RIVESTOP adapts itself to the hole pushing against the walls.

Once the piece goes into the opening, it contracts and expands exerting uniform force against the walls of the hole, sealing it completely, as shown in the following images.



RIVESTOP inserted into the nosepiece of the riveter in the last step of the installation process.

The most adequate tool to install the RIVESTOP is a manual, 2-hand, long arm riveter. A standard and universal hand riveter/rivet gun is all you need. However, it can also be installed with an electric riveter (even faster).

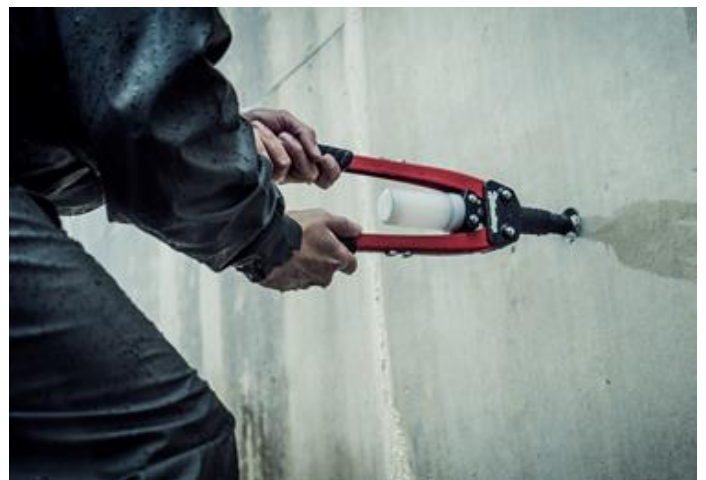
We can supply our own riveter if needed:



All you have to do is place the RIVESTOP in the riveter and rivet it into the hole. **And that's it!**

No point of support is needed, RIVESTOP can be applied "in the air".

The riveting action takes approximately **3-5 seconds per hole (with an electric riveter even faster)**.



The process is not dependent on the skill of the person applying it. To reiterate, the quality of the seal is **NOT** dependent on the person who applies it. No human factor is involved.

Application is very fast, allowing you **to save up to 90% on labor costs compared to other existing sealing systems** in the market such as mortar putty, bentonite, epoxy, she bolts, plastic plugs, and/or other non-mechanical systems.

Another thing to take into consideration is the fact that RIVESTOP is permanent once it has been installed. Once it has been applied, it cannot be taken out, manipulated and can only be removed with a drill, which means that it won't move or slip out over the time.



Installation process

1. Clear hole of all loose debris.
2. Insert Rivestop into an rivet machine.
3. Place Rivestop into the hole to be sealed (diagram 2).
4. Apply the pop rivet until pin breaks off (diagram 3).
5. The diametral expansion of Rivestop makes perfectly seal the hole.

- IN WATER TANKS...
- PURIFYING PLANTS...
- UNDERGROUND GARAGES...
- FORMWORK...
- AND ANY TYPE OF CONSTRUCTION

NOT A SINGLE DROP!

RIVESTOP FACES ITS MAIN ENEMY, WATER

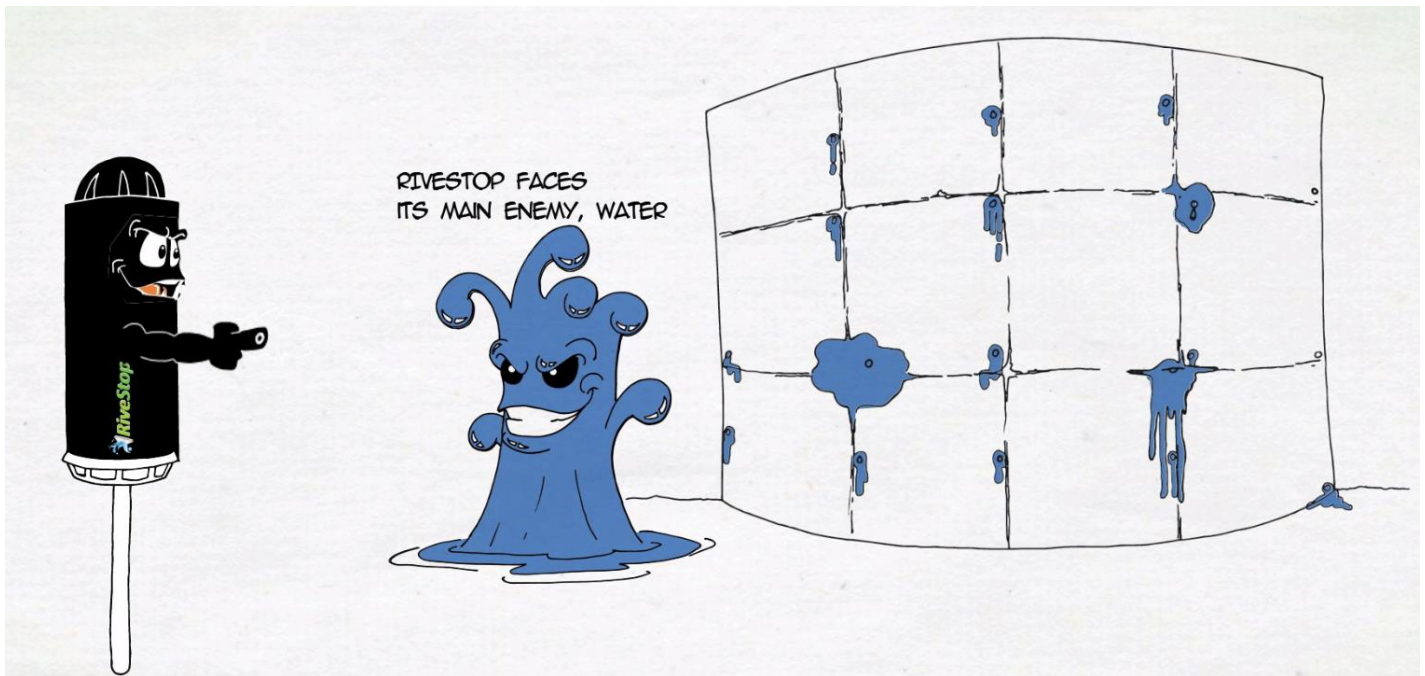
NO MARGIN FOR ERROR

1º INSERT RIVESTOP IN THE RIVETING MACHINE
2º INTRODUCE RIVESTOP IN THE HOLE
3º RIVET

JABE

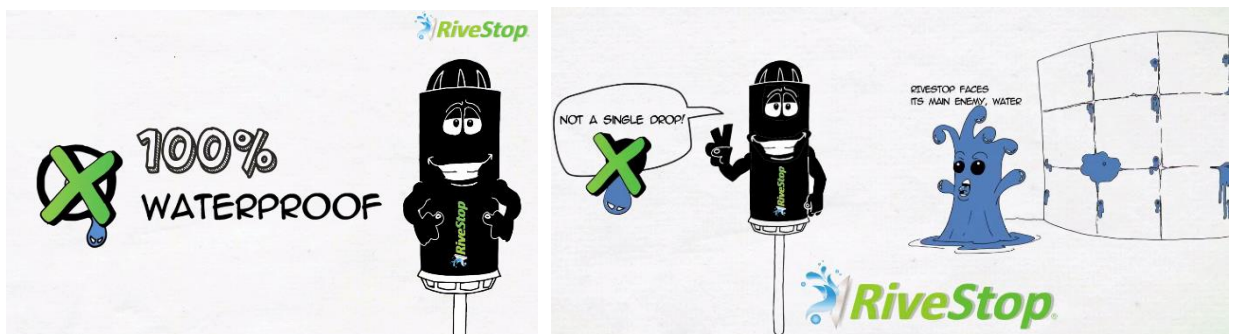
RiveStop®
THE BEST SOLUTION FOR MAXIMUM WATERPROOFING

rivestop.com

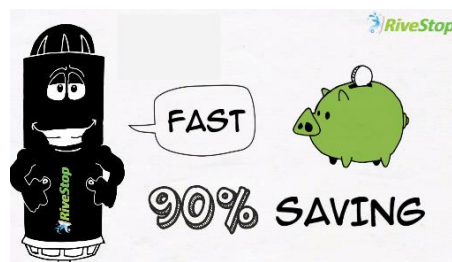


- **MAIN ADVANTAGES:**

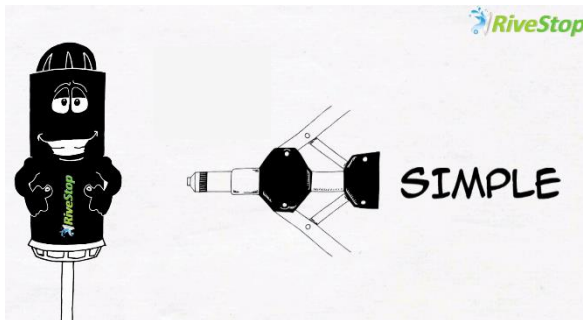
- Is a **MECHANICAL SYSTEM**: ensures a closed, permanent, constant and durable **SEAL**. 100% Waterproofing is secured and **RELIABLE**. Will work even with more than 43,51 psi (3 Bar) pressure hold (and until 257,55 psi/15 Bar), so never will slip out.



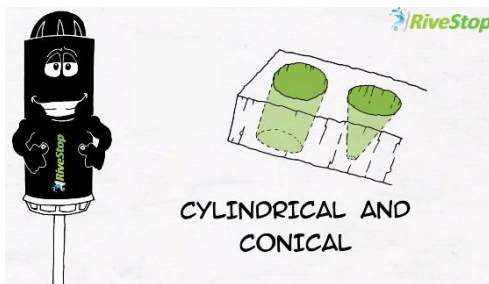
- DURABLE**: Adaptable to the concrete's integrity continuously (is an elastic rivet that changes with the concrete's behavior over the time and adapts itself to the hole), preserves the seal endlessly.
- Application is **TIME SAVING**, is truly impressive and thus cost saving: installed with a manual or electric riveter in approximately 3-5 seconds per void, is proven to safe costs when compared to other alternative sealing methods in the market. **VERY EASY TO APPLY and FAST**, can be installed 10 times faster than non-mechanical plugs.



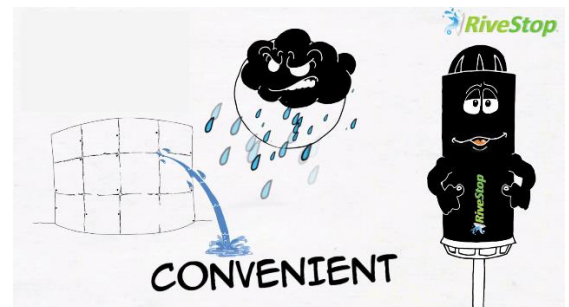
- d. **NO MARGIN OF ERROR:** Application does not depend on the operator, no special skills or training are needed. There is no way of doing it half-right or half-wrong: it either is or isn't in place applied.



- e. **ADAPTABLE:** to shape and size of holes (both for cylindrical and conic holes). No point of support is need to be applied. In conical holes it can also be placed on either side of the hole/wall.



- f. Can be applied in any weather and temperature conditions, even with water coming out of the hole.



• **OTHER ADDITIONAL ADVANTAGES:**

- g. Looking back on the walls, engineers and construction supervisors can check very quickly if the RIVESTOP is inside the hole and installed. At first glance.
- h. No other finishing to the wall is needed, but if the engineering requests a special finishing, additional product could be also used. Rivestop allows it. Also, it can be applied either in the hollow inner or in the edge of the wall, by the surface/edge of the wall's hole (for fair face walls).
- i. **CLEAN:** It does not stain the concrete or wall, no drops on the ground. No other concrete additives are needed. No longer need to use epoxy, bentonite rope, mortar etc., as an added precaution.



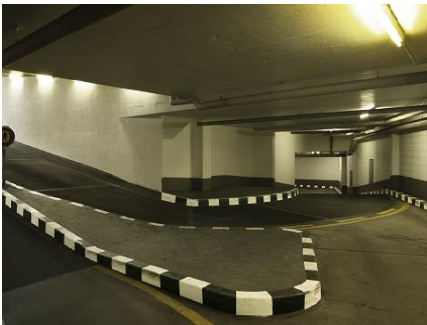
WHERE CAN and SHOULD I USE RIVESTOP?



Any deposit, tank or structure designed to be liquid-water-tight with pressure resistance.

- Water/Waste Water Treatment Facilities
- Pump Stations
- Sewage Screening Facilities
- Chemical Treatment Facilities
- Liquid Chlorination Facilities
- Ground Storage Facilities
- Undergrounds in Residential Buildings
- Flood Control and Levee Structures
- Foundations
- Dam/Levee Restorations
- Garages and Parking
- Lift shafts/elevators
- Pools
- Electrical substations
- Windmills on the sea/ Offshore barriers
- Tunnels, bridges, rain overflow chamber, dams etc.
- Amongst others

Ideal for new RESIDENTIAL building and CIVIL constructions, or for RESTORATION AND MAINTENANCE WORKS



WHY TO USE RIVESTOP WITH A TAPER TIE SYSTEM?

In this case the RIVESTOP is the ideal solution, and can be installed in one or both sizes of the wall.

The main advantages of RIVESTOP, in comparison with other plugs in the market:

- a. **RIVESTOP IS HERMETIC:** RIVESTOP do not allow internal communication or water filter inside the piece, as it is watertight (closed rubber). Also, some of our clients have certified that RIVESTOP helps for soundproofing of walls.

RIVESTOP has no internal communication between one end and the other of the rivet, ends up with a closed rubber, which means no risk of water trespassing, so is completely hermetic.



- b. RIVESTOP IS **RELIABLE TO WATERPROOFING AND HIGH PRESSURE RESISTANCE** (until 257,55 PSI/15 Bar)

Its internal **MECHANICAL SYSTEM** ensures a closed, permanent, constant and durable **SEAL** (also it adapts to the concrete behavior over the time keeping constant pressure against the hole's walls).



c. **RIVESTOP is EASY, CLEAN AND FAST:** is applied with a universal standard 2 hand- manual riveter IN SECONDS. RIVESTOP is always applied with a controlled closing/pressure, due to the riveter, and no misapplication is possible. With RIVESTOP no human factor applies, can be installed by anyone with no special skills or training, and in seconds. Moreover, electric tools are not always ideal for raining weather conditions and always needs an electric connection. Despite, RIVESTOP can be also be applied with electric riveter (even faster) or any other hand rivet guns.

The product itself, has its own mechanical system that allows the rivet to be applied with a constant force/power and controlled pressure. Which means it does not depends on the human factor.

d. RIVESTOP is completely **ADAPTABLE** to the HOLE: CYLINDRICAL AND CONICAL, no point of support is needed. **WE CAN ALSO ADAPT AND PERSONALIZE THE SIZES OF THE RIVESTOP TO YOUR NEEDS** (for hole's diameters from 0,74" to 1,41" /19 to 36 mm or any other sizes)

Other plugs can only be applied to conical holes.

e. RIVESTOP IS **EASY TO IDENTIFY AND CHECK**, it is applied near the hole, therefore you can see it at first glance (or with the hand) if the hole is sealed.

Its own system allows the operators, engineers or construction supervisor, to check the overall wall in a glance. When looking back on the finished walls and check all sealed holes, you can distinguish very easily if RIVESTOP is already inside or not and applied. Always easy to visually distinguish it.

f. RIVESTOP IS **ASSORTED**: Many different finishes are available, the outer washer in different colors, different materials etc. It is a customized product adapted to your needs.



g. RIVESTOP IS **VERSATIL**: can be applied it in the inner of the hole or in the exterior.

The main advantage between RIVESTOP or using mortar, or proxy or any chemical sealing solutions, is the man hours labor costs and time saving, which makes it much COST EFFICIENT + SEALING IS ENSURED

FAST INSTALLATION and RELIABILITY are the keywords: reduces dramatically the time of the work!
Decrease man hours and is SAFE.

ADVANTAGES OF USING RIVESTOP VS SHE BOLT TIES SYSTEM

Our advantages are:

- RIVESTOP is more economical and cost efficient than She bolt.
- RIVESTOP IS **FASTER** (NOT time consuming), it saves man hours and material costs dramatically.
- EASIER TO APPLY** without having to change the usual way/manner of formworking.
- Many of our customers have confirmed to us, and acknowledge, that some of the existing she bolt solutions in the market gets rusted and corrodes with the time (the inner coil rod), creating voids for leaks to begin and seal falls allowing water to come through between concrete and coil bolt.
- RIGID vs. ELASTIC** = due to its elasticity and mechanical system, RIVESTOP adapts itself to the concrete behavior over the time keeping constant pressure against the hole's walls. Expansion and contraction behavior of the concrete is completely different from the she bolts materials (rigid), therefore, some waterproofing falls can occur with the time. With an elastic behavior like RIVESTOP's materials, full adaptation to the concrete's behavior over the time is assured.

COSTS SAVINGS CALCULATION:

As an example based on cost to a contractor for 1.200 holes/plugs, and grout on the inside of a tank (approx. 1000-1200 m² = 1 RIVESTOP per m²).

1st step: Calculate the labor costs difference (cost of approx. \$30 per man hour), **WITH RIVESTOP YOU SAVE \$2.460 and \$630 for the total man hours and installation, which means a minimum of 91% of savings.**

- OTHER NON MECHANICAL SOLUTIONS:** with the estimated time you need per hole to prepare the mixture + time to apply to the hole the plug or plastic cone + time to apply to the solutions or mixture + time for cleaning. Approx. 85 hours x \$30 = \$2.550
- OTHER MECHANICAL SOLUTIONS:** with estimated time per hole to apply it. Approx. 26 hours x \$30 = \$720
- WITH RIVESTOP** is estimated to be max. 180 minutes = approx. 3 hours of man hours for installation in 1200 holes = 3 hours x \$30 = \$90.

CONCLUSION: you will realize that you will reach a min. 70-80% savings for man hours + materials costs + installation.

2nd step: Calculate the man hours and other savings involved with using RIVESTOP:

- Man Hours saved can be calculated either by cost savings or progress on another area of the project, (i.e. conducting leak inspections and test sooner, increased production, etc.). For **works supervision** on sealing quality, **RIVESTOP is the most convenient (human factor is not involved in application and supervisor do not need to invest his time).**
- Other means** like for example scaffolding **rentals** (per hour of works), or other means or rentals, should be taken into account.

If after this explanation, you still decide to use a she bolt system, WHY you should use RIVESTOP with it:

- You eliminate the inherent risks of different material's behaviors over the time.**
- You ensure a tight seal and WATERPROOFING in case the she bolt (inner coil rod) fails.**
- If she bolt waterproofing fails, you can REPAIR the walls by sealing the leaks from the exterior (even during a leak test) and even with water coming and pouring out of the hole.**



RIVESTOP installed in deposits (both sides possible)



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