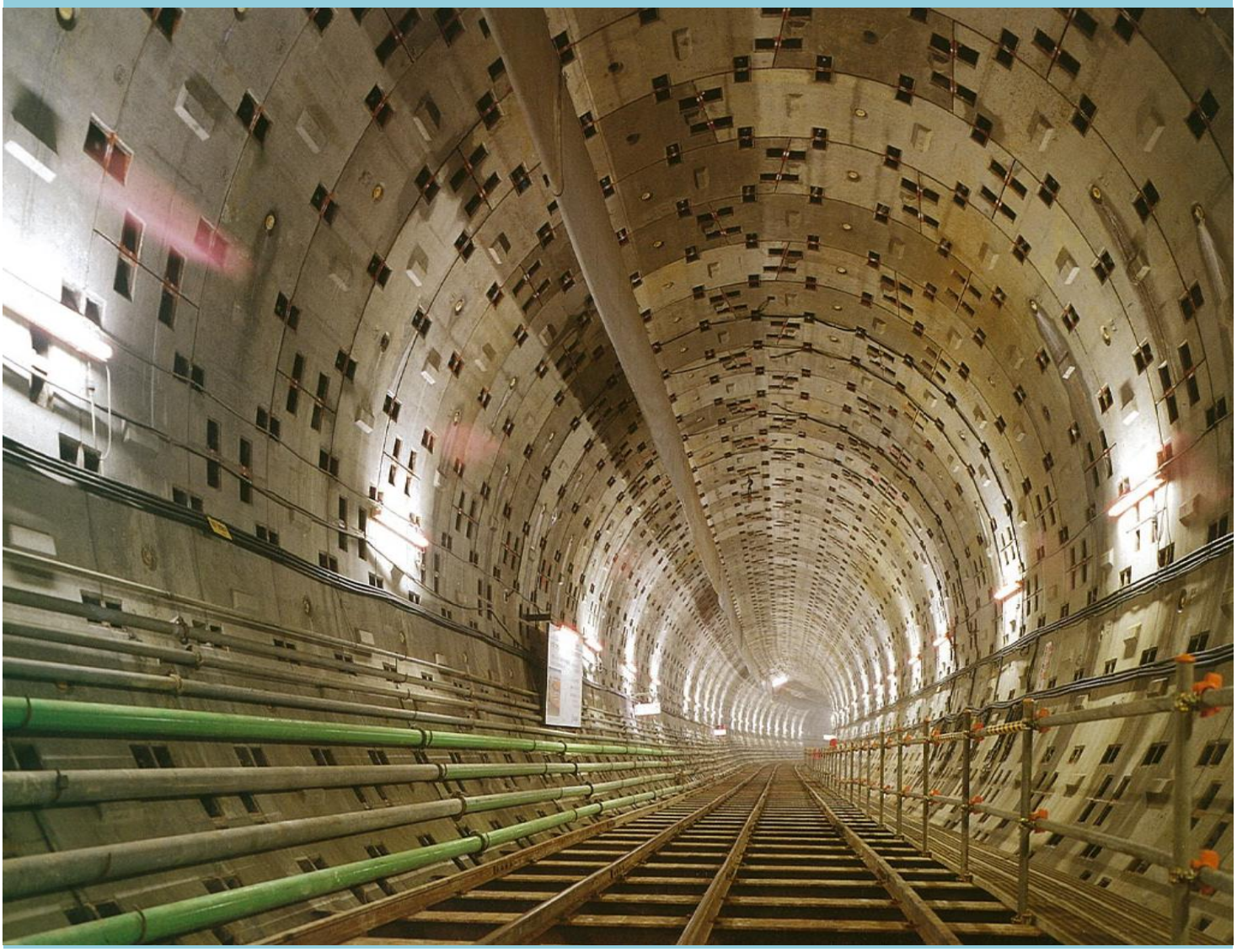
High-pressure injection water stop method

# TAP GROUT

*Japanese technology has changed history.*

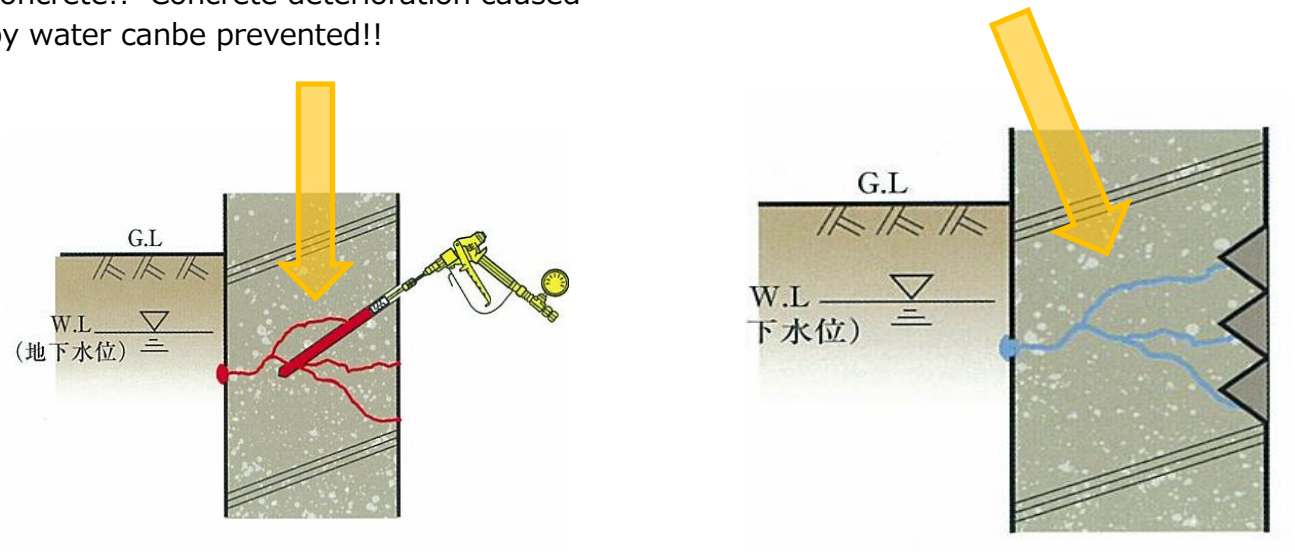
**T.Chatani & Co.,Ltd.**



The TAP Water Leakage and Repair Injection System is an injection system designed to stop and repair water leakage in concrete structures.

The high-pressure grouting method "TAP grouting method" injects and fills the water path (gap) that causes water leakage inside the concrete structure by continuously applying pressure with the tap injection liquid.As a result, the voids and water inside the concrete structure are replaced by the hardened injection material to stop water leakage, which reduces the damage to the structure compared to conventional repair methods and does not damage the function and design after repair.

| TAP GROUT | Conventional water sealing method |
|---|---|
| The water inside the concrete structure is replaced by the hardened injection material, and the leakage can be stopped. No water is left inside the concrete!! Concrete deterioration caused by water canbe prevented!! | Water is be stopped only on the concrete surface.<br>Water remain in the concrete.Leading to deterioration of the concrete over time!! |




The TAP Water Leakage and Repair System is a revolutionary construction method that not only stops water, but also improves durability, workability, and aesthetics.

## Application area

Concrete penetrations in underground structures such as joints, cold joints, cracks, junkers, separators, and around H steel

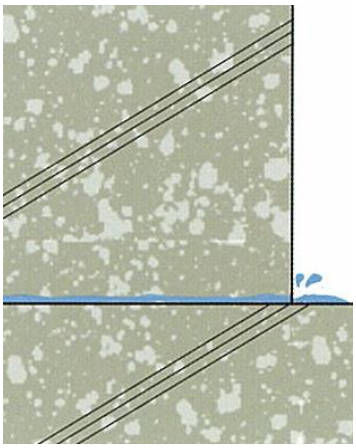
| | |
|---|---|
| Building | Water tanks, pits, swimming pools, underground parking lots, and underground interior and exterior walls, floors, and ceilings |
| infrastructure | Tunnels, ditches, dams, bridge girders, culverts, marine structures, etc. |

※ It also reacts and solidifies in solt water.

# Construction Procedures

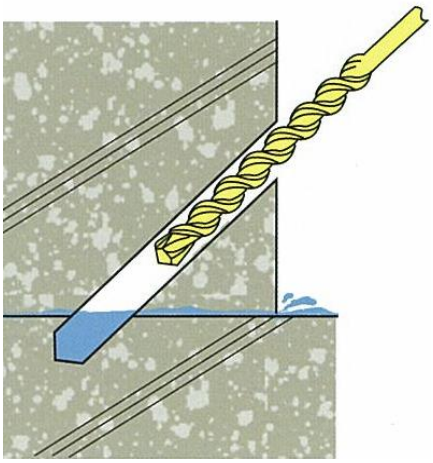
## 1 Leakage situation investigation

Clean the areas that seem to be leaking and check for leaks.
Depending on the amount of leakage, determine the location and spacing of the holes for injection.



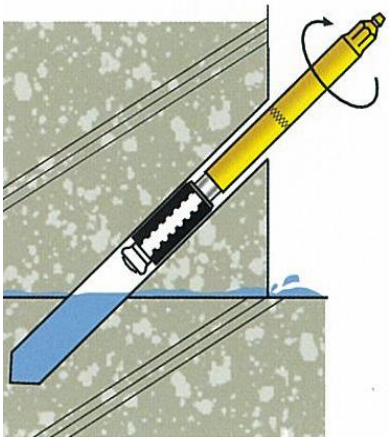
## 2 Drilling of injection hole

Drill holes with a hammer drill (vibration drill) or similar tool to penetrate the leaking area from above and below.



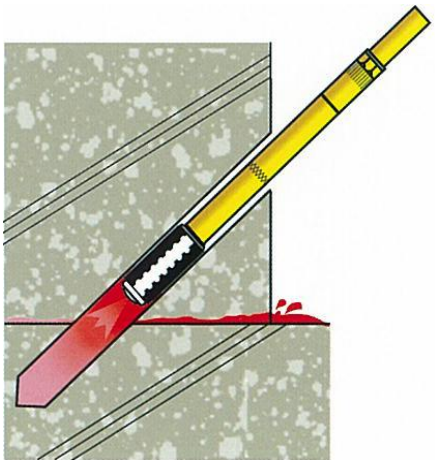
## 3 Cleaning and injection plug installation

Clean the injection hole and tighten and fix the injection plug firmly.



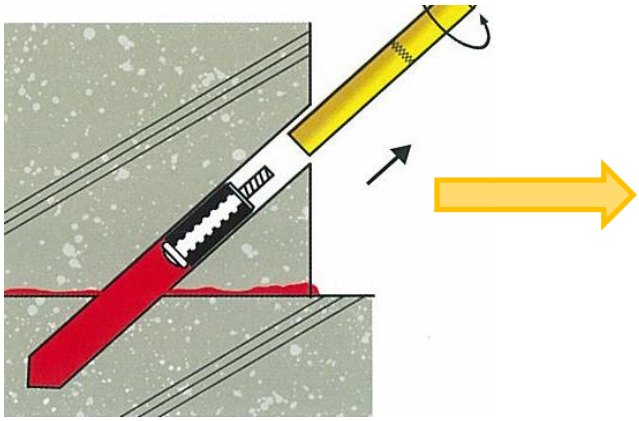
## 4 Inject tap fluid

Inject the tap injection fluid from the installed injection plug
Adjust the pressure to be injected according to the situation.



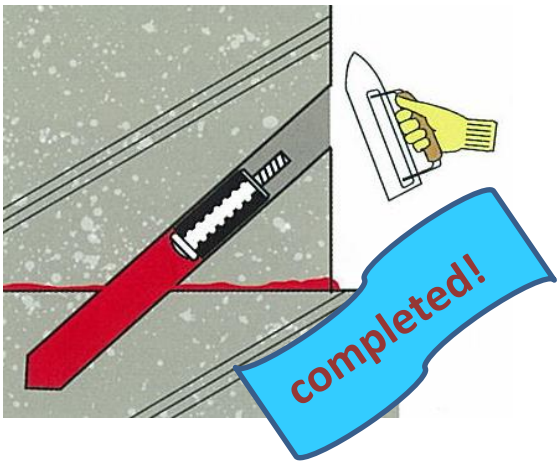
## 5 Removal of injection plug

After confirming that the injected injection fluid has hardened, loosen the injection plug and remove it.



## 6 Surface finishing and cleaning

After removal of the injection plug, clean it and fill the injection hole with mortar.




## Photos

# Materials and equipment for the TAP grout

## *TAP grout machine*

This is a compact and lightweight high-pressure injection machine developed specifically for the TAP grout method.

| | |
|---|---|
| Discharge volume | 2.5ℓ/min |
| Maximum pressure | 35Mpa（ 350kgf/cm$^2$ ） |
| Weight | 12kg |
| Drive method | Air driven（ Air compressor ） |

## *Injection plug*

This injection jig is specially designed for high-pressure injection to reduce the load on concrete structures during high-pressure injection and to prevent the body from breaking due to injection pressure.

## *Others*

### Air compressor

Air discharge volume
120 L/min or more

### Impact driver

Used to tighten and remove


### hammer drill

Install the drill bit and drill the hole for the plug.

# *TAP GROUT injection fluid*

This is a special injection liquid for the TAP injection system, which reacts with residual spring water and leaks in the concrete structure to prevent water from entering the channel.

| Injection Fluid Type | | | TA-2001 | TA-120X |
|---|---|---|---|---|
| | | |  |  |
| Characteristics | hardening | | moisture staining | Formation of hydrous gel (Resin concentration 10% or more) |
| | Hardening speed | | Standard | quick hardening |
| | strength | | Medium strength | high elasticity |
| | Advantages | | Alkali-resistant, non-solvent | Alkali-resistant, solvent-free, rapid curing |
| Performance | Appearance | | brown liquid | brown liquid |
| | Viscosity (mPa.s/20℃) | | 2000～3000 | 50～200 |
| | specific gravity (20/4℃) | | 1.17±0.05 | 1.20±0.05 |
| | flash point (℃) | | 229 | 120 |
| | coagulation point (℃) | | -10 | -25 |
| | Hardening time | mixture ratio (TA/watrer) | 90/10 | 10/90 |
| | | Time | 6-15 minutes (Depends on water ratio) | 30-70 seconds (Depends on resin density) |

TAP GROUT injection fluid is a low hazard material that is safe for human health and the environment.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