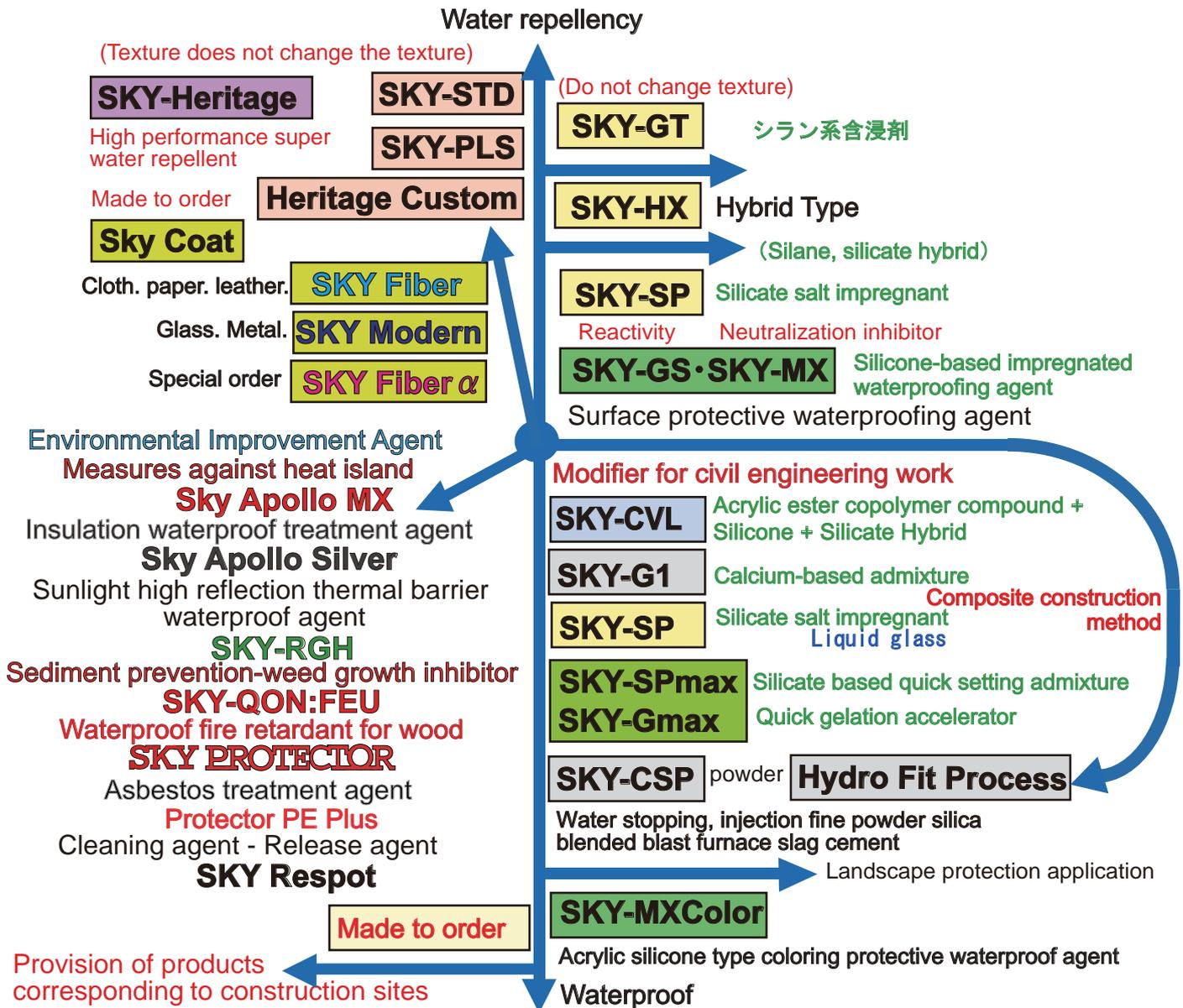


Hydrosky Construction method

In the hydrofit method,
Accurately, safely,
Promptly,
It is a proposal of a construction method
that gives
priority to the environment.

HYDROSKY

Correlation diagram



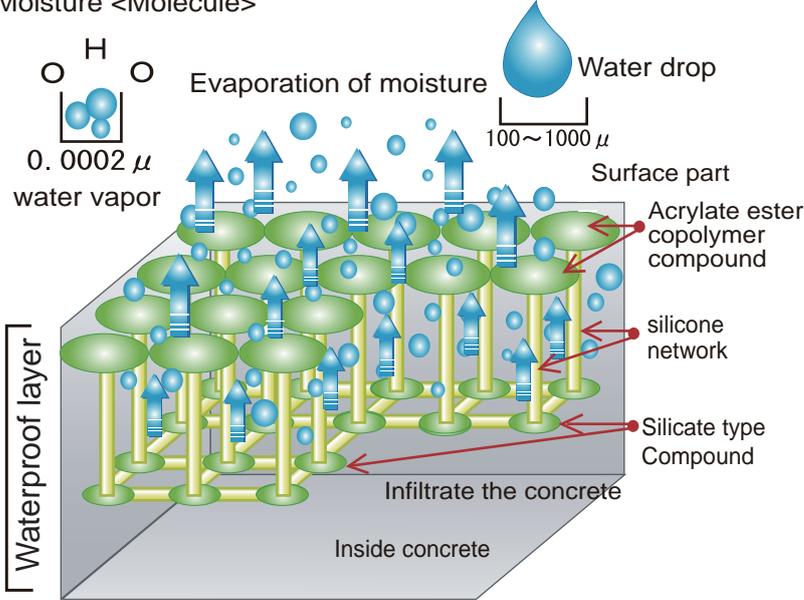
Various effects and long-term stability can be expected by combining these materials, inorganicized modified silicone and the like, as well as materials hybridized with a fluorine silicone coupling agent. Adhesiveness of the concrete joint surface increases, the strength of the frame itself also increases. The surface layer part is usually protected by a water repellent effect using a silane type impregnating agent, but at present it can only be expected to be effective for several years. Hydro-sky SKY-G1 has no hydraulic properties (air-hardness), and uneven mixing and strength variation are small. Refers to a reaction in which an object to be treated that has absorbed calcium ions further reacts to harden while forming stable crystalline minerals for a long time.



mechanism

Concrete deterioration prevention
protection waterproof image

Moisture <Molecule>



Silicone molecules similarly undergo chemical reactions on the surface and pores, and change into substances that do not allow water to enter inside the capillary and water gap, protecting the concrete. The feature of this method is effective for things that can not be replaced or rebuilt, such as bridges and underground structures, even if the construction site is small or small.

By applying and impregnating a silicate (liquid glass) HYDRO Sky SKY-SP (sodium silicate + lithium silicate) to the efflorescence preventing treatment and water stopping treatment of the joint surface of concrete, the latency treatment (white flower) It is possible and has the effect of deterring cold joint.

Conventional construction method

A major cause of deteriorating concrete structures is **cracking** caused by water.



To this crack, **V cut** and **U cut** were mainstream like the conventional repair work.

Unless you apply paint to the whole painfully, construction costs will be painfully painted.



Advantages and disadvantages of Hydrofit method

Benefits 1

In the hydrofit method,

Combine with the frame by injecting fine powder silica blast furnace slag cement paste. A highly permeable liquid agent permeates deeper and prevents water absorption, free alkali insolubilization, alkali strength recovery and the like to be obtained in the degraded surface layer.

Benefits 2

In the hydrofit method,

Construction method to integrate concrete framework and improve durability. This construction method is completed by the same construction method even in places where the construction range is large or in small places.

Benefits 3

In the hydrofit method,

Admixed with finely powdered silica blended blast furnace slag cement SKY - CSP, it has rust prevention effect of internal rebars, and induces pozzolanic reaction by fixing heavy metals.

Benefits 4

In the hydrofit method,

Since it is inorganic (aqueous), it does not generate harmful gas, so it is hermetically sealed. Construction can be done even in the place where it is located. (Measures against oxygen deficiency)

Benefits 5

In the hydrofit method,

Strength after construction-durability equivalent to concrete or more. It permanently stabilizes on.

Benefits 6

In the hydrofit method,

At the time of reconstruction, organic solvent requires removal work of construction parts, but Hydrofit method does not require that work.

Benefits 7

In the hydrofit method,

Construction is possible even when the base is wet, unlike organic solvents, curing time for drying is not required and workability is high. This will shorten the construction period.

@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@

Demerit

It is expensive compared to inexpensive organic solvent (urethane etc.). In addition to the Disadvantages are not confirmed.



Refurbishment of the swimming pool which opened to the ocean Waterproof construction



Water leak repair waterproof construction of fountain pond park



Nursing home bathtub leak repair waterproof construction



JR Tokai - Shinkansen bridge piers deterioration prevention and leakage repair work

Comparison between hydrofit method and conventional organic solvent method

Main items	Hydrofit construction method	Evaluation	Conventional organic solvent method	Evaluation
Durability	It does not deteriorate without coating film on the surface. Permanent by chemical reaction.	Best	Because it forms a film, it causes breakage and deterioration. The aged deterioration is remarkable. Year after construction (1 to 3 years).	NG
Quick drying Appearance of effect	Due to its water solubility, the effect appears after impregnation drying.	Good	Because it is a volatile system, drying quickly and effect appears quickly.	Best
Pyrophoric	Redox (burned not combusted).	Best	Because it is a petroleum type, it ignites. Risk of explosion .	NG
Odor (toxicity)	No odor, no acute toxicity.	Best	It is addictive. Dangerous goods handling .	NG
Workability	It can be constructed even if it is wet.	Best	Complete drying is necessary. Adhesion is bad if the base is wet.	NG
Convenience of repair	Can be applied repeatedly. Construction is easy.	Best	It is necessary to remove the old coating film. The workability is bad.	NG
Storability	Store at room temperature.	Good	There are restrictions on storage amount and storage location. Hazardous Material .	NG
Texture	no change.	Best	Change.	NG
Other	Neutralization can be suppressed, and effects are sustained. Construction is easy and does not require construction by a skilled worker.	Best	It does not react scientifically by surface processing method. Construction requires a skilled worker .	NG

Physical stress (earthquake resistant)

After the Tohoku earthquake, experience of seismic intensity of about 5, no leakage accident is confirmed. However, since the body after injection is very strong, leakage due to breakage of the surroundings is possible.

Physical stress (earthquake treatment)

Leakage after a major earthquake can be completed by carrying out similar injection treatment around the water leakage point.

Processing of urethane etc. needs to remove urethane again, but it completes only by injection.

In construction practice Characteristics of water glass

Responsible construction by the hydrofit method has not been confirmed as recurrence (leakage accident) from the place where water leakage stop was completed.

About SKY-SP

The main component of SKY-SP is sodium silicate and lithium silicate, a liquid in which glass and alkali metal are fused.

SKY-SP reaction

When SKY-SP (water glass) penetrated into the building body crystallizes with the evaporation of moisture, when it becomes vitrified solid and leaks again,

The water glass is re-gelled to stop water.

In construction practice

In responsible construction, leakage from the kitchen to the lower floor. Water leak in public bath. Leakage from the roof and the outer wall of the building. Pool, leakage of park fountain pond.

Water leakage from the wastewater treatment plant and the water treatment plant. Leakage floor board, leakage from highway, subway, leakage from tunnel.

Installation notice

Oxygen deficiency prevention

Confirmation of buried pipe

Noise at the time of construction (hammer drill vibration sound)

Dustproof mask, wear goggles

Safety gear

Hydro Fit Process

A : S Pmax B : Gmax

HYDROSKY

Hydrosky Construction method



- Hydrofit method has stopped water repair exclusively from concrete cracks, but considering the liquefaction solidification method, in the case of powder slag paste, most of it flows out in running water before solidifying. It was. At the same time, the two liquids are mixed spirally inside the injection pipe, and the wet surface is saturated to the viscosity from the outlet of the pipe.
- The moisture ratio of SKY-SP which is the main agent was suppressed as much as possible, and the solidification viscous ingredient was raised. It is SKY-SP max so that there is no product mistake. Although it is strongly alkaline, the second liquid of the reactant is SKY - G max and it is viscous and acidic.
- Gel in the form of compound in the reaction of these two liquids, gradually crystallize glass and never elute again unlike water glass. Moisture generated with solidification is drainable without impurities.
- As another application, SKY - SP max is sprayed on the contaminated soil and ground so that it fully penetrates the soil. Continue to chase SKY - G max and spray it. As a result, by wrapping and solidifying the part penetrated from the surface into a glass, it prevents odors and harmful substances from scattering or spilling out. This is because of the storage and storage properties of a glass container.
- For example, hazardous substances, corrosive substances, radioactive substances, etc. are also preserved in a glass container shape, which is the best method.
- This two liquid reaction does not generate heat.



It reacts abruptly from the pipe exit and solidifies

● Rapid solidification realized by two liquid spiral mixing

The second solution is a silicate type (sodium silicate) and an acidic agent. When mixed, it gels instantaneously. As a quick-filling water system, it developed as an optimal method for prevention of polluted water and pollutants flowing out to underground and ocean. The reference to this waterproofing method became a hot topic by stopping the high concentration radioactive contaminated water of Unit 2 of Fukushima Daiichi nuclear power plant from flowing out to the sea in a memory-fresh place. In this method, impurities are not mixed in the surplus water after the reaction, the waste liquid is almost neutral, and there is no heat caused by the reaction. By instantaneous gelling, we can respond to the next task conveniently, safely, and promptly. The reacted gel solidifying agent solidifies and fixes in the cracks of crushed stone and between concrete building blocks. It is widely recognized as "water glass" in general. Recent academic conferences and the Ministry of Land, Infrastructure, Transport and Tourism also take up silicate based impregnants largely. Unlike aged deterioration of organic solvents, reactive crystallization is considered to integrate with concrete and to maintain performance permanently. We are convinced that this application can be used for a wide range of applications, such as ground improvement and containment of contaminants.

★ Leakage repair of eating and drinking establishments will be completed within the time of preparation from closing



Basic operation method

- ◇ Cleaning the base (daily cleaning)
- ◇ Scattering of primary coating agent Hydro Sky SKY-SP to kitchen equipment and under sink
- ◇ Drill holes for injection into the joints, cracks, thin joints around the grating with a vibration drill
- ◇ Pressurized filler SKY - CSP and SKY - G 1 paste by pump
- ◇ Close thin joints and injected holes with resin mortar and shape them.
- ◇ The final finish is waterproofed with SKY-MX, wipe off the surplus.



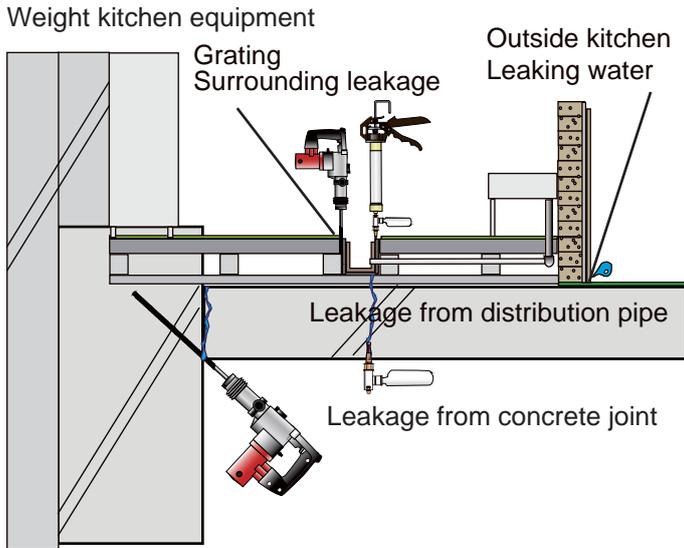
Preparation for construction

- ◇ Work tool, equipment, materials Hammer drill, drill bit 10.5 mm φ length 250 to 350 mm Depending on the frame, leakage conditions 800 to 1000 mm or more, choke
- ◇ Nebulizer, iron table, plastering arm, cement paste, bucket for kneading
- ◇ Injection device RTP-A Packer type plug (recommended item) Low pressure injection pump Hand pump for SKY-SP Pump for paste
- ◇ Material HydroSky SKY-SP · SKY-G1 · SKY-CSP · SKY-MX Repair cement



★ Leakage from the kitchen to the lower floor requires urgent!

Kitchen leakage image



- ◇ I do not understand the cause of water leakage
- ◇ We can not give up due to construction work
- ◇ Because we deal with foods, we can not use materials that smell.
- ◇ Can not move kitchen equipment
- ◇ It is limited from business closing to business preparation

★ Hydrofit method is a revolutionary water stop construction method

- ◇ Because it is an impregnating agent (permeability), it penetrates cracks
- ◇ Unlike organic materials, construction is possible in a wet place
- ◇ There is no odor in aqueous solventless
- ◇ Even if there are heavy objects of kitchen equipment, it will penetrate
- ◇ It does not affect business by dividing the construction site
- ◇ Additional repair is possible because it is physical and chemical stopping water

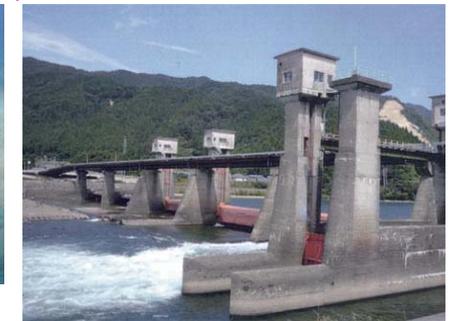


There are more than 20 liters of water leakage per minute from this area



Salt damage prevention work

Landscape protection and deterioration prevention construction Before construction



After construction



Daily maintenance of the kitchen

Besides cuisine, we offer space, space and atmosphere.
 The sensibility of "cook" is not limited to ingredients.

You can say that delicious delightfully!

You feel the healing!

I will come again. You say it!

- It is a functional ultra water and oil repellent. It makes ultra water and oil repellency appear on the surface.
- It exhibits sufficient effect even at high temperature, and it can be used for various purposes with little change in texture.
- By applying a small amount, it exhibits strong anti-soiling property, and cleaning time is shortened by spraying water.

Ministry of Land, Infrastructure and Transport
 NETIS New Technology Information System
 NETIS number: KT-160095-A
 New technology name: Hydrofit method
 (Impregnated composite injection method)



Skycoto Fiver



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Hydro SKY