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Standard construction specifications

【Standard construction manual procedures】

Super Shield

Inorganic colloidal sol, high-performance concrete waterproof protective material
(Silicate)

Path Tester

Inorganic colloidal sol, waterproof high-performance concrete
waterproof protective material only
Construction and quality control system

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CONTENTS

1. Outline

1－1. Range of outline

This construction manual procedures to concrete is for the purpose of improvement of durability of concrete structures, inhibition of degradation or repair. It is shown with the standard construction method common to summary about high-performance concrete waterproof protective material to inorganic colloidal sol (Super Shield) that summary near the surface or cross-section surface of the structure, construction and quality management system (Path Tester).

1－2. Inorganic colloidal sol high-performance concrete waterproof protective material (Super Shield)

When the medicine is applied to the concrete surface inorganic colloidal sol, high-performance concrete waterproofing and protection material (Super shield), inorganic colloidal sol is ingredient (nano-particles) to penetrate into the concrete, the air gap in infiltration of deterioration factors various concretions by the double waterproof protective effect of the local waterproof protective effect, which is also the characteristic of inorganic colloidal sol and protective action it is a method that allows a long life of bets.

Therefore, it has a high effectiveness against degradation various salt damage, neutralization, frost damage, such as wear, long and healthy concrete it is possible to keep the situation.

Further, since the order of the inorganic material, and less it is a method to demonstrate results.

1－3. Construction and quality control system (Path Tester)

1). Construction and quality control system

Inorganic colloidal sol, high-performance concrete waterproof protective material only and construction, and quality control system, concrete length inorganic colloid sol with the aim of confirming the quality and construction has been a problem of the life of method, and record keeping, high performance the management system of concrete waterproofing, protective material only.

By using the Pate Tester, coating amount of on-site testing (situ test) are possible, the coating to be able to put the installation in construction that allows anyone to determine visually easily excess or deficiency of the amount of coating, is a system of quality control.

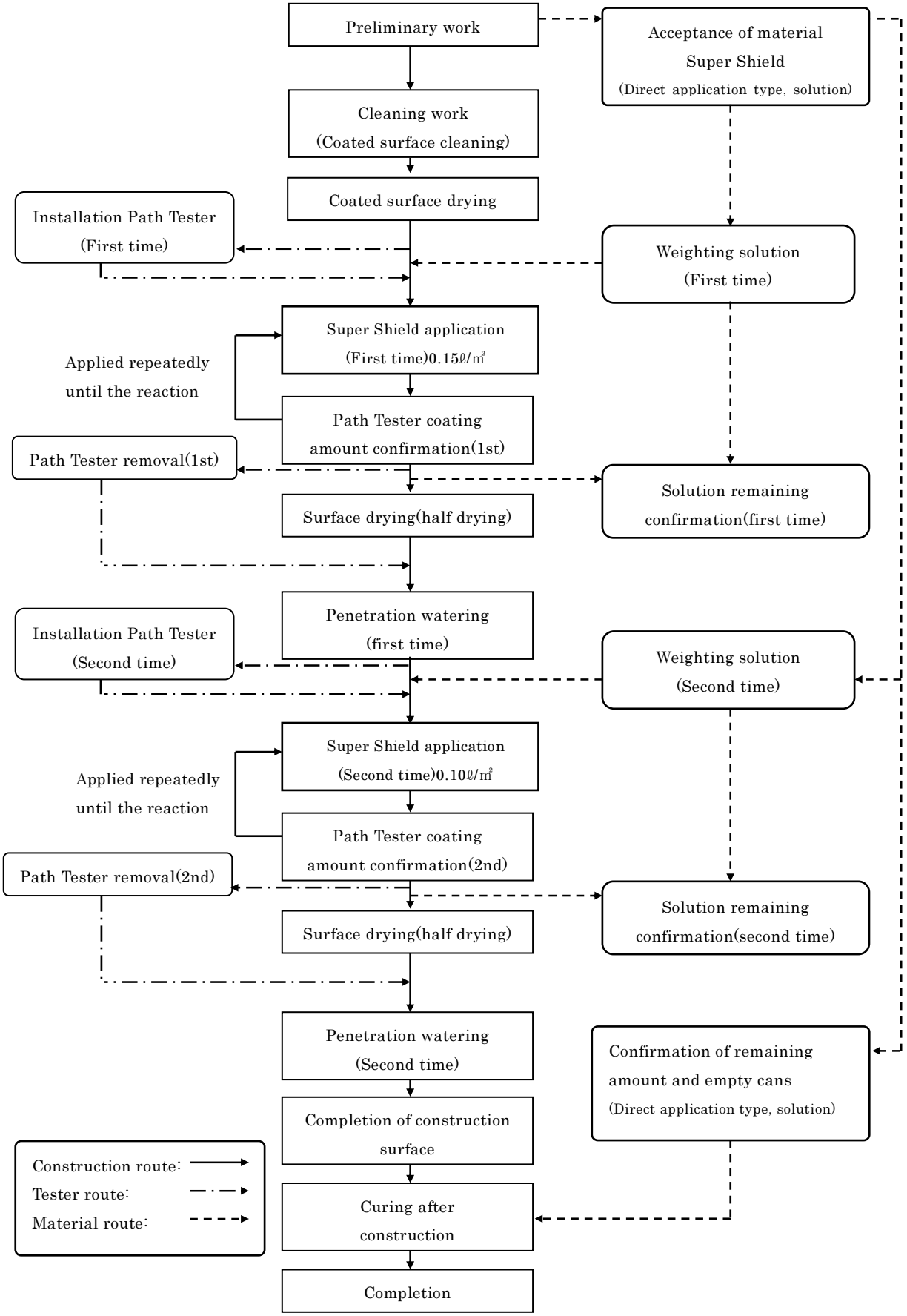
2). Quality control tester (Path Tester)

Quality control tester colorless to use (concrete long life, crack repair) to various surface waterproofing and protection method it is a thing that measured using the application principles of chemistry test a clear liquid chemical, records and stores.

Attached to the surface of the concrete structure and quality control tester, inorganic colloidal sol, high-performance concrete waterproofing, by defining the amount of coating applying a diluted chemical solution provisions are defined in the standard construction specifications of the protective member, first making a (quality control) record keeping construction (construction management) detection part of the second tester to discolor and reaction.

2. Construction method

2－1. Standard construction (Flowchart)



2－2. Preliminary work

Upon the construction inorganic colloidal sol, high-performance concrete waterproofing and protection material(Super Shield), the following matters prepare for, to confirm.

1). Local scrutiny

As breaking ground construction, it is checked in the construction area by reviewing inspection survey. It should be noted that the phase design books, the construction area if there are differences, and to consult with supervisory staff.

2). Acceptance of material

After doing local scrutiny and confirming of the construction area, submit catalog of the materials used and the test report, get the consent of the supervisory staff.

3). Preprocessing

If you are applying a Super Shield the new structure, after casting of concrete, went curing period prescribed it performs preprocessing, such as the following, as needed. Description is made as needed and may be a construction to existing structures.

①. Deterioration processing unit

Remove in an appropriate manner of the concrete part containing the degradation factor and concrete degraded.

②. Cross-section repair

If there are missing portions in order to return the original cross-section, after the rustproofing rebar or the like, if necessary, to perform the cross-sectional repair suitable methods and materials. It should be noted that when selecting a repair material cross-section, will be considered to the construction standards.

③. Ground processing

If there is joint strike, cold joint, Janka(defective part of the concrete surface), float, water leakage, loss, cracks of 0.2mm or more, significant irregularities, and fragile part, and treated in an appropriate manner in accordance with the circumstances of the underlying. It should be noted that for the surface treatment material, comply with the cross-section repair.

4). Construction before curing

If a third party or peripheral members of the treated region, such as the residents of the structure around, car or shrubbery, there is a risk of contamination due to scattering of the material, in construction before, and appropriate with curing film, and sheet I do curing. Also, if you had deposited the Super Shield by mistake to the site of the treated region other than, in each case, to wash in water as soon as possible.

2－3. Cleaning work (coated surface cleaning)

1). Cleaning of concrete construction surface

On the concrete surface, when the dirt oils and fats, such as release agents, such as to inhibit the impregnation of Super Shield, rust juice, laitance, mud, and moss is attached to clean with a brush or the like and high-pressure washing machine .

2－4. Material

1). Handling of material

①. Super Shield solution, store in a location that is not affected by direct sunlight at place temperature of 5 ℃ or more.

②. Super Shield solution that was once opened, store with care not to let any foreign matters fall into.

③. When dealing with Super Shield solution, if you wear a waterproof and protective equipment, it adheres to the skin by mistake, flush with water immediately.

2). Weighting of the coating solution

①. After the acceptance of material Super Shield solution, using (weighing container, scales) the calculator, measuring the volume of solution required for the construction given area, use as hand mixer before installation, and then stirred to use.

②. The calculation of the construction volume of super shield solution to perform metering using the following calculation formula.

Construction capacity calculation of super shield (direct application type, solution)

Name		Calculation formula
First time	Super Shield solution(ℓ)	{Construction area(㎡)×0.15ℓ/㎡×1.15(15% loss rate)
Second time	Super Shield solution(ℓ)	{Construction area(㎡)×0.10ℓ/㎡×1.15(15% loss rate)
※The application of the field, in consideration of the spray losses, calculations are performed by recorded loss rate(15%)		

2－5. Curing watering

1). Handling of material

During construction of summer, if it is dry concrete surface to be coated is heated to a high temperature, the water spray at low pressure, and to wet concrete surfaces.

2－6. Super Shield solution application (first time)

1). Solution application (first time)

Before the construction surface of after curing watering is dried, for example, by using the electric sprayer, the coating method of the solution, applying 0.15 ℓ / m².

2). Considerations for application

①. Is applied continuously from top to bottom is the vertical plane.

②. Plane is applied toward the lower of higher gradient.

③. Is applied by spacing about 30 ㎝, the interval is coated surface with sprayer.

④. Such as an electric sprayer, spray volume to use a sprayer of time.

⑤. Temperature at the time of construction, keeping the 5℃ or more.

(Doing such as fire curing, depending on need)

⑥. In the construction of the outdoors, when affected by the wind, making a curing such as avoiding wind.

2－7. Surface drying (first time)

Application of the solution (first time) is complete, and allowed to air dry until half dry (as a rule of thumb, a degree that is felt sticky when touched by hand) the coated surface. The time to dry, because it varies depending on temperature, was observed after application course, be careful not to do too dry.

※Drying was carried out indirectly, even if it is carried out by using a hot air, is not directly used by the application surface.

2－8. Penetration watering (first time)

After confirming the semi-dry state of the coated surface, in order to increase the reaction and promote penetration into the concrete, by spraying evenly so as not run off a low pressure sprayer a clear water, to carry out wet curing.

※In the case of (late September from the end of June), summer construction chemical solution applied after the first, rapid drying is expected

2－9. Super Shield solution application (second time)

1). Solution application (second time)

Before construction surface of the (first time) to dry after watering penetration, using an electric sprayer as well as first time, the application method for the second time, to apply the 0.10 ℓ / m².

※Note is the same as the first time.

2－10. Surface drying (second time)

In order to cheat the first time on how to do this.

2－11. Penetration watering (second time)

In order to cheat the first time on how to do this

※In the case of (late September from the end of June), summer construction chemical solution applied after the second, rapid drying is expected

2－12. Finish of construction surface (cleaning of construction surface)

※ If you are applying a finishing process to the coated surface

Super Shield penetration watering after the end of the second, remaining on the surface is dry, there is a case where white slag spoil the rest aesthetics. So, before the construction surface is completely dry, and rubbed with a deck brush or the like to wash.

2－13. Curing after construction

1). Curing normal

After completion of washing in water, it takes about 4 hours to 8 hours Super Shield until the reaction surface is dry, if such a sudden heavy rain is expected, it is curing, such as sheet coated surface.

2). Curing during construction winter

If there is a risk of freezing in winter construction and curing temperature for more than one day you do not want to freeze with fire, etc. (heat supply) and (5 ℃ around).

2－14. Path Tester

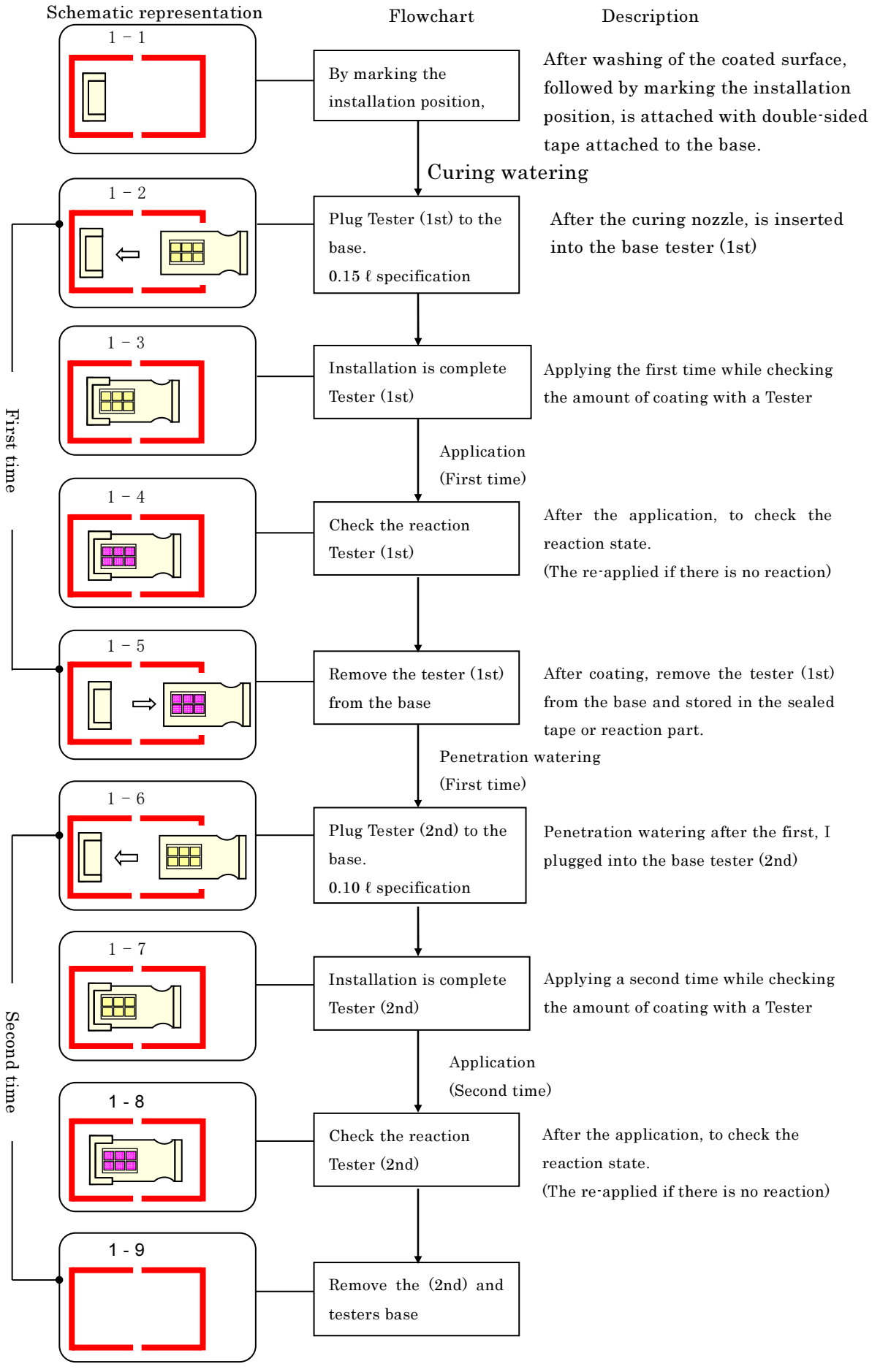
1). Installation of Path Tester

To be installed firmly in place in order of application amount confirmation of Super Shield, and visible at a frequency of one place / 10 ㎡ construction cross section per Path Tester. (First time application is the 1st, second time 2nd) However, I attach one place about if treated region is less than 10 ㎡. ※First application(1st) 0.15ℓ specification, second application(2nd)0.10ℓ specification

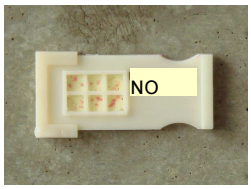
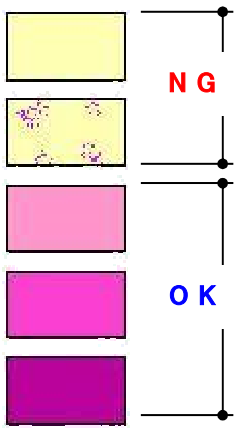
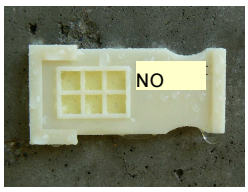
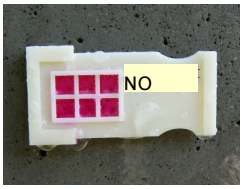
2). Use of standard Path Tester

Path Tester uses for the purpose of construction confirmation and record-keeping coating amount of the Super Shield, minimizes construction irregularities by management point each fitted with a tester, and a visual check of the application amount and the construction speed.

3). Instructions for using the Path Tester



4). The decision by the example of discoloration reaction Path Tester

Discoloration reaction and photo	Decision	Conditions / Reaction	Standard discoloration reaction table
	✕	If the coating amount prescribed by the manufacturer is not enough ● Not seen a clear coloring	
	✕	If the construction is performed diluted with threshold value or more ● And there is little coloring ● Can not confirm a clear reaction	
	○	If the coating amount as defined is sprayed ● Can see a clear coloring	

3. Considerations of super shield handling

3－1. Considerations on construction

① Because there is that the drug comes into contact with the skin, skin irritation, such as redness or rash appears, the material handling, I wear protective clothing and protective gloves made of waterproof.
In the case where the direct contact with the drug by mistake, pain and inflammation occurs in the skin, seek medical attention immediately.

② In order to prevent from entering the eye drug is scattered, it is used to wear waterproof protection glasses.
※If it gets into eyes, rinse with a large amount of cool water, seek medical attention immediately.

3－2. Preservation method

① Drug is noncombustible not flammable, but because of poly containers, it is considered an accident of expansion cracks rupture of the deformation and the solution stored at near fire, please avoid the storage of fire in the vicinity.

② Avoid direct sunlight, please keep it indoors.

③ The solution of the super shield, please keep it in a location that is not affected by direct sunlight at room temperature of 5 ℃ or more.
※This product can be safely frozen and thawing, but please private it after stirring well after freezing.

④ The drug that was once opened, please keep it to seal foreign matter to prevent contamination.

3－3. Notes on handling

① This product is not a food, please do not be like swallowing the drug.

② When the color of the discoloration reaction time gets on your hands or clothes, please wash it away with clean water immediately.

③ Please do not keep it to places like reach of children.

3－4. Other

Super Shield, we are creating have paid close attention to the basis of the knowledge possessed by the Company. However, are those on the normal use for this description, for use in the special conditions, it does not guarantee all. For now placed in use, I ask to be aware of the handling that is line with the conditions of your use, you will be asked to use.

4. Considerations Path Tester handling

4－1. Considerations on construction

①. Please use it is removed from the aluminum pack just prior to use tester.

②. Please securely installed to clean the surface thoroughly adhered to the installation of the tester.

③. Note that carelessly touch detection part of the tester, so as not to get wet with water before applying the chemical.

④. Please do construction reliably while checking the status color is so weakened if the color after suspension, is less than the specified amount.

⑤. Aluminum pack after opening the tester, if you want to temporarily store out of necessity, to keep away from humid place or a place exposed to direct sunlight, please as soon as possible use.

4－2. Preservation method (Note the tester Archives of after use)

①. Record keeping at the time, discoloration reaction will be slightly thinner in some cases discoloration than the initial stage of the reaction, but it is not a problem.
Further, when determining the tester discolored reaction, please construction judgment by comparison with a standard, discoloration reaction table that is described on the box.

②. If you want to attach to the construction, quality control file, by winding the cellophane tape, such as cellophane in order to waterproof and protect the detection portion of the first time and the second time each dedicated tester, please use in a sealed state always.

③. Attached after construction, and quality control file, barrel place, where there is a lot of humidity, please keep it carefully to avoid the direct sunlight.

④. As with tester body, please do not store in a car that exceeds 60 ℃.

⑤. Even for a short time, please do not store in a car of in excess of 60 ℃.

4－3. Notes on handling

①. Please do not be such as to heat significantly tester main body is brought close to those other fire, heating.

②. This product is not a food, please do not be placed in the mouth tester, such as accidental ingestion.

③. When the color of the discoloration reaction time gets on your hands or clothes, please wash it away with clean water immediately.

④. Please do not keep it to places like reach of children.

4－4. Other

Path Tester, we are creating have paid close attention to the basis of the knowledge possessed by the Company. However, are those on the normal use for this description, for use in the special conditions, it does not guarantee all. For now placed in use, I ask to be aware of the handling that is line with the conditions of your use, you will be asked to use.

※Products, etc. , For more information, please refer to fit the Super Shield Material Safety Data Sheet (MSDS), Path Tester Material Safety Data Sheet (MSDS).

After you read the instruction manual that came with your Path Tester and Super Shield always before installation, please use correctly and safely. Also, please note that it may change the specifications without notice.

〔Total sales agency〕

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