

◆ manufactured goods



Bevel Plug
100 pieces/box ×10 /Packaging



Seal cement
10 bottles/box ×10 /Packaging



Ultrafine polymer cement injection material
10 pac/box ×10 /Packaging

Please refer to the separate material catalogue

◆ Construction tools (reference)



Drilling tool set
Water flow type drilling equipment
AC 100V



Manual Infusion Pump
Suction capacity:
approx. 40cc



Manual Pressure Pump
Pre-assembled
Dedicated head clamp
Pressure-resistant hose 2m
pressure gauge

Manufactured by
Japan Mente Corporation



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Crack injection method using inorganic materials

Bevel Plug Method

The Bevel Plug Method was developed to efficiently inject a cement-based material—having the same quality as the original concrete—into cracks that occur in concrete structures. This method enables the complete injection of inorganic material, which was difficult to achieve with conventional techniques.

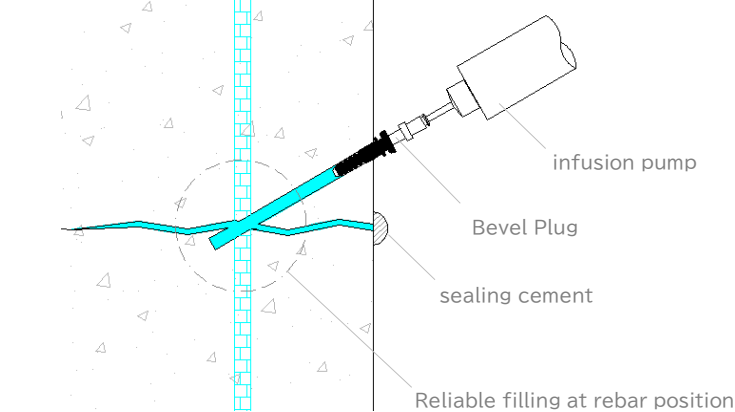


As a concrete syringe

When injecting cementitious materials, it is essential to consider the properties of the material and to use a method that provides appropriate injection pressure and allows continuous injection. In addition, using a direct injection method from inside the crack enables reliable filling of the material without being affected by surface blockages. The bevel plug, which can be attached to the drilled hole with a single touch, is an injection plug optimized for injecting cementitious materials.

Easy and streamlined application

[Injection concept diagram]



Each plug functions as an injection port, an air vent, and a relief port, allowing the required amount of injection material to be reliably delivered into the crack. In addition, by using a cartridge-type injection material, large equipment is not required, making it easy to perform the work even in narrow spaces or on scaffolding.

Drilling injection holes using a water jet drill



Construction by pressurized injection using a manual injection pump



Bevel Plug



water flow type drilling equipment



injection equipment



Various inorganic injection materials



RestorAID

What is required for crack repair?

◆The materials and construction methods are for medical purposes

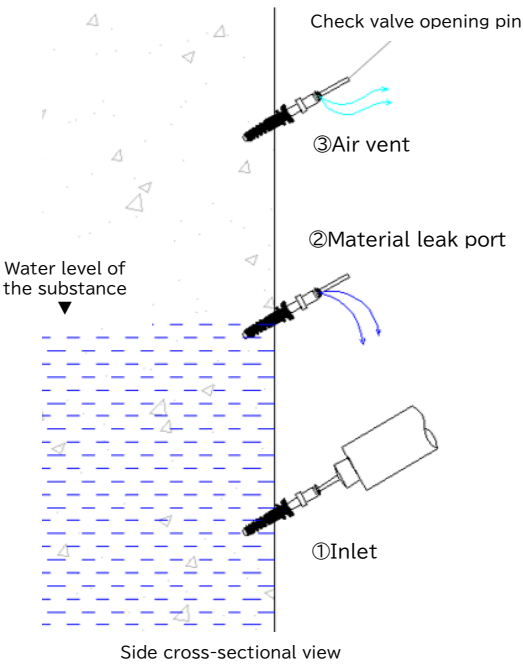


The purpose of repairing cracks in concrete structures is to prevent corrosion of the reinforcing steel. The primary objective is to restore the protective, non-conductive cover around the rebar using cementitious materials. Furthermore, what is required in crack repair is not unnecessarily high bond strength, but rather the restoration of the structure to its original condition.

By using an ultra-fine particle cement injection material (average 4 μm), it is now possible to inject into cracks ranging from very fine to relatively wide. In addition, various materials can be selected and combined depending on the cause of the cracking. As a result, this method can be used not only for filling cracks but also as an injection technique for improving and preventing the deterioration of concrete structures.



◆Crack full injection system



The bevel plug has a built-in check valve that remains closed under normal conditions. When the included valve-release pin is inserted, the check valve opens.

①Inlet
Using a hand-operated injection gun, the inorganic injection grout is injected into the plug under appropriate pressure.

②Material leak port
By inserting the check-valve opening pin, the plug functions as a port for checking leakage of the material injected into the crack.

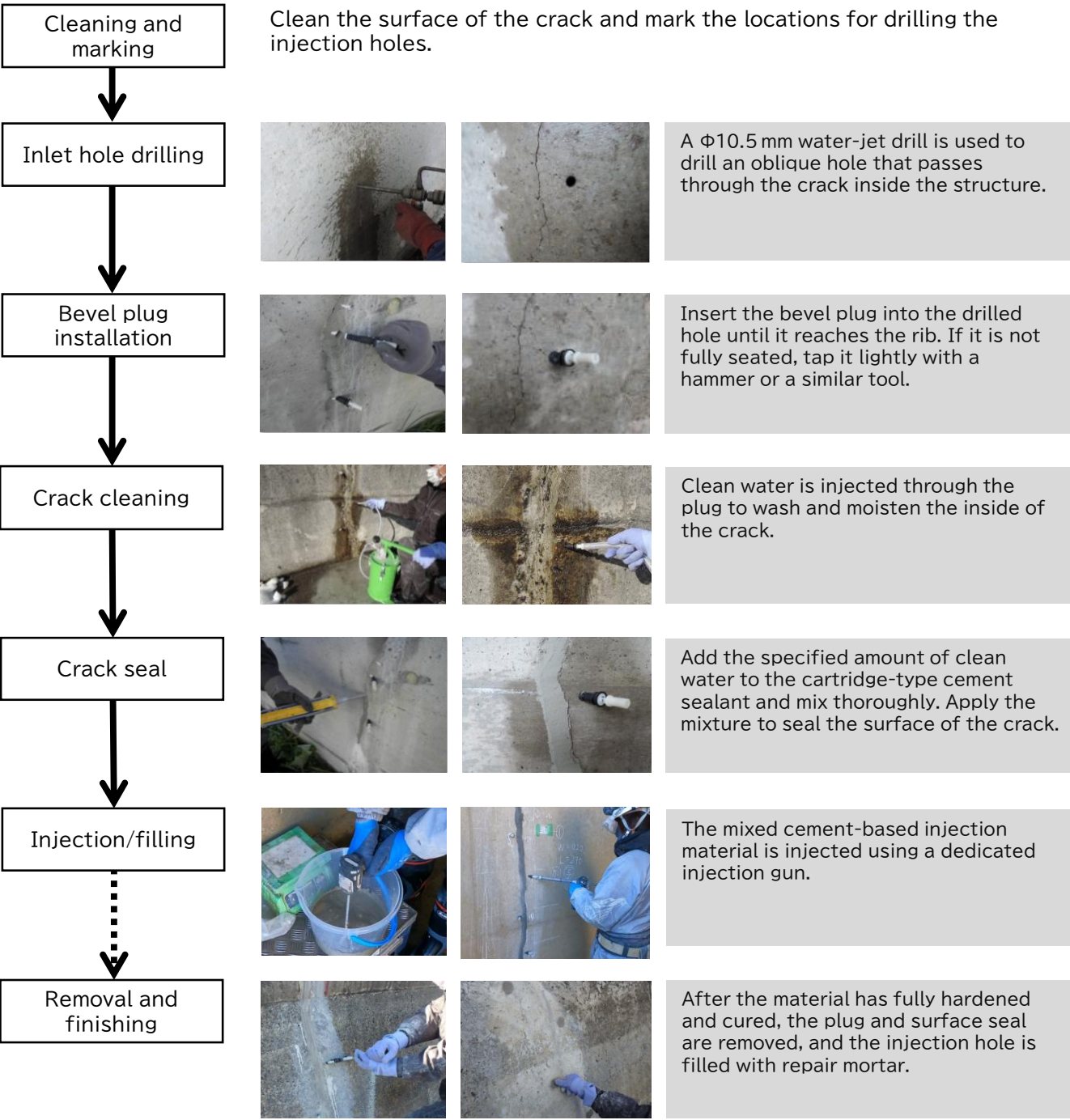
③Air vent
By inserting the check-valve release pin, the air inside the crack is vented, relieving the internal pressure that inhibits injection. Check for material leakage from the plugs located near the injection port (typically from bottom to top), and proceed to check the remaining plugs in sequence.

◆Bevel Plug Method repair scope

Repair target	Properties	Applicable crack width	behavior
Cracks targeted in Evaluation I*1	Cracks caused by initial defects such as drying shrinkage	0.2mm~10mm	small※3
Cracks targeted in Evaluation II*2	Cracks caused by deterioration factors such as carbonation, salt damage, and ASR		
Honeycomb (in concrete)	Internal voids, cold joints, etc.	—	
Water leak crack	Spring water from the rear of the structure	—	

※1 Temperature cracks, drying shrinkage cracks, etc.
※2 Progressive cracking, such as corrosion cracking due to neutralization or salt damage
※3 Minor behavior due to seasonal temperature fluctuations, etc.

Work Procedure



Safety Precautions

- Please use this product as described in the catalog.
- When applying the product, be sure to wear protective equipment (gloves, safety glasses, mask, etc.) to avoid direct contact with eyes, nose, skin, and clothing.
- If the product accidentally gets into your eyes, immediately rinse thoroughly with clean water and then consult a doctor immediately.
- If swallowed by mistake, spit it out immediately, rinse thoroughly with clean water, and seek medical advice.
- If it gets on your skin, rinse immediately with water
- After work, wash your hands and gargle