

SHO-BOND HYBRID SHEET METHOD

Concrete spalling prevention method

A technology review certificate is obtained. [Technology Review Certificate No. 0014]



Uses

- 1) Concrete spalling prevention method
This method affords excellent spalling-prevention performance and can reduce the number of on-site workdays.
- 2) This method can cope with deterioration (due to salt damage and neutralization).
Like a protective coating of concrete, this method provides protection against salt damage and affords neutralization-restraining performance.
- 3) Reinforcement can be attained by overlaying without peeling.
The initial work completed can be maintained as is without being wasted when future reinforcement is performed through steel plate bonding or CFRP bonding.

Configuration

On the concrete surface, HB sheets are pasted with an adhesive.

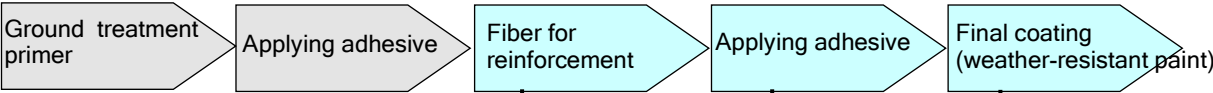
The HB sheet is a special laminate sheet provided with a spalling-prevention function for concrete, and offers excellent weather resistance.

Using this sheet condenses the conventional method and allows on-site work to be rapidly completed with stable quality.

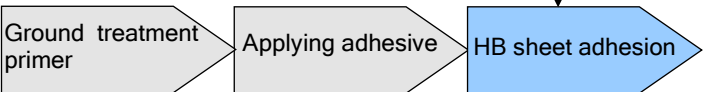


HB sheet

●Conventional method



●HYBRID SHEET METHOD



(Three processes are arranged into one sheet.)

Features

Reduction of work period ... Compared to the conventional method, the number of traffic control days can be reduced by half.

This method is effective for positions requiring the rapid completion of work, such as for overhead and elevated bridges for which traffic control is exerted on the road.



●Work flow



Grounding treatment

Applying primer

Applying adhesive

Adhesion of HB sheet

Completion

The SHO-BOND HYBRID SHEET METHOD has obtained a technology review certificate.

■The SHO-BOND HYBRID SHEET METHOD has been approved as having the following performance.:

- (1) The intended concrete spalling-prevention performance is provided.
- (2) The intended deteriorating factor invasion control performance for concrete structures is provided.
- (3) The intended durability performance is provided.
- (4) The intended re-repairing performance is provided.
- (5) The intended reduction of the construction period is provided.

■Goals for development

- (1) Concrete spalling-prevention performance
 - Load: 1.5 kN or more at a displacement of 10 mm or more (punching test)
 - Elongation: 0.6 mm or more (crack follow-up performance test)
- (2) Deteriorating factor invasion control performance
 - Amount of chloride ions transmitted: 0.005 g/m² per day or less
 - Amount of oxygen transmitted: 5.0 x 10⁻² mg/cm² per day or less
 - Amount of vapor transmitted: 5.0 mg/cm² per day or less
 - Neutralization depth: 1 mm or less (neutralization stop performance test)
- (3) Durability performance
 - Adhesive strength after 2000 hours of accelerated weather resistance testing: 1.5 N/mm² or more and no change in appearance after 3000 hours.
 - Adhesive strength after alkali resistance testing: 1.5 N/mm² or more and no change in appearance
 - Modulus of relative dynamic elasticity after 300 cycles of freezing and thawing testing: 60% or more
- (4) Re-repairing performance
 - In case of partial damage, overlaying the laminate sheet on the damaged position shall permit recovering the same performance as in non-damage status.
- (5) Reduction of construction period
 - As compared with the on-site laminate type, the man-hours for on-site operations shall be cut by about half to reduce the construction period.

Standard specifications

(per 100 m²)

Process	Applicable material	Unit	Quantity required	Remarks
Primer process	SHO-BOND Neo Primer	kg	10.0	
Impregnated adhesive application	SHO-BOND HB	kg	100.0	
Special laminate sheet adhesion	SHO-BOND HB Sheet	m ²	120.0	Including loss

Quality standard for applicable materials

●SHO-BOND Neo Primer

Test item	Test method	Test condition	Unit	Standard value
Viscosity	JIS K 6833	23°C	mPa · s	100 or less
Adhesive strength	JIS A 6909	23°C for 7 days	N/mm ²	2.0 or more

●SHO-BOND HB

Test item	Test method	Test condition	Unit	Standard value
Bending strength	JIS K 7203	20°C for 7 days	N/mm ²	30 or more
Tensile strength	JIS K 7113	20°C for 7 days	N/mm ²	20 or more
Tensile shearing adhesive strength	JIS K 6850	20°C for 7 days	N/mm ²	10 or more

●SHO-BOND HB Sheet

Test item	Test method	Test condition	Unit	Standard value
Appearance	Visual inspection	20°C	-	No flaws, peeling or discoloration shall be observed.
Mass	JIS L 1096	20°C	g/m ²	150 or more
Tensile strength	JIS L 1096	20°C	N/25mm	200 or more

* Including one reinforcing fiber in the center of a test piece 25-mm wide.

■ Manufactured by

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★ For the purpose of quality improvement, product specifications are subject to change without notice.

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