Repair Strategy of Reinforced Concrete Beams Damaged by Chloride-Induced Corrosion

Khalilah binti Kamarulzaman Department of Civil and Structural Engineering, Kyushu University

Astuti, Pinta Department of Civil and Structural Engineering, Kyushu University

Rahmita Sari Rafdinal P.S. Mitsubishi Construction Co. Ltd.

濱田, 秀則 Department of Civil and Structural Engineering, Kyushu University

他

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REPAIR STRATEGY OF REINFORCED CONCRETE BEAMS DAMAGED BY CHLORIDE-INDUCED CORROSION

Khalilah binti Kamarulzaman*, Pinta Astuti*, Rahmita Sari Rafdinal**, Hidenori Hamada*, Yasutaka Sagawa*, Daisuke Yamamoto* (*Department of Civil and Structural Engineering, Kyushu University; **P.S. Mitsubishi Construction Co. Ltd.)

Background

<u>OBJECTIVE</u> : to determine repair strategy of severely damaged RC beam due to chloride-induced corrosion in order to extend the life time until about 70 years







Deterioration by chloride-induced corrosion has been one of the main causes that decreases service life of reinforced concrete (RC) structures in marine environment. Therefore, repair method is compulsory in order to control

Application of Sacrificial Anode Cathodic Protection (SACP)



Simple method of protection connects the metal to be protected to a more easily corroded to act as the anode.













- In patch repair section, corrosion inhibitor prevented further corrosion of rebar, while SACP improved the condition of rebar.
- Overall, rebar in both specimens improved after 12-months of application.



Effect of SACP focuses on surrounding of the anodes during early stage, however, it spreads throughout the beam.

Conclusion

- After 12 months of observation, result shows that both repair methods are capable to control corrosion on rebar surface.
- Even for deteriorated structures with such critical condition, its service life is still able to be extended when repair method is applied.

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