

# Expressway Maintenance - 4

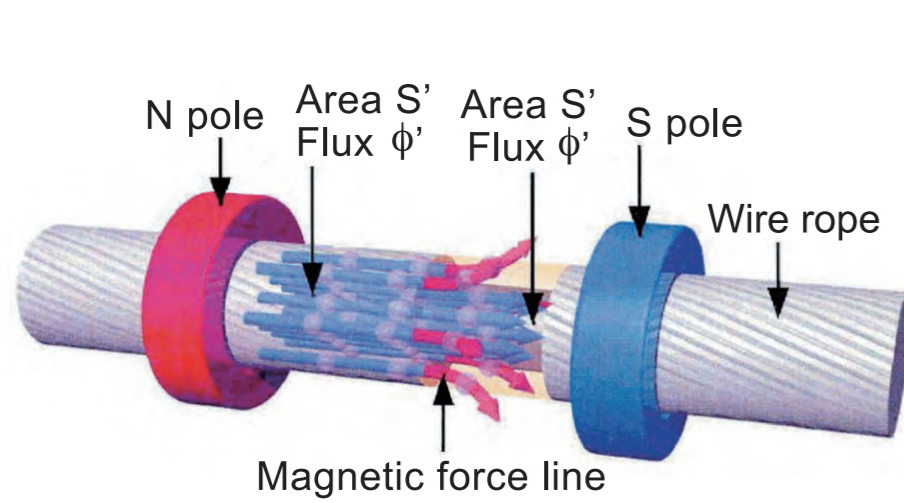
## Maintenance Technologies for Suspension Bridges

고속도로 관리-4  
현수교의 보전 기술

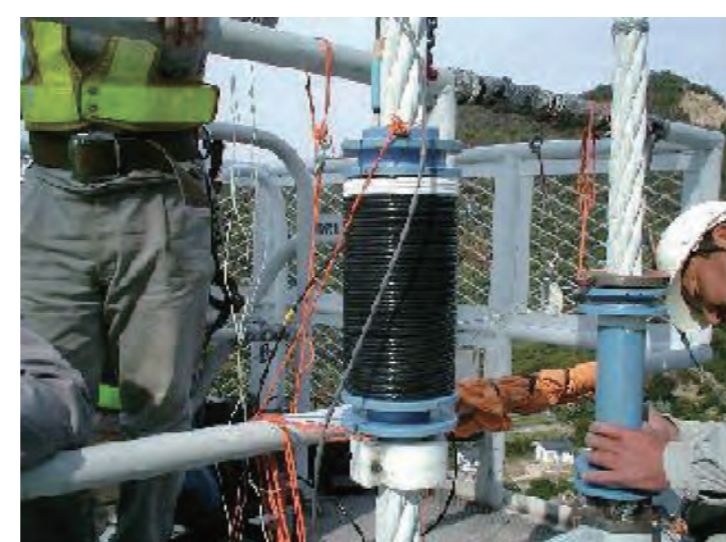
### Asset Management for Ensuring more than 200 Years of Service Life

#### ■ Inspection & Repair Technology - Maintenance of Suspender Rope -

A Center Fit Wire Rope Core (CFRC) Rope used for a suspender rope is vulnerable to water intrusion, which induces internal corrosion of the rope. A nondestructive inspection technique, an electromagnetic method (main flux method), was developed to detect the corrosion. An optimum countermeasure from among replacement of the rope, infill method and recoating is selected and applied according to its corrosion state.



Principle of Main Flux Method



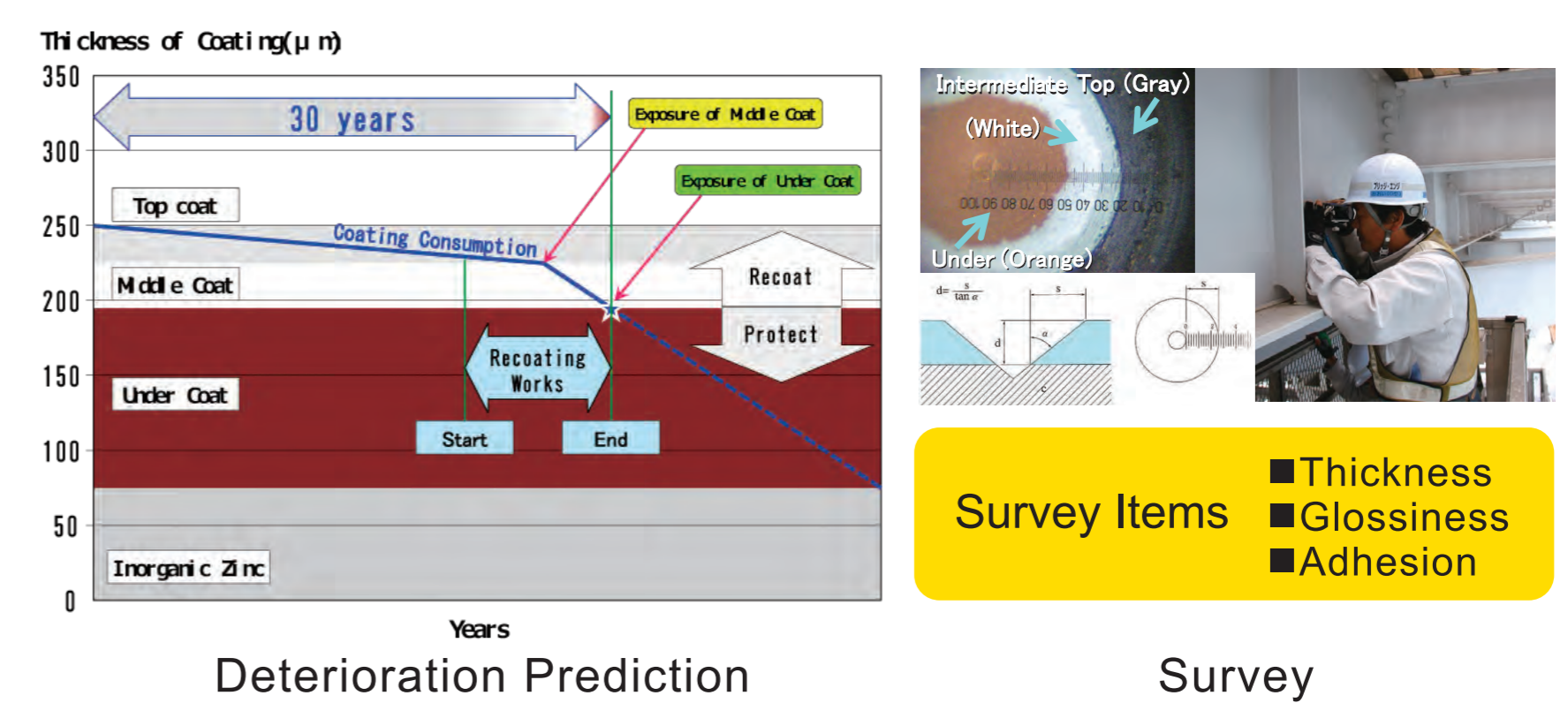
Application of Main Flux Method



Infill Method

#### ■ Rust Prevention Technology I - Optimum Recoating of Steel Structure -

Only deteriorated top and intermediate coats are recoated, while inorganic zinc-rich paint is kept in a sound state. Highly durable fluorine resin paint that has higher durability than existing top coat was developed and has been utilized for current recoating. An optimum recoating timing is determined based on the deterioration prediction derived from periodical tracking of the coating condition.

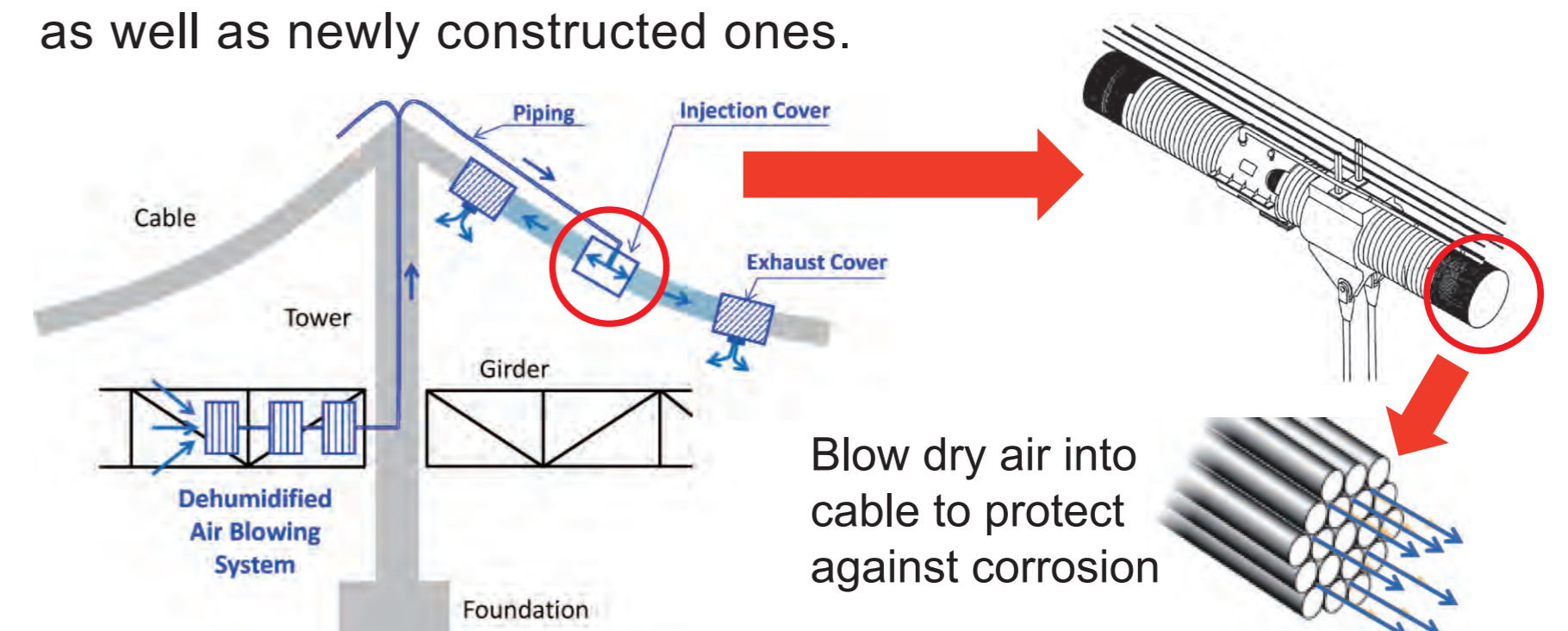


Deterioration Prediction

Survey

#### ■ Rust Prevention Technology III - Preventing Corrosion of Main Cable -

A dry air injection system was developed to prevent corrosion of main cables by supplying dry air into the sealed cables. Good results have been shown for existing suspension bridges as well as newly constructed ones.



Main Cable



Injection Cover

#### ■ Rust Prevention Technology II - Protecting Undersea Steel Structure -

Most of the undersea foundations were constructed by a laying-down caisson method using steel caissons. It is advantageous to protect them from corrosion in order to keep the foundations in sound condition for more than 200 years. An optimum countermeasure from among electro deposit method, cathodic protection method and its combined method is selected and applied according to its corrosive environment.

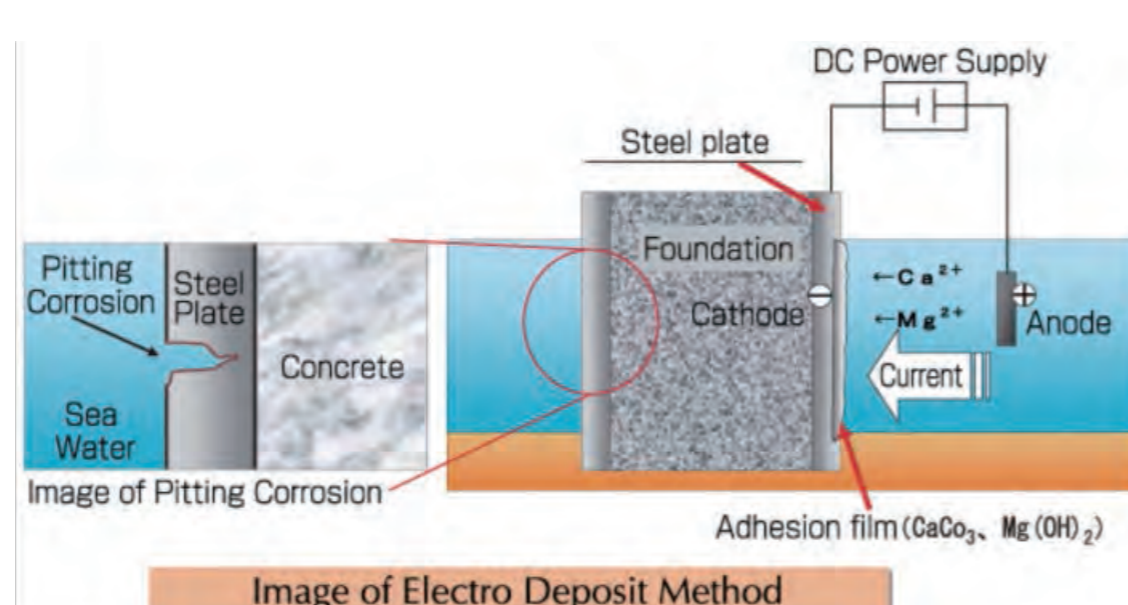


Image of Electro Deposit Method