

Development of a Strength Evaluation Method for Concrete Signal Poles

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Concrete signal poles, some of which exceed to over 50 years old now, face difficulty for renewal due to increasing aged poles. To solve it, we developed an inspection and evaluation method for concrete signal poles depending on strength estimation of poles. We investigated deteriorations on 303 poles at inland, coastal areas along northern Sea of Japan, and other coastal areas. We confirmed that percentage of deteriorations on poles related steel bars rust and break of bars at the northern coastal area is higher than other areas. We also confirmed that chloride ions concentration inside concrete poles at that area is higher than the concentration limit for rusting. Moreover, we confirmed that strength of poles including broken bars or thin bars is lower than healthy poles by strength test. With those results of investigations and tests, we developed an evaluation method of pole's strength by width and type of deterioration checked by visual inspection work.