

## Long Term Outdoor Exposure Slabs with Various Rebar Coatings Fabricated in 1982

Portland Cement Concrete, w/cm = 0.50 with 1-inch (25 mm) of Concrete Cover. 2' x 1' x 6" slabs with 2 Reinforcing Mats. 17 Slabs, 3 per Variable except only Two **Stainless Clad Rebar Specimens**. Other Variables included: **Uncoated Rebar, Both Mats; Galvanized Rebar – top mat only and both mats; and Epoxy Coated Rebar – top mat only and both mats.**

All Specimens were Exposed to 3.1 Years of Daily Ponding with a 3% NaCl Solution. By 1985, Large Quantities of Chloride were present around all Top Rebar (> 10 pcy) and the Salting was Halted. Since that time, the Remaining Specimens Have Been Exposed to Natural Weathering Only.

Average Times to Corrosion-Induced Concrete Cracking (hairline in all instances) for the Various Variables are given below:

Uncoated Rebar, Both Mats	= 1.3 Years
Galvanized Rebar, Top Mat Only	= 3.0 Years
Galvanized Rebar, Both Mats	= 3.4 Years
Epoxy Coated Rebar, Top Mat Only	= 8.9 Years
Epoxy Coated Rebar, Both Mats	= 8.9 Years
Stainless Clad Rebar, Both Mats	> 16 Years

Stainless Clad Rebar Specimen #19 has been Transported to the Conference for Examination. After more than 15 Years in Heavily Salt-Contaminated Concrete, the Rebar is Passive and the Mat-to-Mat Macrocell Corrosion Current is Nil. Slab #20 at our Outdoor Exposure Facility in Virginia has Performed Similarly.

*Kenneth D. Clear 12-3-98*

TMB

Stainless  
Clad

Outdoor  
Exposure  
Slab-19

11' x 2' Concrete Slab

MACROCELL Current 0.00

-26	-25	41	-39	-40
-39	-40	-43	-52	-44
-54	-69	-75	-58	-53
-38	-56	-52	-54	-62

12-8-98

Top Rebar mV CSE

KJC