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Corrosion Management System for Atmospherically Exposed Reinforced Concrete Structures

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Document History:

2023-04-19: Revised by AMPP Standards Committee (SC) 12, “Concrete Infrastructure”

2017-05-02: Reaffirmed by NACE Specific Technology Group (STG) 01, “Reinforced Concrete”

2012-06-23: Developed by NACE STG 01, “Reinforced Concrete”

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Foreword

This AMPP standard practice provides a structure for setting up and maintaining a Corrosion Management System (the System) for existing atmospherically exposed reinforced concrete structures. This standard is concerned with the risk-based management of corrosion to maintain the safe operation of structures and to minimize the risk of unexpected failures and unplanned closures and outages. The Standard applies to any reinforced concrete structure that is atmospherically exposed including: parking structures, bridges, residential or commercial buildings, and any structures at risk of corrosion development.

The System may require investigation and evaluation by qualified corrosion, materials, and structural engineering personnel, depending on the nature and extent of the distress. Regardless of the credentials of the primary inspection staff, the person conducting the initial inspection must be able to recognize when an in-depth corrosion condition assessment is necessary.

This standard is intended for use by corrosion specialists, civil engineers, structural engineers, and asset owners involved with the maintenance, management, and operation of reinforced concrete structures susceptible to corrosion-induced deterioration.

Scope

This standard is limited to corrosion management systems for atmospherically exposed concrete structures. This standard applies to both conventionally reinforced concrete and prestressed or post-tensioned concrete structures.

Rationale

This standard is being revised to comply with AMPP's five year review cycle.

In AMPP standards, the terms *shall* and *must* are used to state requirements and are considered mandatory. The term *should* is used to state something that is recommended, but is not considered mandatory. The term *may* is used to state something considered optional.

Referenced Standards and Other Consensus Documents

AMPP/NACE/SSPC, www.ampp.org:	
NACE SP0216	Sacrificial Cathodic Protection of Reinforcing Steel in Atmospherically Exposed Concrete Structures
NACE SP0290	Impressed Current Cathodic Protection of Steel in Atmospherically Exposed Concrete Structures
NACE SP0308	Inspection Methods for Corrosion Evaluation of Conventionally Reinforced Concrete Structures
NACE SP0390	Maintenance and Rehabilitation Considerations for Corrosion Control of Atmospherically Exposed Existing Steel-Reinforced Concrete Structures
NACE/ASTM G193	Standard Terminology and Acronyms Relating to Corrosion
ASTM International, www.astm.org:	
ASTM C876	Standard Test Method for Half Cell Potentials of Uncoated Reinforcing Steel in Concrete
American Concrete Institute (ACI), www.concrete.org:	
ACI 365.1R	Service-Life Prediction