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Corrosion Evaluations of Masonry Clad Steel Frame Buildings (Pre-1950)

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ABSTRACT

When distress of a structure is evident, it is important to determine the nature of the degradation to select the best restoration strategy. This standard practice provides testing procedures and investigative techniques for the evaluation of masonry-clad steel frame buildings. The investigation and evaluation techniques described in this standard focus on degradation resulting from corrosion of the steel frame.

This standard provides the investigator, corrosion specialist, engineer, or owner a framework for evaluating the corrosion condition of a steel frame building beyond simple visual inspection and basic sounding techniques. Evaluation techniques that identify general and localized corrosion of masonry-clad steel frame buildings are provided.

This standard is intended for use by corrosion specialists, historic architects, structural engineers, and exterior building envelope consultants involved with evaluating corrosion of steel frame buildings and the subsequent effect on the masonry cladding. It also may be useful to owners of historic buildings whose service life may be affected by steel frame corrosion.

KEYWORDS

Historic building, masonry, steel frame corrosion, inspection, survey, TG 460

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Foreword

This NACE International standard practice provides testing procedures and investigative techniques for the evaluation of masonry clad steel frame buildings. The investigation and evaluation techniques described in this standard focus on degradation resulting from corrosion of the steel frame. When distress of a structure is evident, it is important to determine the nature of the degradation to select the best restoration strategy. Although this standard does not specifically address restoration options, additional information on repairs and corrosion mitigation techniques can be found in other NACE International and industry wide standard practices, test methods, and state-of-the-art reports, and other publications.[1-19]

This standard is intended for use by corrosion specialists, historic architects, structural engineers, and exterior building envelope consultants involved with evaluating corrosion of steel frame buildings and the subsequent affect to the masonry cladding. It also may be useful to owners of historic buildings whose service life may be affected by steel frame corrosion.

Note: The term structural engineer used throughout this document refers to a nationally or locally licensed/certificated design professional qualified and experienced in structural engineering

NACE Task Group (TG) 460, "Testing and Evaluation of Corrosion on Steel-Framed Buildings" prepared this standard. The TG is composed of users, consulting engineers, manufacturers, and other interested parties, and this standard represents a consensus of those members. This standard is not intended to be all encompassing. However, it provides information that allows the user to perform testing and evaluation of masonry clad steel frame buildings that are believed damaged from corrosion of the structural steel frame or ancillary steel. The buildings subject to this evaluation methodology were constructed between the 1880s and the 1940s. Note that the information gathered during this investigation may require subsequent investigation and evaluation by a qualified structural engineering personnel or equivalent locally or national licensed professional, or architect depending on the nature and extent of degradation.

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In NACE standards, the terms ***shall, must, should,*** and ***may*** are used in accordance with the definitions of these terms in the NACE Publications Style Manual. The terms ***shall*** and ***must*** are used to state a requirement, and are considered mandatory. The term ***should*** is used to state something good and is recommended, but is not considered mandatory. The term ***may*** is used to state something considered optional.

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