

TO:
SUPERSEDED BY EB 98-014
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ENGINEERING INSTRUCTION

NEW YORK STATE DEPARTMENT OF TRANSPORTATION

SUBJECT: DESIGN CRITERIA FOR BRIDGES
USE OF UNPAINTED WEATHERING STEEL

Subject Code: 7.35-12

Distribution: Main Office Regions Special

Code: EI80-21

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APPROVED: *E. J. Harrigan*

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I RATIONALE

The increased cost of maintenance painting of bridges, and the traffic and environmental hazards associated with bridge painting, support the use of unpainted weathering steel for bridge superstructures wherever possible.

Unpainted weathering steel is protected from corrosion by the development of a tightly adhering protective oxide coating which acts as a barrier to moisture, oxygen and atmospheric contaminants. The coating is produced by exposure to appropriate atmospheric conditions. The coating or weathering process is a gradual one. Steel exposed to moderate industrial and marine environments, as well as frequent wet/dry cycles, will weather more rapidly than that found in arid locations.

II WARRANTS

Unpainted weathering steel should be specified for all bridges except those where:

- Staining which may occur during the establishment of the oxide cannot be controlled and is judged to be aesthetically unacceptable.
- The steel is buried, continually wet, submerged or exposed to severely concentrated industrial fumes or severe marine conditions where salt can be deposited on the steel by either spray or fog. (Under these conditions, the protective oxide coating cannot develop and corrosion will continue indefinitely.)

Bridges conforming to these warrants will be noted as remaining unpainted on the preliminary plan circulated for review. Should there be a need to paint any bridge for aesthetic or other reasons, the Regional Office shall so indicate when reviewing the preliminary plan. The decision to paint and the color to use should be included in the comments from the Regional Office on the preliminary plan.

III DETAILS

When unpainted weathering steel is used, the following requirements shall be met:

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- A. Contract Plans shall include details of construction methods, materials and/or practices necessary to prevent or remove substructure staining considered to be objectionable. More elaborate measures are justified when the substructure is exposed to the view of a great number of people.
- B. Drip bars shall be used at the low end of all stringers. Place drip bars 6-feet from the centerline of piers and abutments.
- C. Only details which will not pocket debris or water shall be employed.

RNK:DR