

August 12, 2014

Jennifer M.V. Fitch, P.E.
Project Manager
Vermont Agency of Transportation
1 National Life Drive
Montpelier, VT 05633

Project Name: Brookfield BRF FLBR(2)
Structure Identification: VT 65 Bridge #2 over Sunset Lake

RE: Item 900.645, "Special Provision (Fiber Reinforced Polymer pontoons)"
NCR 7 – Pontoon 3 Hull Defects

Ms. Fitch –

T. Y. Lin International has reviewed Project Nonconformance Report (NCR) 7 and is summarizing our observations, opinions, and recommendations on the issues herein. From reading the report prepared by Kenway Corporation dated August 12 and a daily field report prepared by Joel Silk of Golder dated August 11, it appears there are multiple defects present throughout the pontoon hull.

Discussion:

After removing the hull from the mold, multiple defects were observed and documented in an NCR by Kenway as well as a daily field report by Golder (VTrans representative). Defects present in the hull include several broad-area dry spots, region(s) with a lack of fill-out, numerous wrinkles, and what appears to be sporadic air bubbles or dry spots speckled across the outside of the hull. The actual thickness of the infused laminate at the dry spot locations is unknown. All such defects identified in the noted documents are beyond allowable limitations required of the project and defined in Special Provisions Section 73(k).

Kenway has proposed repairing the dry spots and regions with lack of fill-out through the use of localized VARTM processes; other defects are not identified in the NCR and therefore it is assumed that Kenway is seeking approval to leave the defects unchanged. While procedures proposed will resolve the visually observed dry spots, it is unclear how the repairs will perform long-term. Through repetitive vehicular and ice loading conditions, cold joints in the resin may be a source of structural weakness prone to leaking and delamination. Although there is foam within the pontoons as a redundant flotation source, it is undesirable to incorporate into the project pontoons with multiple significant repairs that do not have a history of long term performance in similar conditions.

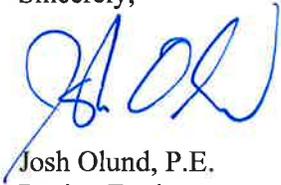
An Affirmative Action / Equal Opportunity Employer M/F/D/V

Recommendations:

Considering the numerous defects present within the hull of Pontoon 3, lack of historic evidence or lab data regarding strength and serviceability of proposed repair procedures, and lack of acknowledgement of other defects present in the pontoon, it is recommended that this Part (3-1) be rejected.

Please feel free to contact me with any additional questions or clarifications.

Sincerely,



Josh Olund, P.E.
Design Engineer

Attachments

cc: Resident Engineer – Sandra Schmitt
 File