NSRP – MCI Alternate Deck Wear Surface Evaluation & Qualification July 16, 2024

Newport News Shipbuilding
A Division of HII

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Milwaukee Composites Inc. (MCI) Alternate Wear Surface Evaluation & Qualification

- Integrated Project Team:
  - Lead – HII-Newport News Shipbuilding:
    - Harold Howard
    - Ify Amene
    - Jolene Garner
    - Madelyn Mendenhall
  - Participants – HII-Ingalls Shipbuilding:
    - James Breakfield
    - Ronald McClellan
  - NAVSEA O5P2
    - David Owen
    - Luis Moreno
  - Program Technical Representative
    - Perry Haymon – HII-Ingalls Shipbuilding

Project Background/ Purpose

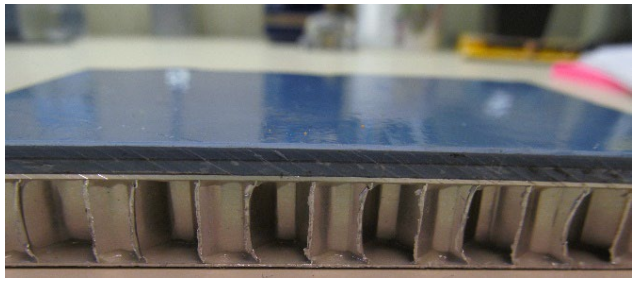
- False decks and raised walking platforms are utilized extensively on all classes of Navy ships. The false decking provides:
  - Personnel access to machinery or systems for maintenance and inspection
  - Walking platform over through services routed above the true deck

- Traditionally, Combat Systems spaces utilize false decks with Electric Grade Sheet (EGS) deck coverings to meet dielectric requirements in accordance with ship specifications
  - The EGS most often used is Lonmat

Background/ Purpose (Cont.)

- ManTech Project S2723 (False Deck Panel Improvement) successfully implemented two new deck panels:
  - Aluminum Honeycomb core with a Lonmat wear surface
  - Phenolic Infused Balsa Wood core with a Lonmat wear surface

- Note, both new panels utilize a Lonmat wear surface, as no new wear surface material was identified in the above ManTech project
  - Multiple new wear surfaces were tested with none passing the requirements for shipboard use



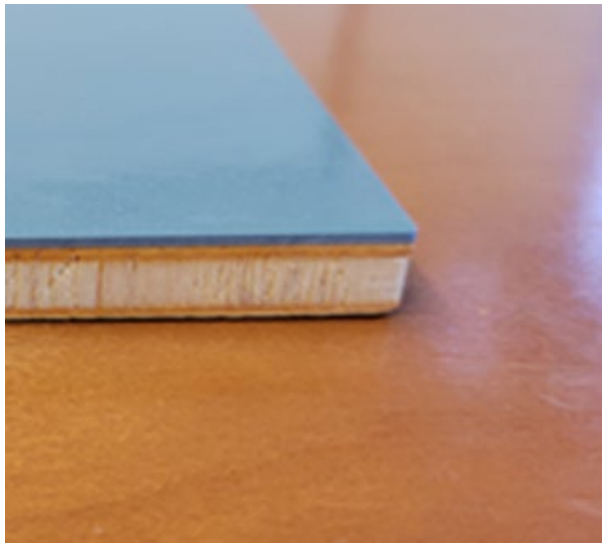
Aluminum Honeycomb Core with Lonmat Wear Surface

Phenolic Infused Balsa Wood Core with Lonmat Wear Surface

Background/ Purpose (Cont.)

- Lonmat is used on Navy Platform today because it meets the dielectric requirements of MIL-DTL-15562, however, deck panel suppliers have experienced the following issues with Lonmat:
  - Procurement cost increases
  - Color/gloss inconsistencies
  - Growing lead-times
  - Material weight = 1.0 lbs./sq. ft.

- This project is evaluating the new MCI wear surface as an alternative to Lonmat pursuing the following advantages:
  - Reduce cost
  - Eliminate color/gloss inconsistencies
  - Improve material availability
  - Reduce overall weight of raised deck panels



Phenolic Infused Balsa Wood Core with New MCI Wear Surface

Project Status

- Current Status:
  - The IPT has engaged NAVSEA O5P2 (TWH Materials - Non-Metallic - Ships) to determine the Objective Quality Evidence necessary to approve the new MCI wear surface for shipboard use
  - The IPT is currently working with NAVSEA O5P5 (TWH – Fire Protection Systems - Ships) to define the Fire/Smoke/Toxicity (FST) testing necessary to meet safety concerns for shipboard approval
  - MCI continues to develop test coupons to support testing requirements of MIL-PRF-32664 (False Deck Panels, Composites) and FST
  - HII-Newport News Shipbuilding and HII-Ingalls Shipbuilding are working to determine if there are any concerns with modifying the new panels utilizing standard shipyard tools and practices.
  - Both shipyards will perform a small scale demo to fully evaluate the new material in industrial environments and during shipboard operations

- Project Tasks:
  - Fabricate test articles and perform material testing IAW MIL-PRF-32664, and document results
  - Perform a small scale demo to evaluate the material under foot-traffic and panel modification
  - Collaborate with NAVSEA stakeholders to address all concerns necessary to gain Navy Shipboard approval

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Discussion / Questions

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