CNST Awards Lightweight Outfitting Improvement Project in Support of DDG-1000 Program

The Center for Naval Shipbuilding Technology (CNST) – through its partnership with the Office of Naval Research and Navy ManTech – recently awarded a $678K project to a Bath Iron Works/Northrop Grumman Ship Systems team to identify, validate and qualify alternate methods for mounting lightweight items onboard ZUMWALT-Class destroyers, also known as the DDG-1000 class.

There are dozens of unique items weighing less than 40 pounds that are installed as outfit aboard US Navy vessels. There are more than 20,000 of these items per ship, and include bulletin boards, coat hooks, mirrors, electrical receptacles, etc. Conventional installation methods involve welding, bolting, and riveting; a labor-intensive and time-consuming process. However, commercially available products such as 3M Very High Bond tape show promise to reduce cycle time for installation of lightweight outfitting items via alternate mounting methods. This project will determine the most suitable commercially available bonding materials and assess these materials using a NAVSEA-approved test plan.

This manufacturing technology issue, if resolved, has the potential to reduce outfitting time by 20-50% for those approved items, resulting in cost avoidance on the order of $1.5M to $3M per ship. However, the potential for cost savings is not only dependent on the adhesive technology, but also upon approval by the appropriate Navy Technical Authority/Technical Codes. As such, testing and qualification activities will follow a phased approach whereby the “easier” items to mount will be investigated first.

Findings from this project should benefit construction activities at other major shipyards, as improvements to this methodology are not limited to destroyers, but are applicable to aircraft carriers and other surface combatants as well.

Example of Very High Bond tape applications.

About CNST

CNST is a Navy ManTech Center of Excellence, chartered by the Office of Naval Research (ONR) to identify, develop and deploy, in U.S. shipyards, advanced manufacturing technologies that will reduce the cost and time to build and repair Navy ships. For additional information on this and other CNST projects, please visit www.cnst.us.