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MARINE MAINTENANCE TECHNOLOGY INTERNATIONAL

SHOWCASE 2012

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Exclusive look at: Harland and Wolff’s ship repair business

Off-shore maintenance Extending the life of the North Sea’s oil and gas platforms

Keeping the Royal Navy’s nuclear submarine fleet in service

Military maintenance The US Navy’s Nimitz-class aircraft carrier overhaul
The latest coating systems have proved that they are up to the task of providing 15- to 20-year service life, but reports show that some coating failures still occur within six to 18 months. Investigations have found that the culprit for these failures is often inadequate surface preparation.

Recent studies on high-solid coating failures point the finger of blame at high-pressure water-blasting and secondary repairs using power tools. One way to eradicate this problem is to rethink the specifications for the preparation of coatings. Experts understand that for shipyard recoating projects, it doesn’t make sense to specify anything less than new-build-quality cleanliness and roughness.

Current high-solid, plural-component coatings tend to be a bit more rigid and perform best when mated with a clean surface and a sharp angular profile, such as those delivered by garnet, aluminum oxide, and other high-quality angular abrasives.

A recent US study, conducted at Portsmouth Naval Shipyard, stated, “High-solid tank coatings are very unforgiving of anything less than SSPC-SP-10/NACE 2/ISO 2.5 surface preparation. Assume that if you do not blast, the paint will fall off.”

False economies
However, at some shipyard and marine repair facilities, old habits, perceptions, and shortcuts prevail. Rather than investing time and money in abrasive blasting, decisions are made by vessel owners to attack old coatings with high-pressure water-blast and mechanical power tools. One way to eradicate this problem is to rethink the specifications for the preparation of coatings. Experts understand that for shipyard recoating projects, it doesn’t make sense to specify anything less than new-build-quality cleanliness and roughness.

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Sponge blasting
The US Navy has evaluated encapsulated sponge blasting and concluded that it provides significant cost and technical advantages over power tooling. Sponge blasting uses abrasives, including aluminum oxide, encapsulated within small bits of industrial-grade sponge to provide the cleaning and cutting power of conventional abrasives while offering a dry, low-dust, low-rebound blast. The US Navy and many in the commercial shipping industry have already embraced this technology.

In tests conducted by the Australian Navy, it was found that the use of sponge blasting saved US$120,000 per vessel, as well as extending the service life of coatings.

Most oil tankers, cruise liners, ferries, and tugs make money only while in service, not in dry dock, and cashflow keeps the commercial shipping industry afloat. Money sensibly spent on battling corrosion can yield great dividends; however, money spent on coatings that fail prematurely is money squandered.

For more information, visit: www.spongejet.com

Prep for long life
Commercial shipping fleets are working toward longer coating service lives by tailoring prep for high-solid, plural-component systems

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