



Evaluation conducted by for sale to the US Navy:
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As a vendor under contract to provide damage control services, technical support, and products and product development to the Naval Sea System Command (NAVSEA), The Supervisor of Ship Building (SOS), The Naval Supply Command (NAVSUP) and Surface Warfare Officer School Engineering Training Site (SWOS- ETS). The Slate River Corporation tested and evaluated the rapid clamp for sale to the US Navy.

At the conclusion of our testing at both Naval facilities and our own. We highly recommended to NAVSEA to purchase the rapid clamp to replace the fleets current jubilee patch. NAVSEA reviewed our evaluation and conducted it's own assessment. NAVSEA concluded the rapid clamp would be significant improvement in capabilities over the bolt on jubilee patches for US Navy ships.

Based on positive feed-back from an initial issue of 50 kits to fleet units including two CVN's. NAVSEA has proceeded with fleet wide issue to all surface ship.

General Assessments:

Installation time test of rapid pipe repair clamp:

- Conducted at standard operating pressure (125 to 150 PSI) utilizing city fresh fire water for clamps adjustable to under 9 inches,
- Conducted at standard operating pressure (80 to 100 PSI) utilizing city fresh fire water for clamps over 9 inches,
- On smooth surface damaged steel pipe with 2-inch crack,
- On smooth surface damaged PVC pipe with 3-inch crack,
- Clamp adjusted until near zero leakage,
- Without gloves.

Installation Times				
Size	1-lever	2-levers	3-levers	4-levers
1.5" - 3"	Under one minute	Under one minute	Under one minute	Under 3 minutes
2" - 3"	Under one minute	Under one minute	Under one minute	Under 3 minutes
3" - 4"	Under one minute	Under one minute	Under ninety seconds	Under 3 minutes
4" - 9"	Under ninety seconds	Under ninety seconds	Under two minutes	Under 3 minutes
9" - 12"	Under 3 minutes	Under 3 minutes	Under 3 minutes	Under 3 minutes

The rapid pipe repair clamp proved superior for 5 specific reasons:

1. The tool-less lever securing system has proven faster to install compared to the bolt on models currently in service. The smallest (2 inch) 2 bolt repair clamp in service takes 4 minutes install to achieve the small seal.
2. The multi seal surface provided greater sealing ability requiring less pressure and sealing larger cracks.
3. The Nitrile gasket works on JP5 and lube oil lines. The gaskets on the clamps currently in service will.
4. Because standard pipe clamps generally only fit one size pipe. Fewer clamps were required because of the size range of the rapid clamp.
5. Because of the ease of installation training time for this type of pipe repair has been significantly reduced. Allowing more hands-on practice in a shorter period of time.

Section of US Navy's Purchasing Justification after field testing:

“VPG clamps are currently recognized as the standard for rapid pipe patching by United States Naval Forces damage control casualty response teams because it provides superior sealing capabilities against all fluids from a piping rupture resulting from an explosive blast, over pressurization, fragmentation, collision, impact and heat.

b. VPG clamps are a patented design and are currently the most ergonomically designed patch with simple cam locking action for single person application. This specifically designed variable size clamp allows for application without any tools required and is the only clamp that currently does so.

c. VPG clamps are a patented design and are currently recognized as the standard for rapid pipe patching by United States Naval Forces damage control casualty response teams because it provides the world's first Nitrile lip seal providing far superior sealing capabilities from the double pocketed seal design making it suitable for all fluids to include petroleum liquids. All other patches provide only flat surface sealing and pose unacceptable potential catastrophic results when used on pressurized petroleum systems.”

Status of outfitting:

500 clamp kits (4 to 8 clamps per kit) have been issued and are being used by surface ships (CVN's, CG's, DDG's, LCS, LSD's, and LPD's. Outfitting will continue through 2020 until all DCRS's are completed.