

Why Use A VCI Fitted Cover? U.S. Army Reserve Test

In 2017, at the request of the United States Army Reserve G-4, a MEP-803A generator and a HMMWV-1097R1 were each protected by a Transshield XT advanced protective cover with vapor corrosion inhibitors (VCI) at an Army Reserve base in Orlando, FL. Paired coupons were employed inside and outside the cover to assess the level of protection provided to the asset. Some stand-alone coupons were also employed.

At the conclusion of the 47-day field trial, U.S. Army Reserve personnel witnessed the removal of the Transshield XT covers. Photographs of the coupons were immediately taken to record the levels of corrosion. Protection provided by the cover is quantified by calculating the area of the coupon not corroded and expressing that as a percent of the total coupon area. Photographs of the covered MEP-803A generator and a covered HMMWV-1097R1 are shown below.



MEP-803A generator protected by an XT cover



HMMWV-1097R1 protected by an XT cover

Typical paired coupon post trial results highlight the dramatic corrosion prevention and the tabulated results for the generator coupons are shown below.



Transshield XT 91.1% Protection



Outside Cover 15.9% Protection

Steel Coupon	INSIDE	OUTSIDE
Designation	Protection%	Protection%
1-Generator IN Box	99.80	
2-IN Front Side	91.05	
3-OUT Front Side		15.93
4-IN Left Side	99.88	
5-OUT Left Side		29.41

MEP-803A Generator protected by an XT cover

In this test, the Transshield XT advanced protective cover provided in excess of 91% protection for all coupons. A logical conclusion is that similar protection is provided to the unpainted metal of the assets.

This means that equipment protected by a Transshield XT advanced protective cover with VCI technology requires

less maintenance and fewer repair parts. The return on investment (ROI) is significant when the cover cost is considered. Life cycle costs are reduced and readiness improves. Specific examples are available upon request.

Independent Approval: In 2013, NAVSEA approved the next generation advanced protective cover with VCI technology developed by Transshield. Made from ArmorDillo® with VCI technology, these second generation covers provided a lighter, more form-fitted cover. Growing demand for covers to protect an array of different assets throughout the fleet confirms the cover's efficacy. Should the cover be damaged, repair kits are available with accompanying procedures that enable soldiers to repair cuts, tears and other mechanical damage.

Bottom Line: Three fundamental components are required to protect assets:

1. Covers must be made from VCI enhanced fabric.
2. Cover design matters; covers must be form-fitting.
3. Covers need to be installed correctly and secured properly to protect equipment.

References

[1] Sharman, D. J. Washburn, M., Ozol, S., The Wide-Ranging Benefits of Corrosion Inhibitors, The Society for Protective Coatings (SSPC) Department of Defense Allied Nations Technical Corrosion Conference, August 2017