



AFCPCO NEWS

US Air Force Corrosion Prevention and Control Office Newsletter

June 2024

2024 Corrosion Technical Interchange Meeting Colorado Springs, CO

MSgt Jeremy Horstman and Jarquees Williams

AFCPCO would like to extend our deepest gratitude to all military personnel, civilian and contractor experts, and dedicated vendors who participated in and contributed to the success of the 2024 USAF Corrosion and Non-Chrome Technical Interchange Meeting held in the beautiful (and cold!) Colorado Springs, CO. Your contributions fostered insightful discussions and understanding of corrosion and hazardous materials-related challenges and solutions. A special thank you to the USAF Corrosion Control and Prevention Executive, Ms. Kristen Baldwin (SES, SAF/AQR), for delivering a powerful keynote address and the Deputy Corrosion Control and Prevention Executive, Latricia Fitzgerald, Ph.D., for the support.

During the CTIM, TSgt Ryan Gladu was awarded the first ever Air Force Corrosion Manager of the Year Award, a testament to his exceptional leadership and dedication to excellence. He has spearheaded transformative initiatives that have significantly enhanced the effectiveness and efficiency of the corrosion control enterprise worldwide. Ryan's relentless pursuit of excellence and unwavering dedication to mission success earned him well-deserved recognition as the Air Force Corrosion Manager of the Year. Congratulations, TSgt Gladu!

Once again, thank you to all attendees and contributors of the AFCPCO CTIM! Hope to see you all again next year!



TSgt Gladu (on the left) receiving the CMOY Award from Ms. Kristen Baldwin (on the right).



Audience during Dr. Jarquees Williams' closing remarks at the CTIM.

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ATTC Highlight

Scott Pagenkopf

The Advanced Technology and Training Center – Middle Georgia (ATTC-MG) is the US Air Force facility charged with testing and transitioning new technologies throughout the USAF. Managed by the University of Dayton Research Institute (UDRI), the ATTC-MG is working to bring new technologies to the Air Force. The facility conducts testing for metal and polymer 3D printing, as well as testing cold spray technologies. Additionally, the facility also performs corrosion control related work. The Applied Corrosion Technologies (ACT) section of UDRI has a large amount of equipment to test corrosion control related materials, processes, and procedures. This can also include testing new equipment and its use to ensure the equipment is safe to use on USAF aircraft and support equipment. The facility has a multitude of capabilities that allow coating material application and testing.

The ACT section has a full testing lab that is capable of performing basic to advanced coating material testing, including impact, adhesion, conical bend, and much more. The lab has a large fabrication area where specimens can be cut and manufactured. The ACT lab has manual and power shears, drill presses, a cornice brake, sanders, and saws and has the capability to install everything from bolts to rivets to meet all testing needs.

The ACT lab's most important, and highly utilized piece of equipment is the large paint booth that is part of our coating application complex within the facility. The booth is very large: 15' wide X 23' deep and 15' high. The paint booth is temperature and humidity controlled. The coating application complex includes a paint mixing kitchen, which contains a Dedoes mixing machine that stores and mixes paints. The paint booth also has a heated cure mode to accelerate curing. In this booth, powder coating can be applied to parts or specimens, or coatings can be removed by sanding. This booth has also been utilized for dry ice blasting testing and will be also utilized for other types of media blasting. The last part of the coating application complex is a large process oven. With this oven, powder coats can be cured at various temperatures.

For UV aging and testing, the lab has four UV testers and three xenon arc chambers. These are able to simulate the affects of UV on coatings utilizing different lamps and filter lenses.

For corrosion testing, the lab has 6 salt fog chambers that are utilized to run corrosion resistance testing. The lab has two types of salt fog chambers. One has the ability to run the majority of tests, such as ASTM B117. The other chambers allow more complex salt recipes and have the ability to ramp temperatures up and down faster to simulate different corrosive environments. The lab has two humidity chambers which can expose test specimens to 0-degrees Celsius with zero percent humidity to 200-degrees Celsius at 100% humidity.

The lab has two engineered blast media (EMB) cabinet blasters for testing and qualification of engineered (or plastic) blast media. The lab is also testing a new paint removal process that is environmentally friendly. This process utilizes an environmentally friendly electrolyte that softens the coatings, and then employs ultrasonics to remove the coatings.

One of the most exciting technologies that the lab is testing is anodic electrodeposition, or e-coat. E-coat is an environmentally friendly primer that is hexavalent chromium free. Anodic e-coat is an aerospace primer for aluminum that does not contain hex-chrome.

The ACT lab has a large amount of analytical testing equipment, including a Fourier-transform infrared spectroscopy, or FTIR, equipped with a Raman module. One of the lab's newest instruments is an inductively coupled plasma mass spectrometry instrument, or ICP-MS. The lab also has a variety of optical microscopy 3D microscopes and a scanning electron microscope (SEM). These are just a few of the instruments that show the capabilities of the ATTC-MG.

The ATTC-MG has the capabilities to conduct all sorts of corrosion control related testing. With a large amount of testing equipment and the ability to apply virtually any coating material, the ATTC-MG is here to assist the USAF in finding better coatings, equipment and corrosion control processes that are necessary to prevent and treat corrosion.

ASCCWG Meeting- February 2024

Kaitlin Williams

February 21st and 22nd in Huntsville, AL, the AFCPCO, along with corrosion SME's across the DoD, met to kick off Aerospace Systems Corrosion Control Working Group (ASCCWG) annual in person meetings after being suspended during the COVID-19 pandemic.

The purpose of the ASCCWG is to establish inter-service communications pertaining to corrosion control issues and efforts and to facilitate discussions on these matters, in order to develop more efficient and relevant corrosion control and prevention solutions for the Warfighter.

Briefings covered topics such as current ESI efforts across the DoD, corrosion dashboards and metrics, and current coating technology investigations. For more information regarding ASCCWG or if interested in participating in upcoming ASCCWG conferences, please contact AFCPCO at afcorr@us.af.mil.



E-coat Pilot Line

Facility Design Review

Jeff Grenfell and Rob Madsen

In December 2012, the implementation of the revised Unified Facilities Criteria (UFC) 4-211-02 drove a whole new set of requirements to our Corrosion Control Facilities (CCF). What was the focus of this change? Glad you asked! Blasting, priming, and painting operations are an extremely dirty processes due to the hexavalent chromium, and isocyanates contained within our epoxy primers and polyurethane topcoats. The UFC mandated that we must have a transition process to help removes these contaminants from one's self prior to exiting the contaminated areas. A quick way to correlate this would be what you experience during chemical warfare training and how you process through the decontamination area. Essentially you are trying to leave the contaminated (hot) area and get to a clean (cold) area. Even after 12 years of having this updated UFC, many of the CCFs in the Air Force still do not meet compliance. To date, the AFCPCO has only seen one location with a fully complaint CCF used for AGE and aircraft parts, never mind an aircraft-sized hangar. Please visit, download and get to know the UFC at <http://www.wbdg.org/ffc/dod/unified-facilities-criteria-ufc/ufc-4-211-02>.

But why are we referring you to this link if you do not have a proper CCF? This is because it's imperative you arm yourself with the facility requirement knowledge contained within to effectively brief your leadership who will advocate for funding. Additionally, after reading the UFC, should you not already have risk assessment codes (RAC) assigned to any deficiencies within your CCF (see Figure 2-5, UFC 4-211-02), you should work with your local Bioenvironmental Engineering Flight and the Wing Safety Office to establish them. This will help create leverage so you can get the ball rolling for future renovations. This process may not move at a fast pace, but keep being that squeaky wheel and soon you will get some grease!

When that time comes for your facility to be renovated, remodeled, or updated, everything must be brought up to code utilizing the UFC. The Department of the Air Force just released its new corrosion prevention and control strategic plan where the AFCPCO must be involved in your process; specifically Priority 6 of said plan. To assist with this process, we have been diligently developing relationships with AF Civil Engineering Center (AFCEC) and Air Force Installation and Mission Support Center (AFIMSC) to have CCF specific verbiage added into their AFIs and UFCs directing engagement with AFCPCO. The AFCPCO's responsibilities will be to review and advise all personnel, including the end user, during the planning and design processes. Please keep in mind you are still the end user and must remain involved during the entire process; from the initial DD Form 1391 submittal up until the final acceptance of the completed facility.

I'm sure you have a final question here wondering why the AFCPCO needs to be involved? This is because what happens more often than not, the AFCPCO hears about a CCF renovation that is about to break ground. We request to see drawings, so we can leverage our extensive knowledge on CCF builds, and, after a cursory review, the designs still do not meet the requirements within UFC 4-211-02. This will, once again, drive the establishment of new RACs once the facility is completed. This is commonly attributed to a general lack of knowledge, which we cannot expect all wing corrosion managers (WCM) to have, but there is also a lack of continuity due to the changing of WCMs and no living document to pass along to the next in line. Another commonly seen issue is that ever-expanding costs allow a contractor to cut requirements in order to meet the cost constraints. Once again, it yields a facility that will not meet the UFC requirements. If you are currently going through design reviews, or are close to breaking ground, engage AFCPCO immediately at afcorr@us.af.mil to help guide your project away from these common pitfalls.

Upcoming Events

ASETSDefense 2024 Workshop

Aug. 13th—15th, 2024
San Diego, CA

AMPP Eastern Conference

Oct. 14th—16th, 2024
Grand Rapids, MI

F-35 CPAB

Oct. 23rd—27th, 2024
Las Vegas, NV

DOD Maintenance Symposium

Dec. 10th—13th, 2024
Salt Lake City, UT

Contact Us

Send us an email with any questions, concerns, or suggestions.

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