FORT CAVAZOS
AEROSPACE COMPLIANCE TRAINING

National Emissions Standards for Hazardous Air Pollutants (NESHAP)

Ayuda Auxilio Joint Venture

ARCADIS Design & Consultancy for natural and built assets

Welcome to the Fort Cavazos Directorate of Public Works

Aerospace NESHAP Compliance Training

The following slides are designed to assist Fort Cavazos personnel with maintaining compliance with select federal regulations related to activities associated with the aerospace industry.

The procedures are based on 40 CFR 63, Subpart GG.

PLEASE

Eliminate Distractions

Ask Questions

"raise your hand"

Be Patient

Training Topics

1. NESHAP Regulatory Background
2. How to comply with requirements for:
   - Hand- Wipe Cleaning
   - Cold Solvent Cleaning & Engine Flush Cleaning
   - Waste Handling and Storage
3. Why recordkeeping is critical

NESHAP Regulatory Background

This section covers:

- Definitions/Acronyms
- Exempt Operations
- Composition of Solvents

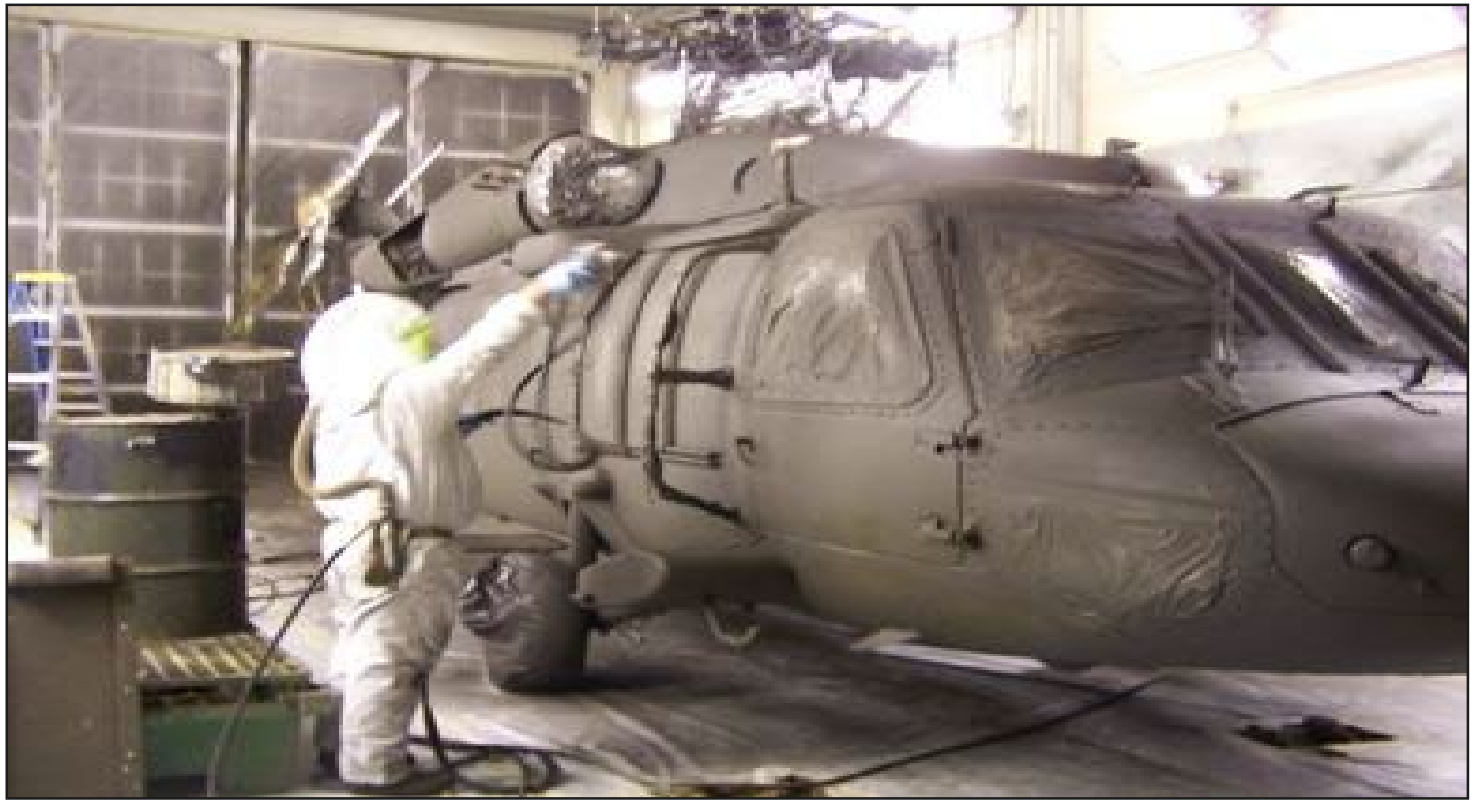
NESHAP Definitions/Acronyms

- CFR – Code of Federal Regulations
- gal - gallons
- HAP - Hazardous Air Pollutant
- NESHAP – National Emission Standards for Hazardous Air Pollutants
- psia – pounds per square inch
- Major Source vs. Area Source of HAPs
  - Major source: > 25 tons per year (tpy) all HAPs combined
    > 5 tpy any individual HAP
  - Area source = not a major source (Fort Hood is Area Source)

Aerospace NESHAP GG (40 CFR 63, Subpart GG)

Primarily located at Fort Cavazos airfields where aerospace equipment is:

- Cleaned
- Repaired
- Painted



Exempt Cleaning Operations §63.477(e)(1)-(13)

- Cleaning during the manufacture, assembly, installation, maintenance, or testing of components of breathing oxygen systems that are exposed to the breathing oxygen;

- Cleaning during the manufacture, assembly, installation, maintenance, or testing of parts, subassemblies, or assemblies that are exposed to strong oxidizers or reducers (e.g., nitrogen tetroxide, liquid oxygen, or hydrazine);

- Cleaning and surface activation prior to adhesive bonding;

- Cleaning of electronic parts and assemblies containing electronic parts;

- Cleaning of aircraft and ground support equipment fluid systems that are exposed to the fluid, including air-to-air heat exchangers and hydraulic fluid systems;

- Cleaning of fuel cells, fuel tanks, and confined spaces;

- Surface cleaning of solar cells, coated optics, and thermal control surfaces;

- Cleaning during fabrication, assembly, installation, and maintenance of upholstery, curtains, carpet, and other textile materials used in the interior of the aircraft;

- Cleaning of metallic and nonmetallic materials used in honeycomb cores during the manufacture or maintenance of these cores, and cleaning of the completed cores used in the manufacture of aerospace vehicles or components;

- Cleaning of aircraft transparencies, polycarbonate, or glass substrates;

- Cleaning and cleaning solvent usage associated with research and development, quality control, and laboratory testing;

- Cleaning operations, using nonflammable liquids, conducted within five feet of energized electrical systems. Energized electrical systems means any AC or DC electrical circuit on an assembled aircraft once electrical power is connected, including interior passenger and cargo areas, wheel wells and tail sections; and

- Cleaning operations identified as essential uses under the Montreal Protocol for which the Administrator has allocated essential use allowances or exemptions in 40 CFR 82.4.

Focus today is on what you need to comply with, not exempt operations

Composition of Solvents

Hand-Wipe Cleaning Solvents at Fort Cavazos meet these requirements:

- 40 CFR 63, Subpart GG, Table 1
  - Aqueous: >80% of solution is water
  - Hydrocarbon based: Photochemically reactive hydrocarbons and/or oxygenated carbons with a max vapor pressure of 0.14 (7 mmHg) psia at 68 °F
- Composite vapor pressure of 0.87 psia (45 mmHg) at 68 °F
- Demonstrate that volume of hand-wipe solvents reduced by 60% from baseline
- Flush Cleaning Solvents at Fort Hood do not meet the specifications above, so must be disposed of differently

Different compositions of solvents result in different disposal method for Hand-Wipe Cleaning solvents versus Flush Cleaning solvents

Hand-Wipe Cleaning

This section covers:

- Definitions
- Operational Practice and Design Requirements
- Recordkeeping Requirements
- Reporting Requirements

Hand-Wipe Cleaning

Hand-wipe Cleaning - removal of contaminants such as

dirt, grease, oil, and coatings

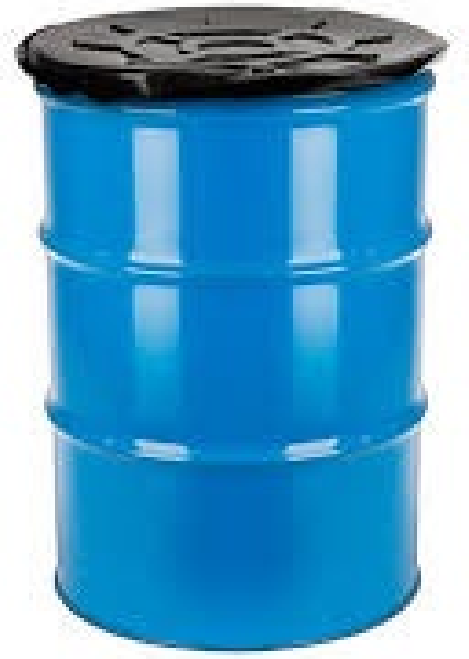
from an

aerospace vehicle or component

by physically rubbing it with a material such as a rag, paper, or cotton swab that has been

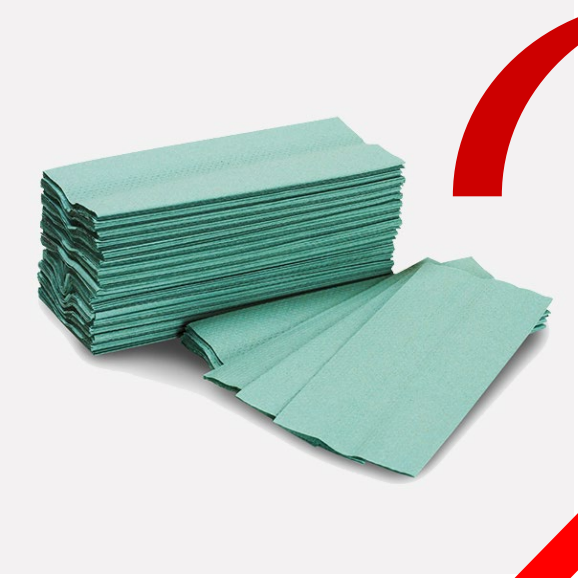
moistened with a cleaning solvent.

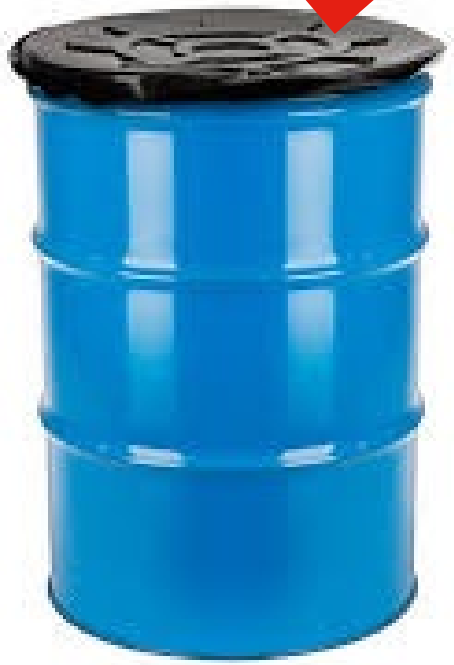
Hand-Wipe Cleaning Operational Practices/ Design Requirements



- Solvent-laden rag, paper towel, cotton ball, etc. MUST be disposed in enclosed containers (drums at Fort Hood)
- Containers must be kept closed **at all times**, except when depositing or removing materials
- Store fresh AND spent solvent in closed containers
- Make every effort to minimize spills with handling or transferring cleaning solvents
- Clean up cleaning solvent spills quickly, disposing of cleanup materials in drums
- Follow technical manual for equipment being worked on ---- Remove any guess work

Infographic of Hand-Wipe Cleaning Operational Practices and Design Requirements



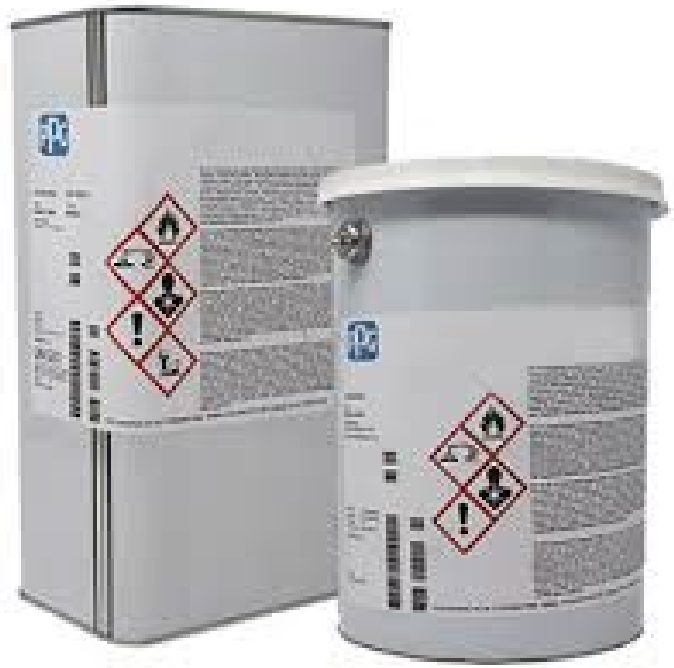


KEEP LID ON

Recordkeeping Requirements

- If cleaning operation fails to meet an Operational Practice or Design Requirement (Foxtrot Uniform), then retain the following records:
  - **Number of failures**
  - **Date, time, duration of failure**
  - **List of affected sources or equipment**
  - **Estimate quantity of solvent used during the failure** (this is used by DPW to estimate each regulated pollutant emitted over the emission limit)
  - Actions taken to minimize emissions and corrective actions taken

- **Record identity and amount (gal) of each cleaning solvent used each month at each building**



Recordkeeping Requirements, continued

For Solvents used in non-exempt operations:

- **Record the name**, vapor pressure, and documentation showing the organic HAP constituents of each cleaning solvent. (SDS) [G]§63.752(b)(1)
- If complying with composition requirements record (Fort Cavazos **not** using this requirement):
  - Name of solvent used
  - Data and calculations demonstrating compliance with the composition requirements
  - Volume of each solvent used annually, as determined from purchase or usage records.[G]§63.752(b)(2)
- If complying with vapor pressure requirement, record **(Fort Cavazos using this requirement)**:
  - **Name of solvent used**
  - Composite vapor pressure of each solvent (SDS)
  - Data and calculations used to determine composite vapor pressure
  - **Volume of each cleaning solvent used on monthly basis**. [G]§63.752(b)(3)
  - How the solvent was used

Image of Hand-Wipe Cleaning Tracking sheet

MONTH: _____ Due by the 5th of the following month

UNIT: _____ POC: _____ PHONE: _____

BUILDING NUMBER: _____

			Required Fields			
Product NSN	Mil Spec/Part #	Product Description	QTY USED	Units	Product Used for (GM, AV, SM, ENG, PR, HYD, GD, EL)	NESHAP Requirement
		CLEANERS/SOLVENTS	Ex: 12	Oz	EL	
6850-01-458-8018	Desoclean 45	Desoclean 45 (MEK substitute)				Cmpl
6810-00-223-2739	ASTM-D-329	Acetone (CSD/Startex)				PNC, Exempt
6810-00-184-4796	O-A-546	Acetone (CSD/Startex)				PNC, Exempt
6850-01-381-3300	Teksol EP	Teksol EP-921 (Inland)				Cmpl
6850-01-399-1640	Teksol EP	Teksol EP-921 Aero (Inland)				Cmpl
6810-00-855-6160	TT-I-735	Isopropyl Alcohol (CSD/Startex)				Cmpl
6810-00-205-6786	OE-760	Denatured Alcohol (Home Oil)				Cmpl
6810-00-201-0907	OE-760	Denatured Alcohol (Pharmco)				PNC, Substitute with Isopropyl
6810-00-201-0907	MIL-A-6091OE 760	Denatured Alcohol (Home Oil)				Cmpl
6810-00-597-3608	OM-232-G	Methanol (AAPER)				PNC

Reporting Requirements

Submit semi-annual report (DPW Responsibility):

- Reports due:
  - May 1st (data from September 1 – February 29)
  - November 1st (data from March 1 – August 31)
- Identify if operations have been in compliance during previous 6-month period
- Include statement that cleaning operations have been in compliance with all applicable standards
- Submit statement of compliance signed by Chief of Environmental Programs certifying that the facility is in compliance with all applicable requirements

Hand-Wipe Cleaning Recap

- Dispose of Hand-Wipe Cleaning materials correctly
- Record any failures to do so (and turn into DPW)
- Record and submit amounts of hand-wipe cleaning solvents used on a **monthly** basis
- Be on the lookout for strange or new solvents being used and notify DPW if something odd shows up

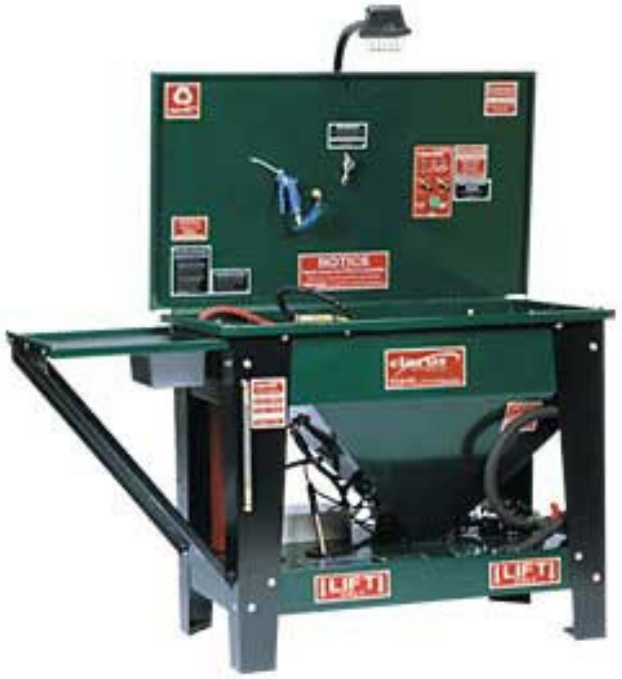
Help DPW help you

Cold Solvent Cleaning, Degreasers, & Engine Flush Cleaning

This section covers:

- Definitions
- Operational Practice and Design Requirements
- Recordkeeping Requirements
- Reporting Requirements

Flush Cleaning Definition



- The removal of contaminants such as **dirt, grease, oil, and coatings** from an **aerospace vehicle or component or coating equipment** by passing **solvent over, into, or through** the item being cleaned.
- The solvent may simply be poured into the item being cleaned and then drained, or be assisted by air or hydraulic pressure, or by pumping.
- Hand-wipe cleaning is not included (where wiping, scrubbing, mopping, or other hand action is used)

Cold Solvent Cleaners, Degreasers, and Engine Flush Cleaning all meet the definition of flush cleaning in Aerospace NESHAP

Flush Cleaning Operational Practices/ Design Requirements

- Empty used cleaning solvent into an enclosed container or collection system each time parts or components are flush cleaned
- Enclosed container or collection system should be kept closed when not in use or put into a system with equivalent emission control. §63.744(d)
- Dispose of used solvent-laden cloth, paper, or any other absorbent applicators used for cleaning in bags or other closed containers (such as drums).
- Ensure these containers are kept **closed at all times** except when depositing or removing materials from the container
- Bags and containers should be designed to contain the vapor of the cleaning solvent
- Store fresh and spent cleaning solvents used in aerospace cleaning operations in closed containers. §63.744(a)(2)
- Minimize spills when handling and transferring cleaning solvents to or from containers and other cleaning operation equipment. §63.744(a)(3)
- Flush cleaning operation is considered in compliance when all flush cleaning solvents requirements of 63.744(d) are implemented and carried out. §63.749(c)

Recordkeeping Requirements

- Record the name, vapor pressure, and documentation showing the organic HAP constituents of each cleaning solvent. [G]§63.752(b)(1)

**Note: DPW does this as each new product is requested or introduced to the process

- Record:
  - Name of solvent used;
  - Data and calculations demonstrating compliance with the composition requirements; and
  - Volume of each solvent used annually, as determined from purchase or usage records. [G]§63.752(b)(2)

Recordkeeping Requirements (continued)

- If a cleaning operation fails to meet an Operational Practice or Design Requirement (a.k.a., **Foxtrot Uniform**), then record:
  - **Number of failures and date, time, and duration of failure**
  - **List of affected sources or equipment**
  - **Amount of cleaning solvent used in the failure**
  - Estimate of the quantity of each regulated pollutant emitted over any emission limit (DPW responsibility)
  - Description of the method used to estimate the emissions (DPW responsibility)
  - **Actions taken to minimize emissions and any corrective actions taken to return the affected unit to its normal operation.** §63.752(a)

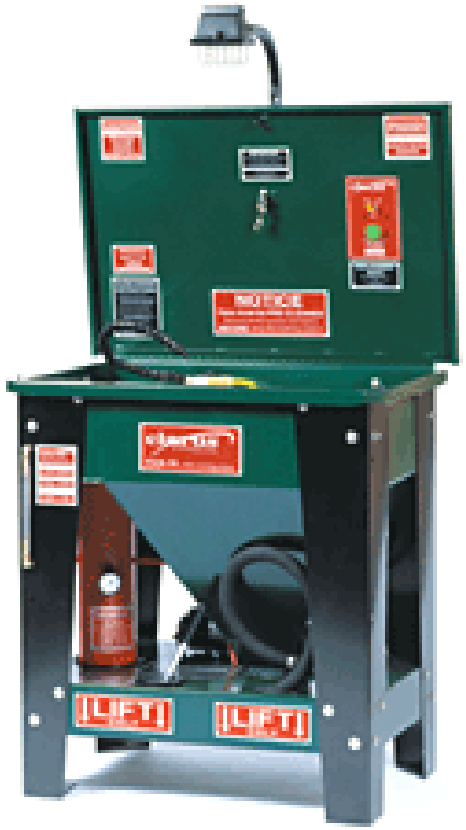
Reporting Requirements

Submit a semi-annual report to EPA and TCEQ (DPW Responsibility)

- Reports due:
  - May 1st (data from September 1 – February 29)
  - November 1st (data from March 1 – August 31)
- Identify if the operations have been in compliance for the semiannual period.
- A statement that the cleaning operations have been in compliance with the applicable standards.
- A statement of compliance signed by the Chief of Environmental Programs.

Records submitted to DPW on a monthly basis are the basis for this report – Incorrect report can result in fines and shines a negative spotlight on Fort Hood

Flush Cleaning Recap



- Keep lids on containers
- Minimize risk of spills
- Keep accurate records
- Submit records to DPW in a timely manner
- Everything you submit to DPW goes into a report to a government regulatory agency

Handling and Storage of Waste (40 CFR 63.748)

This section covers:

- Operational Practice and Design Requirements
- Recordkeeping Requirements
- Reporting Requirements

Operational Practices/Design Requirements

- Several primers, topcoats, specialty coatings, etc. at Fort Hood, but only two that contain HAPs:
  - Sherwin Williams Topcoat Tan 686A
  - Akzo Nobel Epoxy Primer (Spray2Fix)
- If you think you need a new primer, topcoat, or any type of coating contact Air Quality Program Manager at DPW to make a Hazardous Material Authorization Request
- Handle or transfer of the waste to or from containers, tanks, vats, vessels, and piping systems in a way that minimizes spills §63.748(a)(1)
- Store all waste containing organic HAPs in closed containers. §63.748(a)(2)

NO HAP coatings are approved to be onsite – do not bring anything from offsite

Recordkeeping Requirements

Sherwin Williams Topcoat Tan 686A

- No emission control or reporting requirements under Aerospace NESHAP
  - Meets definition of non-HAP material
  - Contains <1 wt% of any individual non-organic HAP
  - SO IMPORTANT to complete Hazardous Material Authorization Request for any new primers, topcoats, specialty coatings, etc. that come on post

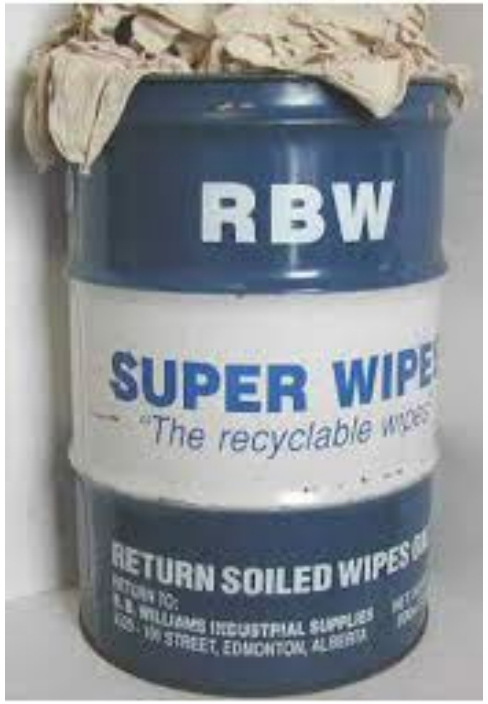
Spray2Fix Epoxy Primer

- No emission control or reporting requirements under Aerospace NESHAP
  - Fort Hood uses < 50 gal/yr of Spray2Fix
  - Fort Hood uses <200 gal/yr of all primers, topcoats, specialty coatings, etc. that contain HAPs
  - SO IMPORTANT to keep track of the amounts used and report them to Environmental

Imperative to track any new coatings that arrive on post and amount of Spray2Fix used

Quiz

1. What is wrong with this picture?



2. True or False: It's ok to bring a coating from home to use in a pinch on post.

Quiz

3. If you think you need a new primer, topcoat, or any type of coating, what do you do?

4. Who do you contact at Fort Hood if you have any questions regarding these requirements?

Questions?

Fort Cavazos Personnel

Clean Air Act Team

U. S. Army Garrison-Fort Cavazos
DPW Environmental Division (AMIM-CAP-E)
Bldg 4622 Engineer Drive

Air Team Mailbox
usarmy.cavazos.id-readiness.mbx.dpw-air-quality@army.mil

Hazardous Materials Accumulation/Disposal

For information or Appointment call 254-288-7627