

Company X	Instruction #	3005-A		
	Rev.	1	Rev. Date	6/14/2017
	Owner:	R. Gullis		
<b>WELDING and BRAZING CLEANING REQUIREMENTS</b>				

## 1. PURPOSE

The purpose of this procedure is to define the cleaning methods and detrimental material controls applicable to welding and brazing operations.

## 2. SCOPE

This procedure applies to all components being cleaned on the manufacturing floor in preparation for welding or brazing operations. This procedure meets the detrimental material requirements of Company X for final cleaned surfaces. This procedure also provides Company X requirements for welding and brazing operations involving final cleaned components containing crevices or inaccessible areas.

## 3. DEFINITIONS

- 3.1. ***In-Process Cleaning:*** In-Process cleaning operations include all cleaning of surfaces, which will still be accessible for final cleaning.
- 3.2. ***Final Cleaned Surface:*** A final surface on which all planned cleaning operations have been performed.
- 3.3. ***Crevice:*** Any narrow opening between mating surfaces where solutions or particles can be entrapped and not readily removed during cleaning operations.
- 3.4. ***Tools and Handling Equipment:*** All tools, fixtures, fittings, handling equipment and parts made of solid materials that do not become a permanent part of the component being manufactured.

## 4. EQUIPMENT

Acceptable Cleaning Solvents: Acceptable cleaning solvents for final cleaning of component surfaces shall be one of the following:

- A. Solvent: Unused or Redistilled Acetone
- B. Solvent: Unused Denatured or Isopropyl Alcohol
- C. Solvent: Distilled Water

Tools and Handling Equipment: Typical tools and handling equipment needed during cleaning operations:

- A. Clean wipes
- B. Rubber or nitrile gloves
- C. Scotch Brite, Emory cloth, and other abrasives
- D. Carbide grinding bits and aluminum oxide grinding stones
- E. Hot water and steam cleaner
- F. Compressed air
- G. Lifting device or strap

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## 5. CLEANING METHODS

The following identifies cleaning methods at various stages of fabrication applicable to welding operations. Specific cleaning instructions for each weld or braze operation shall be specified in the particular work instruction.

- 5.1. **Pre-Cleaning:** Pre-cleaning occurs in preparation for final cleaning of the components. Pre-cleaning methods include rinsing with hot water, cleaning with steam, cleaning with a degreaser, polishing with Scotch Brite, or the using an abrasive such as Emory cloth. **CAUTION:** Ensure all appropriate PPE (face shield, gloves, and protective bib) is used while steam cleaning to avoid burns.
- 5.2. **Final Cleaning:** Final cleaned surfaces are established by wiping the weld preparation with a clean wipe dampened with an acceptable cleaning solvent after all pre-cleaning operations have been performed. For welding operations, final cleaning is required for the weld preparation surfaces and an addition ½ inch of base material (heat-affected zone). Establishing a final clean surface is required for all components in which welding or brazing will be performed. **Note:** Use of PPE (rubber or nitrile gloves) is required when cleaning with acetone.
- 5.3. **In-process Cleaning:** In-process cleaning operations in the weld department includes interpass cleaning during welding operations. Interpass cleaning includes grinding of starts, stops, and any suspect areas or defects with a carbide burr between weld passes followed by brushing the areas with a stainless steel wire brush. In-process cleaning also includes polishing of the welded surface to remove indications prior to depositing the next weld pass. Polishing may be performed using a carbide burr, grinding stone, file, scotch brite, or Emory cloth. **Note:** When grinding the use of proper PPE (face shield and gloves) is required.

## 6. CLEANLINESS VERIFICATION

In order to verify cleanliness a visual inspection performed at a 1X magnification shall be performed prior to welding. Visual inspection acceptance shall ensure the surface is smooth, clean, and free of detrimental matter. Upon verification of cleanliness, welding operations may begin.