Ameritube LLC 1000 N. Hwy 77, Hillsboro TX 76645	**Revision Level: B**	**Procedure No. SOP - 600**
	Revision Date: 01/13/2014	**Page No. 1 of 4**
Finishing And Final Inspection	**This Document expires one day after printing Last Printed: July 25, 2014**	

Date	***Description Of Change***	***Signature***	***Rev. Level***
03/15/2012	***New***	***Jeremy***	***A***
01/13/2014	***Changes to the following articles: 3.1.2, 3.1.2.1, 3.1.2.2, 3.1.2.3, 3.1.3, 3.1.4, 4.1.3, 4.1.4, 6.1, 6.2, and Table 1***	***Wilson Shawn Franks***	***B***

Procedure Approval: Company Title: Date:

Quality Manager

1. PURPOSE

This document sets forth the minimum requirements for qualification of finishing personnel.

2. APPLICATION

This procedure applies to all personnel required to follow the procedure the proper method of measuring materials for shipping. This procedure concerns Production and Quality Assurance departments

3. PROCEDURE

3.1. Scope and Responsibilities

3.1.1. It shall be the responsibility of the Quality Manager to insure the following:

3.1.1.1. That training and experience requirements are established.

3.1.1.2. That the inspection personnel training program is properly administered.

3.1.1.3. It shall be the responsibility of the Inspection Lead to insure that all personnel maintain proper training and experience requirements for the job functions they are performing

3.1.2 A (3) three phase inspection process is overseen by Quality Assurance:

3.1.2.1 Phase 1 Inspection: 100% Inspection of material to be checked after the Intermediate Saw before entering the Furnace and the final annealing process.

3.1.2.2 Phase 2 Inspection: 100% Inspection of material to be checked in Finishing before the Straightener.

3.1.2.3 Phase 3 Inspection: 100% Inspection of material to be preformed after the Final Cut by no less than two inspectors.

3.1.3 100% Inspection of material is defined as: Both ends of every tube in the current phase of production or finishing (where applicable). A (4) point check on the Outer Diameter (O.D.) of all material. A (3) point check of the wall thickness of all material.

3.1.4 All personnel properly trained in the Straightening, Eddy Current, Video Jet/Line Marking, Final Saw, Shipping Count, Hex Bundling, and Boxing.

4. DIMENSIONAL VERIFICATION

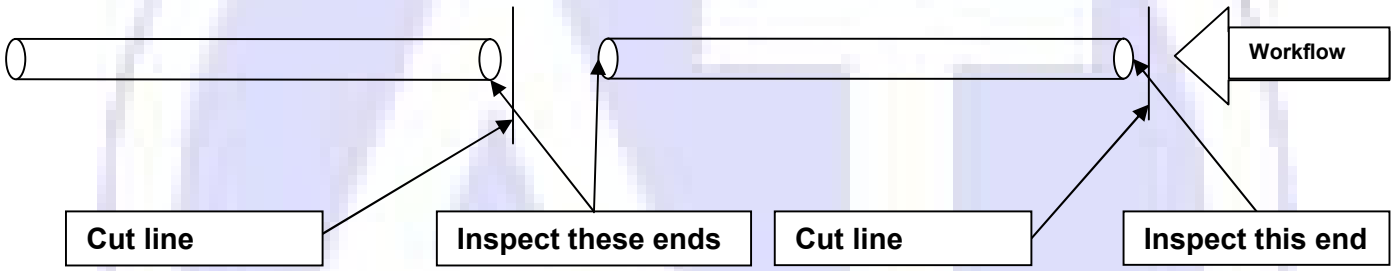
4.1.1. Verify all points and burrs have been removed from end of tube

4.1.2. Operator to verify proper tools per the work orders requirements

4.1.3. Prior to Straightening and after Final Cut, 100% Inspection is applied to verify O.D. and Wall Thickness by means of Micrometers, Go / No Go Snap gages, or Go / No Go ring gages in accordance with work order and specification requirements. Each tube is numbered at both ends to reflect the Final Dimensional Verification Report.

4.1.4. 100% Inspection of tube to be verified during final saw process at both ends with Micrometer or Go / No go plugs after deburring. Micrometer accuracy shall be $1/10^{th}$ the minimum allowable deviation of tolerance to verify wall thickness (i.e. tolerance +/- 0.005: accuracy allowance 0.0005). If micrometer readings fall above or below the allowable tolerance, the tube is rejected and the previous tube to be verified at both ends again. Insert Go / No go plug gage into the cut end of the tubes to verify correct wall thickness. If the Go gage goes into the tube and the No go gage does not the tube is acceptable. If the Go gage does not go or the No go goes, the tube is rejected and the previous tube to be verified on both ends again. See Table 1 below for details:

TABLE 1



5. FINIAL CUTTING PROCESS

1. Offset end of tape by 4 inches and measure from the solid 4 inch line from edge of saw grove.
2. Pull tape measure tight and stretch to required tube length plus the offset.
3. Mark the measurement with marker on side of rail.
4. Remove rollers to place back stop.
5. Adjust back stop face to the final cut tube length.
6. Measure the length from the saw groove to the face of the back stop twice.
    a. If there is a discrepancy get a second person and tape measure to verify the distance.
7. Measure the back stop face at both ends to make sure it is square to the saw groove.
    a. If it is not square then adjust the back stop face plate until it is square.
8. Cut test piece of tube.
9. Measure the cut tube with ***two sequential measurements***.
    a. If there is a discrepancy get a second person to take sequential measurements.
    b. If the tube is cut to wrong length then repeat steps 5 through 9.
    c. If tube is cut to proper length then proceed to step 10.
10. Measure the next 3 tubes to verify cut length.

11. Re-Verify the measurement of the tube after 20 tubes have been cut.

6. Release of Final Product

6.1. Product is prevented from passing on to the next processing stage before all specified in-process verification actions are completed with satisfactory result. Products that are released for further processing or use are identified with a positive inspection status. The operator must fill out the Final Dimensional Verification Report.

6.2. A visual inspection of product is preformed to ensure that all material is free from burs, dints, dings, scratches, flaking, uneven cuts, straightening marks, correct line marking, and any other visual inspection requested by the customer. The operator then fills out the Final Inspection Report.

7. Nonconforming Product

7.1. If a nonconforming product is identified, the operator/inspector labels the product with a REJECTED sticker or tag and prepares a product nonconformance report. Operators are prohibited from proceeding to repair a nonconforming product without first reporting to Quality Assurance.