

<b>Revision</b>	<b>Reason for Revision</b>	<b>Section</b>	<b>DCRN Number</b>	<b>Date</b>
NC	On File	On File	On File	1/15/2007
A	On File	On File	On File	8/3/2011
B	Added ITC requirements	3, 6, footer	129208	11/11/2015
C	Detailed Master Sample and form usage, rewrite of most sections to define process and responsibilities, ITC requirements removed.	1-6, header, footer	141067	5/13/2021

**1. Purpose**

This procedure is to outline the process for evaluation of fabric material and the criteria for acceptance/rejection of fabric material submitted to Receiving Inspection (1.10.1).

**2. Scope**

This procedure is applicable to fabric material and upholstered items using that material submitted to Collins Receiving Inspection for color, pattern, workmanship evaluation and acceptance.

**3. Reference Documents**

- 1.13.3 – Nonconforming Material
- 1.10.1 – Receiving Inspection
- 1.10.18 – Qualification of Materials for Burn Testing
- 1.10.18.1F2 – Fabric/Leather Color and Orientation Approval Form
- 1.10.24.1 – Color Acceptance

**4. Definitions**

- 4.1 Approved Master Sample – A color sensitive sample of any type that has went through all levels of approval including, as needed, customer approval, burn tests, quality approval, etc.
- 4.2 Master Fabric Sample – A fabric sample supplied by a customer or manufacturer that is used to verify color, pattern, orientation and workmanship of incoming fabric material as well as manufactured parts and assemblies.
- 4.3 Master Sample Approval Form – Identification form for the Master Fabric Sample. Form 1.10.18.1F2
- 4.4 Master Sample Label – Identification label that links the sample to the Master Sample Approval Form.

**5. Master Sample Identification, Responsibilities, Storage and Handling.**

- 5.1. Master Samples are identified with a corresponding Master Sample Approval Form (1.10.18.1F2) with a Master Sample Label adhered to the backside of the sample.

- 5.1.1. The Master Sample Form identifies the sample including the manufacturer name and part number as well as Collins color code and internal part number for the material.
- 5.1.2. The label has information to link the sample to the approval form. The label is to be applied to demonstrate orientation per the instructions on the label.
- 5.1.3. Collins Quality Control stamps/dates the Master Sample Form and the Master Sample Label, giving the sample final approval after verifying the form and label are complete and the sample has passed inspection and A-burn tests.

**5.2. Responsibilities of obtaining an Approved Master Sample:**

- 5.2.1. As all fabric material is subject to burn testing, reference procedure 1.10.18 for Collins personnel roles and responsibilities in obtaining an Approved Master Sample.
- 5.2.2. Suppliers shall coordinate with Collins Supplier Quality to obtain an approved master sample.

**5.3. Storage and handling of Master Samples**

- 5.3.1. Master Samples are to be maintained by Quality Inspection.
- 5.3.2. When not in use, Master Samples are to be kept in plastic bags and stored in folders with their corresponding approval form. The folders are stored in a cabinet to reduce exposure to light.
- 5.3.3. Master Samples are not to be directly touched with fingers. If a sample is needed to be handled directly, gloves must be worn to help protect from damage or staining of the sample.
- 5.3.4. Care must be taken when handling Master Samples to protect them from soiling, dirt, and excessive exposure to light.
- 5.3.5. If a sample is damaged, stained, faded or otherwise not suitable for visual comparison, a new sample is to be procured and a new form is to be completed and approved.

**6. Fabric Inspection/Requirements**

**6.1. General Requirements**

- 6.1.1. The color of the fabric samples are verified in accordance procedure 1.10.24.1 – Color Verification/Acceptance.
- 6.1.2. Lighting to be compliant with section 9.2 of procedure 1.4.24

**6.2. Parts and Assemblies**

- 6.2.1. In addition to the requirements of section 6.4, use the Approved Master Sample on file to verify that the orientation is correct; inside/out, up/down and left/right. If needed, contact engineering to determine final installed state of the part or assembly being inspected.

**6.3. Raw Material**

- 6.3.1. Whenever possible, visually inspect the fabric using an area that is similar in size to the Approved Master Sample.

#### **6.4. Common Fabric Defects to look for.**

Fabric should be free of weaving and finishing defects as well as defects listed below:

- **Bow:** Fill yarns are not perpendicular to the warp and/or selvage and form one of more arcs across the width of the fabric.
- **Broken or missing fill:** Defect runs entire side of fabric, perpendicular to the selvage.
- **Broken or missing warp:** Defect runs entire length of fabric, parallel to the selvages.
- **Knots:** Knots in the yarn.
- **Mis-draw:** Incorrect warp yarn is used, causing a pattern defect that runs the length of the fabric.
- **Incorrect fill:** Incorrect fill yarn is used, causing a pattern defect that runs the length of the fabric.
- **Skew:** Fill yarns are at an angle other than 90° to the warp or selvage.
- **Slubs:** Lumps in yarn or yarn plies.
- **Snags:** Elongated loops of yarn or plies of yarn that protrude from, or distort, the surrounding fabric surface.
- **Uneven weaving:** Sections of fabric appear more loosely or more tightly woven than remainder of fabric.
- **Uneven yarn:** Yarns used to form fabric are not uniform size or twist.

#### **6.5. Nonconforming Issues**

- If any inspection criteria are determined to be unacceptable during inspection at Collins, the nonconformances identified are documented and dispositioned in accordance with Collins procedure 1.13.3 – Nonconforming Material.
- If any inspection criteria are determined to be unacceptable during inspection at a supplier, the material and/or parts shall be quarantined and processed in accordance with supplier's procedures.