

Guidelines for Material Review Board (MRB) Plan

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CHANGES IN THIS REVISION

A sidebar on the left side of the text indicates changes.

| A new form was included to delegate MRB for Suppliers under Design & Build.

OBJECTIVE

This document establishes guidelines to be followed by Suppliers in order to apply for a Material Review Board (MRB) plan and provide information for EMBRAER's approval. The objective of the MRB Plan is to define Supplier's responsibilities as MRB.

DEFINITIONS

Major Nonconformity: a non-conformity, which affects one or more of the following conditions:

- Health or Safety;
- Performance or Operational Characteristics;
- Durability;
- Reliability,
- Interchangeability;
- Weight;
- Structural strength
- Maintainability/ Inspection;
- Appearance or visible aspects, relevant, when part of the specification.

Minor Nonconformity: a non-conformity that due to its characteristics, does not qualify as a major nonconformity.

INSTRUCTIONS

Suppliers shall have a material review system approved by EMBRAER, in order to process nonconforming material for each EMBRAER program.

a) Supplier's nonconforming material control system approval for BUILD TO PRINT PARTS

| For the approval process, Supplier shall submit the following:

- ✓ An MRB plan which shall include or define:
 - The responsibility of the MRB as a body;
 - The responsibility of individual MRB members;
 - The corporate organization chart showing the reporting line of the MRB personnel;
 - The documentation of repair/ rework/ use as is/ scrap/ return to Supplier's dispositions;

- The form to perform the implementation of dispositions;
 - Corrective and preventive actions responsibilities and procedures;
 - An appendix to include resumes of each member of the MRB;
 - A list of approved signatures of the MRB members previously authorized, separated by Quality Engineering, Product Engineering, and Stress Analysis Engineering Focal Points for each EMBRAER Program.
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- ✓ This plan shall be a single, traceable document and the underlying objective for the plan is to define and limit the functions of the Supplier during the processing of nonconforming material;
 - ✓ This plan shall be applied during all the time of applicable program;
 - ✓ All changes in MRB structure shall be informed with a new revision of the MRB plan and approved by EMBRAER.

Supplier's MRB members shall submit all non-conformities to EMBRAER for review and approval. For the analysis and disposition of the non-conformities, all possible implications, such as, structural, functional, aerodynamics, interfaces, useful life, etc. shall be reviewed and considered.

THE APPROVED MRB PLAN DOES NOT MEAN THAT SUPPLIER HAS MRB AUTHORITY DELEGATION.

a.1) MRB plan structure

The structure of the MRB Plan requires as a minimum the following items:

- ✓ Cover sheet;
- ✓ List of effective pages;
- ✓ Revisions sheet;
- ✓ Table of contents or summary;
- ✓ Scope: Supplier name, description of the products and the program that will be the subject of EMBRAER's approval;
- ✓ Referenced documents: a list of applicable documents, including EMBRAER's and Supplier's documents;
- ✓ Definitions: defines the terms, abbreviations, and acronyms used in the plan.
- ✓ Material Review Board (MRB) Organization: description of Supplier's MRB organization and responsibilities:
 - Quality MRB Members are responsible for:
 - i. Non-conformity identification;
 - ii. Non-conformity classification (major/ minor/ test article);
 - iii. Non-conformity report beginning, verification and closing;
 - iv. Tests results;

- v. Transference of disposition instructions to work orders according to standard requirements;
- vi. Corrective and preventive action procedures.
- Engineering MRB Members are responsible for:
 - i. Considerations of defect range and all consequences of the technical instructions;
 - ii. Provision of clear and accurate instructions at dispositions;
 - iii. Coordination of engineering technologies with authorities.
- ✓ MRB Procedures: includes a synopsis of MRB procedures, mentioning:
 - Limitations;
 - Report submission;
 - Focal points.
- ✓ Structural analysis report (SAR): describes when a SAR will be submitted to evidence those nonconforming "repaired" or "used as is" products comply with structural requirements. In addition, this topic emphasizes that the stress focal point shall sign the SAR.
- ✓ Corrective action: describes procedures and responsibilities to request and perform corrective and preventive actions.
- ✓ Records and control forms: attachment of internal control forms used to register the nonconforming material including at least:
 - Scrap forms;
 - Rework forms;
 - Nonconforming material forms;
 - Corrective action forms.
- ✓ Non-conformity detected after delivery: describes actions when non-conformity after delivery for EMBRAER is detected.
- ✓ Attachments:
 - Organization Charts;
 - Quality MRB personnel resumes;
 - Engineering MRB personnel resumes;
 - List of signatures of MRB members for each EMBRAER program;
 - Non-conformity internal documents, forms and flow-charts of non-conformity process, including prior and after delegation of MRB Authority.

a.2) Supplier's material review board (MRB) authority delegation

Supplier is delegated for processing *MINOR* non-conformities under specific limitations. The following conditions shall be complied to be delegated:

- ✓ At EMBRAER's discretion, Supplier shall have enough numbers of qualified engineers available for MRB duties at Supplier's Engineering organization,
- ✓ The previous ability of MRB Members to address non-conformity problems as follow:

- Adequate solution: disposition, classification and its implementation;
 - Correct procedure to rework and repair;
 - EMBRAER's approval about reworked and repaired products;
 - The effectiveness of corrective action adopted.
- ✓ Each delegated member of MRB shall be approved by EMBRAER.

The MRB authority delegation shall be documented after fulfilment of established conditions in a Material Review Board Delegation form (available at <https://www.embraersuppliers.com/esuppliers/#/en-US/supplier-requirements>) - see attachment 1.

New MRB members or members that do not have authority delegation cannot act as delegated. The members shall submit all dispositions to a delegated member for evaluation and approval.

At EMBRAER's discretion, EMBRAER can approve MRB's authority delegation for other members since the conditions above are complied.

| b) Supplier's nonconforming material control system approval for DESIGN & BUILD PARTS

| For the approval process, Supplier shall submit the procedure for controlling non-conforming products according to AS 9100 item 8.7- Control of Nonconforming outputs for EMBRAER review.

| Supplier shall submit new versions of the procedure when changing the previous approved criteria to define the MRB personnel's qualification.

| b.1) Supplier's material review board (MRB) authority delegation

Supplier is delegated for processing *MINOR* non-conformities.

The MRB authority delegation shall be documented after fulfilment of established conditions in a Material Review Board Check List (available at <https://www.embraersuppliers.com/esuppliers/#/en-US/supplier-requirements>) - see attachment 2.

| c) General rules

The MRB's authority shall not be delegated to any Subtier Supplier. EMBRAER reserves the right to delegate the subtiers.

If Supplier's MRB members have MRB's authority delegation, only major and test articles non-conformities shall be submitted.

THE MRB AUTHORITY DELEGATION IS NOT CONSIDERED IN CASES OF MAJOR/ TEST ARTICLE NONCONFORMITY, EVEN IF THE DESIGN IS SUPPLIER'S PROPERTY.

EMBRAER RESERVES THE RIGHT OF CANCELLING THE MRB AUTHORITY DELEGATION IN CASE OF EVIDENCES OF FAILURE IN COMPLYING THE ABOVE REQUIREMENTS.

d) Report submission

- ✓ Major non-conformities:

All MAJOR Nonconforming material disposed by Supplier's approved MRB members shall be submitted by nonconformity report to EMBRAER's MRB for disposition/ approval.

✓ Minor non-conformities:

All MINOR nonconforming material disposed by Supplier's approved MRB members shall also be submitted by non-conformity report to EMBRAER's MRB for disposition/ approval (applicable for non-delegated Supplier's MRB members and minor non-conformities out of the specified limits of authorization).

✓ Test article non-conformities:

Only for pre-series phase, Supplier shall submit all non-conformities related to test article part numbers (and respective serial numbers, when applicable) in the non-conformity report.

e) Pending non-conformity report

Non-conformity reports, which have already a disposition approval from EMBRAER but require some action to be taken by EMBRAER, shall be negotiated and reported in AIS as Outstanding Work (OW) according to guidelines established in "Guidelines for Assembly Inspection Summary" (available at <https://www.embraersuppliers.com/esuppliers/#/en-US/supplier-requirements>).

In case of actions categorizing OW, Supplier shall report in each pending non-conformity report the end Assy PN and respective serial number, activities already executed and activities to be executed by EMBRAER before delivery of related products. The pending non-conformity reports shall be listed and clearly identified in the product. Products not categorizing AIS but with pending actions to be taken in the non-conformity report by EMBRAER, shall have EMBRAER's MRB acceptance disposition as well as Supplier's addendum informing:

- End Assy PN (when applicable);
- PO number (absolutely mandatory);
- Invoice number (absolutely mandatory);
- Shipment date (mandatory).

Supplier shall not deliver products with non-conformity reports that do not have a disposition approval from EMBRAER. Only after EMBRAER's MRB APPROVAL on the non-conformity report, the Supplier is authorized to ship the products to check the effectiveness.

f) Forms:

Attachment 1:



MATERIAL REVIEW
BOARD DELEGATION

Attachment 2:



MRB CHECK LIST

g) Process flow:

