

FLYSHEET AN-19

SUPPLIER MATERIAL PROCESSING PROCEDURE (SMPP) GUIDELINES

The Boeing Company utilizes a material processing control system which provides for the use of Material Processing Specifications (MPS) covering material processing requirements. Seller working to Buyer MPS's shall document his operation with the detailed processing procedure, inspection procedure, and description of controls imposed on the process. A company wishing to perform processing in compliance with an MPS must develop a Supplier's Material Processing Procedure (SMPP) which assures compliance with the MPS requirements. Qualification data developed in conjunction with the manufacturing and processing application must be available to substantiate compliance. An existing Seller document may be acceptable as an SMPP. Each SMPP will be evaluated by the Buyer primarily on the basis of substantiating data rather than on the Seller's choice of operational techniques. MPS's requiring SMPP's are identified with a triple asterisk (***) on the Drawing and Specification (D & S) Flysheet attached to this order.

Each SMPP must be approved prior to Buyer acceptance of the first production article. Qualification of the process is determined from objective evidence that the process procedures, as written, will produce products which meet all of the requirements of the governing MPS.

Any changes in conditions or requirements of the governing MPS or Seller's experience may require revisions to the SMPP. Proposed revisions to an SMPP shall have documented Buyer approval prior to implementation. During review of the proposed revisions the Buyer will determine if requalification of the process is necessary.

The following guidelines are provided for preparing SMPP documents.

GENERAL

Supplier Material Processing Procedures (SMPP) are controlled working documents used at the operator level to delineate "how to" instructions for the processing of materials or parts. They shall include special requirements concerning process controls, inspection instructions, special tools or equipment, certification and qualification of equipment and personnel, and in-process repair or touch-up as authorized in the Material Processing Specifications (MPS). SMPP's shall be easily understandable to the operator-user, be explicit in regard to process details and shall be written in step-by-step order.

Whenever possible, the SMPP shall be developed as a process oriented procedure, containing information that may be utilized for processing many parts or families of parts.

The procedure must be written with sufficient detail that repeatability of the process is assured by an operator having a basic understanding of the process in spite of varying degrees of skill or training.

In-process inspection points and data recording requirements shall be indicated in the SMPP and buy-off's on the manufacturing records will include the recording of the revision identifier of the SMPP actually utilized.

At least one SMPP is required for each MPS. Additional SMPP's may be written to facilitate process control or when there is more than one method in a given process.

The SMPP issue in use at date of contract and all subsequent material for changes during the life of the contract, together with substantiating data shall be made available to the Buyer for approval prior to processing materials or parts. SMPP's provided to Buyer for review shall include all applicable documents referenced in the SMPP.

Starting with the first change of an SMPP, a revision record shall be maintained so that a complete revision history of each SMPP is established.

FORMAT AND CONTENTS

A specific style-guide for the contents of the SMPP is not required. However, it is mandatory that the procedures be written in a precise manner, free of vague terms subject to various interpretations and worded to prevent misinterpretations. Sentences should be as short and concise as possible

Seller's SMPP documentation may consist of or be in accordance with Seller's normal documentation media if it is adequate and complete.

The following types of information, as applicable, shall be included in the SMPP but not necessarily in this particular format:

1. **TITLE PAGE:** The Seller's name, title of document, document identification number, revision identifier, and date of issue shall be clearly noted. The authorizing MPS for which the SMPP was prepared, with its revision identifier, shall also be noted.
2. **SCOPE:** The purpose of the procedure, its applicability or intended use, and a brief description of the contents should be delineated.
3. **APPLICABLE DOCUMENTS/MATERIALS:** All documents and materials required for processing operations shall be listed. In the case of materials, i.e., chemical solutions, adhesives, ceionized water, etc., the material noun and description, including grade, purity, resistivity, alkalinity, must be specified or a material specification completely defining the material shall be noted.
4. **GENERAL NOTES:** Notes of a general or explanatory nature and general safety requirements pertaining to protection of hardware or personnel safety shall be stated.
5. **PROCEDURES:** Detailed procedures should be preceded with a sequential summary of the overall process or a flow chart showing the sequence of events.

Detailed procedures shall be written in a sequential order. Each operation shall be described in sufficient detail to assure repeatability of the process. Each operation and the sequence of operations shall be delineated specifically so that the operator/user is not allowed choice of operational techniques which may produce products that do not conform to the requirements. Assuming that "shop practice" will take care of an operation is unacceptable.

In-process control inspection points shall be specified in the appropriate sequence if quality cannot be verified by inspection of the end-product. Test coupons required to verify acceptance of the process shall be referenced in the procedure in the proper sequence. Data recording requirements shall be specifically noted in the proper sequence of the procedure. All supplemental requirements shall be included in the procedure to the extent applicable rather than by reference to other documents.

6. **EQUIPMENT AND TOOLING:** Special tooling and equipment required to perform the process shall be listed by tool type. Instructions describing their use shall be included as necessary. For part oriented SMPP's tooling shall be listed by tool type, identification number and description.
7. **QUALITY ASSURANCE:** Quality Assurance provisions shall describe all of the inspections, test and process controls required to verify that the engineering requirements have been met.

NOTE: Verification of requirements for completed parts are made by (1) tests and inspection of the completed parts, (2) tests on representative samples or (3) if not possible by either of these, by a written statement certifying that all the detailed steps outlined in the process procedure have been followed.

Process controls shall also be clearly defined to support the processing and inspection operations.

NOTE: Process controls include evidence of compliance with such activities as environmental control, contamination control, special or periodic maintenance of equipment, calibration of instruments, solution concentration limits, analysis and maintenance of chemical solutions, thermal surveys and operational range limitations of heating equipment, qualification or certification of equipment and operations, laboratory testing of coupons or specimens, and verification of procedural compliance.

8. **PACKAGING AND HANDLING:** Materials, methods and instructions required to preclude physical damage, contamination or corrosion during processing and handling between operations and during shipment must be clearly delineated.

All SMPP's should be forwarded to Buyer.