Engineering Requirements
Flowdown Guide

July, 2011
This document was developed as a guide to represent the process of flowing down Lockheed Martin Aeronautics engineering requirements to suppliers and processors. The guide is an aid for any supplier/subcontractor processing parts or building hardware to an Aero design.

This data is provided as a guide, and does not necessarily consist of all embedded requirements.

Remember – All item(s)/material(s) on your Purchase Order must be manufactured in accordance with the latest engineering drawing with the exception of spares and repairs. If you do not have the latest revision, please contact your Lockheed Martin Aeronautics Buyer immediately.
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34  REMOVE FINISH ON SELECTED SURFACES FOR BONDING. FINISH IN FILLETS IS ACCEPTABLE. RESTORE CORROSION PROTECTION PER ABCDEFG00001.

33  ORIENT NUTPLATE SO THAT REMOVAL CLIP END FACES UP.

32  VERIFY CLASS R ELECTRICAL BOND BETWEEN IDENTIFIED SURFACES OF DESIGNATED PARTS PER ABCDEFG00001.

31  ELECTRICAL BOND PER ABCDEFG00001 METHOD 1 FOR PAINTED SURFACES, METHOD 3 FOR UNPAINTED SURFACES, CATEGORY 2, CLASS R.
Lockheed Martin Aeronautics Purchase Order (PO)

Purchase Order: 1234567
Amendment Number: 0
Lockheed Martin Business Unit: Aeronautics Company - Fort Worth

Order Date: 05/19/2007
Document Type: Purchase Order
Status: Accepted

**MATERIALS USED IN MANUFACTURED PARTS AND/OR MATERIALS**
DELIVERED UNDER THIS PURCHASE ORDER ARE REQUIRED TO BE
SUPPLIED BY DOMESTIC MANUFACTURERS (CONTINENTAL U.S.).
SHOULD SELLER REQUIRE TO MANUFACTURE OR SHIP PARTS MADE FROM
FOREIGN PRODUCED MATERIAL, THE BUYER MUST BE NOTIFIED IN
WRITING, AND SELLER MUST RECEIVE WRITTEN APPROVAL FROM THE
BUYER PRIOR TO ANY SUCH SHIPMENT OF MANUFACTURED PARTS
AND/OR MATERIALS.

------------------- OUTSIDE PROCESSING -------------------
SELLER SHALL UPON RECEIPT OF PURCHASE ORDERS RELEASE,
INITIATE PLANNING TASK IDENTIFYING OUTSIDE PROCESSING
REQUIREMENTS AND SELECTING THE APPROPRIATE OUTSIDE
PROCESSORS IN ACCORDANCE WITH LOCKHEED MARTIN AERONAUTICS
APPROVED SOURCES. UPON IDENTIFICATION OF THE OUTSIDE
SOURCES, SELLER SHALL NOTIFY THE OUTSIDE PROCESSORS OF
PROCESSING CONTRACTS PROVIDING THE NECESSARY FLOW-DOWN
DOCUMENTS (SCHEDULE WITH QUANTITIES, DRAWINGS, SPECIAL WORK
INSTRUCTIONS) TO FACILITATE MANUFACTURING PLANS BEING
DEVELOPED BY THE PROCESSOR FOR REQUIRED PROCESSES.
IN ADDITION TO THE INITIAL NOTIFICATION, SELLER SHALL AT A
MINIMUM, PROVIDE 3 WORKING DAY ADVANCE NOTIFICATION
OF PARTS ANTICIPATED TO BE DELIVERED TO THE OUTSIDE
PROCESSOR FOR PROCESSING TASK(S) TO BE PERFORMED.

SELLER SHALL FURNISH ALL REQUIRED MATERIAL, THE COST OF
WHICH IS INCLUDED IN THE UNIT AND TOTAL PRICE.

"FLOWDOWN OF ENGINEERING SPECIFICATION REQUIREMENTS ONLY
APPLIES TO LOCKHEED MARTIN DESIGNED PARTS:
UNLESS A PARTICULAR REVISION OF AN ENGINEERING SPECIFICATION
DOCUMENT IS LISTED, USE ONLY THE LATEST REVISION OF THE
REVISION IN EFFECT ON THE DATE OF THE CONTRACT. THE
REQUIREMENTS OF THESE DOCUMENTS ARE HEREBY INCORPORATED
INTO THIS PO BY THIS REFERENCE AS APPLICABLE TO RESPECTIVE
PROGRAM(S)."

1. EMAP DATABASE REQUIREMENTS (APPLICABLE TO ALL PROGRAMS
EXCEPT T-50) LOCATED ON THE LOCKHEED MARTIN
EXTERNAL WEB PAGE AT
"HTTP://WWW.LOCKHEEDMARITIN.COM/MATERIAL-MANAGEMENT" (MUST BE
IN LOWER CASE) UNDER "ENGINEERING" THEN "ENGINEERING
MATERIALS AND APPROVED PRODUCTS"

2. APPLICABLE PROGRAM AND IM AERO ENGINEERING SPECIFICATIONS
LOCATED AT
"HTTP://WWW.LOCKHEEDMARITIN.COM/MATERIAL-MANAGEMENT" (MUST BE
IN LOWER CASE) UNDER "ENGINEERING" THEN "MATERIAL & PROCESS
SPECIFICATIONS - ALL PROGRAMS"

3. MATER PROGRAMS ONLY: (C-130, C-27, C-5, F-3, S-3, P-22)
FOR PARTS LISTED ON LOCKHEED MARTIN ENGINEERING DRAWINGS,
ONE OF THE FOLLOWING WILL BE REQUIRED:
* PREPARED PARTS HANDBOOK (PPH) APPLICABLE TO ALL
MARIETTA PROGRAMS EXCEPT P-22
* PARTS PROCUREMENT MANUAL (PPM) - ONLY APPLICABLE TO P-22
PROGRAM
THE PREVIOUS TWO ITEMS ARE NOT ON-LINE AND MUST BE OBTAINED
FROM THE BUYER.

Reference to EMAP
Reference to Preferred Parts Handbook (PPH)
Reference to Material & Process Specifications
Selling hereby agrees that (1) it has obtained or will timely obtain the latest applicable program specification documents as referenced above, and (2) in performance of its obligations in connection with this PO, seller shall comply with such specification documents and all other requirements of this PO, unless seller is otherwise directed by buyer.

Engineering specification requirements are Lockheed Martin Corporation proprietary information and as such are protected in accordance with the PIA executed to gain access to the systems.

Seller shall flowdown the applicable Lockheed Martin specifications and approved materials to each sub-tier involved with producing the Lockheed Martin designed part.

********** TERMS AND CONDITIONS **********

Dated 09/03/03, "H" Clause, and Quality Appendix "QX". These documents may be viewed on the Lockheed external website.

http://www.lockheedmartin.com/aeronautics/materialmanagement/quality/QualityAppendices.html
Preferred Parts Handbook (PPH)
What is the Preferred Parts Handbook (PPH)?

- The Preferred Parts Handbook (PPH), Volume 6, Section 99 is the official Engineering source for Engineering procurement requirements of standard parts for Lockheed Martin Aeronautics-Marietta purchase orders (excluding F-22 program). PPH specifies the approval sources and contains specific information that suppliers and Lockheed Martin Aeronautics Receiving and Inspection must follow. PPH also includes stocking and usage instructions for superseded parts.

Who needs it and why?

- Subcontractors/suppliers of Lockheed Martin Aeronautics designed assemblies

- Information in the PPH, Volume 6 Manual, shall be used by Lockheed Martin Aeronautics and its subcontractors/suppliers for the procurement and receipt of component parts used in the production of Lockheed Martin Aeronautics-Marietta designed assemblies (excluding F-22 program).
How do I get there?

Mid-way down the page you will find the DSD – PPH link

Read the instructions on how to access

Design Support Database (DSD)-Parts Database Registration Instructions

To gain access to the DSD-Parts systems, contact Dorothy McInroy at dorothy.mcinroy@lmco.com. Please provide the following information: Company name and address, Government assigned Cage Code (which can be found at https://www.bpn.gov/bincs/begin_search.asp), Requestor’s first and last name, email address, telephone number, identify which aircraft program(s) you need, Lockheed Martin Buyer Name and Seller/Supplier Code. Also, choose and provide a 7 Character Alpha/Numeric User ID starting with an “F” for F-22 or “C” for Core Programs (see first paragraph for definitions). Once you receive an email with your temporary password, use the following links to gain access.

DSD-Parts Core Marietta Programs (formerly known as the Preferred Parts Handbook - PPH)

DSD-Parts F-22 Program (formerly known as the Parts Procurement Manual - PPM)

EMAP/DSD-Parts Proprietary Information Agreement

The EMAP/DSD-Parts website requires a site-specific Proprietary Information Agreement (PIA). This Proprietary Information Agreement is REQUIRED for access to the EMAP or DSD-Parts Databases and must be completed and signed by each individual who has need for EMAP /DSD-Parts access. For questions about the EMAP/DSD-Parts Proprietary

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Engineering Materials & Approved Products (EMAP)

Lockheed Martin Aeronautics Approved Material Suppliers
What is EMAP?

• EMAP Contains all materials required by engineering drawings, process specifications, process bulletins, design standards and purchase order for the manufacture of Lockheed Martin Aeronautics designed parts.

• EMAP also contains references to material specifications, approved raw material manufacturers and their products, a cross reference for superseded and current specifications, and additional requirements above and beyond the specification requirements.

Note: EMAP is applicable to all programs with the exception of F-16, F-2, and T-50 Programs
Suppliers and/or processors who supply Lockheed Martin Aeronautics designed parts need access to EMAP. Lockheed Martin Aeronautics suppliers and distributors must comply to the EMAP requirements for selling/supplying engineering materials to Lockheed Martin Aeronautics.

The information in EMAP is used by Lockheed Martin Aeronautics and its subcontractors for the procurement and receipt of materials used in the production of Lockheed Martin Aeronautics designed parts, whether fabricated or purchased.

LMA-D0006 Defines the Contents and Usage of EMAP. This document should be used as a reference to understand the various columns in the EMAP database.

The EMAP sections are specific to the Engineering Designed Site, e.g.; Marietta designed parts must use the Marietta section, Fort Worth designed parts use the Fort Worth section, etc. If there is any question regarding site, please contact the Buyer that issued the purchase order.
• EXTERNAL WEBSITE: Located on the External Material Management Homepage under the “Engineering” link.

http://www.lockheedmartin.com/aeronautics/materialmanagement/
1) http://www.lockheedmartin.com/aeronautics/materialmanagement/

2) Engineering

3) Engineering Materials & Approved Products (EMAP)
Select Subcontractor
How do I register & get access?

Select “Register”
How do I register & get access?

- Fill out COMPLETELY & Submit Registration Form
- User ID & Password can be anything
LMA-D0006 Defines the Contents and Usage of EMAP. This document should be used as a reference to understand the various columns in the database.

1) Select “Please Read”

2) Select “Contents and Use”
The LMA-D0006, “Engineering Materials and Approved Products”, describes the EMAP database.
1) Click here for Search

2a) Search by EMAP #

2b) Search by specification, description, etc...

2c) Search by PIOS Part #
EMAP search can be filtered for Manufacturer & Distributor Information Only
EMAP Search Results

Version #

EMAP ITEM #
And Revision Date

Specification (s)

Additional Requirements

Approved Source & Product Information

Internal Requirements

Superseded specs and EMAP #s

XYZ Company
Class xxx
Prod code: N/A
LMAS MSDS:
0123456

MIL-S-xxx
EPS40.xx
STP500-xx
EPS23.xx
STP401.xx

G40.xxx
G40.xxxx

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Lockheed Martin Aeronautics
Controlled Processes & Approved Processors
What is it?

- **QCS-001** – A directory for Lockheed Martin Aeronautics Controlled Processes and Approved Processors

- **Controlled Process** – An operation performed on an item where the operation is not readily inspectable subsequent to its conclusion. Controlled processes have verifiable controls inherent to the process i.e. heat treat, plating, nondestructive testing, etc. The controlled processes listed in QCS-001 are not applicable to standard hardware (nuts, bolts, washers, etc.) that are ordered to military, federal or industry specifications or industry standards (e.g.; MS, AN, NAS, etc.). Controlled processed are not applicable to metallic raw material (place, sheet, bar, extrusion, etc.) until the manufacturer begins processing the raw material to our design requirements.
How do I get there?

1) http://www.lockheedmartin.com/aeronautics/materialmanagement/
2) Quality Requirements
3) Supplier Quality Management System
How do I get Access?

Select “Request an Account”

Must check account requirements
Fill out & Submit form

*Email address must match the Email that Lockheed Martin Aeronautics has on file as a contact.
QCS-001 Directory

Query by:
- Specification Index
- Processor Name
- Process Code
- Process Name

QCS-001 Queries
- Specification Index
- Query by Processor (Vendor) Name
- Query by Process Code
- Query by Process Name

QCS-001 Changes
- Specification Index Changes
  - Process Sources Added
  - Process Sources Deleted
  - List of Changes to Approved Sources

QCS-001 Documentation
- QCS-001 Requirements Document
- Explanation of QCS-001

QCS-001 90 Day Usage Reporting
- Report QCS-001 Usage
- Instructions for Usage Reporting

-QCS-001 Requirements Documentation
- Explanation of QCS-001

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Lockheed Martin Aeronautics
Specifications & Listings
What is it?

- **EDCS** – Enterprise Data/Collaborative System
  - A place for Lockheed Martin Suppliers/Processors to view Material & Process Specifications for ALL Lockheed Martin Aeronautics programs
  - Access is set up for each individual user (not a company-wide account)
  - EDCS access is only available for US persons (US citizen or permanent resident)
  - Access must be approved by Lockheed Martin Aeronautics Buyer or Supplier Quality Management (SQM) Representative who can verify the user’s need to know, and that the appropriate Proprietary Information Agreement (PIA’s) are in place.
How do I get there?

1) http://www.lockheedmartin.com/aeronautics/materialmanagement/

2) Engineering

3) Material & Process Specifications – All Programs
How do I get access?

Note: Submit all Access Requests to your LM Aero Buyer for approval

EDCS Access Request Form (except F-35, F-22)

F-35 Access Request Form

F-22 Access Request Form
Once you’ve received access

Material & Process Specifications - All Programs

Click here to access Livelink and RDL

Material and processes specifications, including Fort Worth, Marietta, and Palmdale specifications, may be accessed on EDCS/Livelink. For EDCS access, download the appropriate Access Request Form below (click link and select the “Save” option). Requestors should fill out the form electronically and email it to their LM Procurement representative, who will verify the requestors need to know, and that the appropriate LM Proprietary Information Agreement(s) (PIA) are in place with the requestor’s company.

Each individual requestor must complete an access request, since access is granted on an individual (not company) basis. The Procurement representative will forward the request to the appropriate contact listed below so that a Livelink supplier account can be set up. Once an account is set up, instructions for accessing Livelink will be emailed directly to the individual requestor.

NOTE: DOD Classified Specifications are not available through Livelink. Hard copies are available through the specific program offices. Please contact your buyer.

For access to NMAP specifications for programs other than F-22 or F-35 JSF (See instructions below regarding access requests for those programs), requestors must complete the Access Request Form (EDCS) and email it to their LM Aero Procurement representative for approval. The Procurement representatives forward the approved requests to Lynda Finnish or fax hard-signed requests to 817-762-6316.

Questions, comments or requests for general information regarding access to Livelink should be directed to: Eduardo Arceo.

F-35 JSF DATA LIBRARY (JDL)

For access to F-35 JSF specifications, requestors must download and complete the appropriate JDL Access form below (click link and select the “Save” option). The access form (Word document) should be filled out electronically and emailed to their LM Procurement representative. The Procurement representative will forward approved requests to the contact listed on the form. Once an account is set up, instructions for accessing the JDL Data Library (JDL) will be emailed directly to the individual requestor.
Once you’ve received access,

Enter the Username & Password that Lockheed Martin Aeronautics provided to you.

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FOR INFORMATION ONLY
Select “PROGRAM ASSOCIATES” link
Click Here
- This link should be titled the same as the company name submitted on your EDCS access request form
1) Select “Specifications”
2) Select **Program**
- You will only see programs that you have a Proprietary Information Agreement (PIA) for
3) Select Specification Document (FMS, FPS, FQML, FQPL, NDTs, etc...)
Contact Information

- **Purchase Order (PO)**
  - *Contact your Lockheed Martin Aeronautics Buyer*

- **Preferred Parts Handbook (PPH)**
  - *Contact your Lockheed Martin Aeronautics Buyer*

- **Engineering Materials & Approved Products (EMAP)**
  - Dorothy McInroy
  - (770) 494-9428
  - dorothy.mcinroy@lmco.com

- **QCS-001 (Controlled Processes & Approved Processors)**
  - Glenn D. Hermes (817) 777-6760  **OR**  Justin S. Cook (817) 777-2688
  - glenn.d.hermes@lmco.com  **OR**  justin.s.cook@lmco.com

- **Material & Process Specifications (EDCS-Enterprise Data/Collaborative System)**
  - Lyle K. Garton
  - (817) 935-3283
  - lyle.garton@lmco.com