Engineering Requirements Flowdown Guide

July 2021



Overview

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.

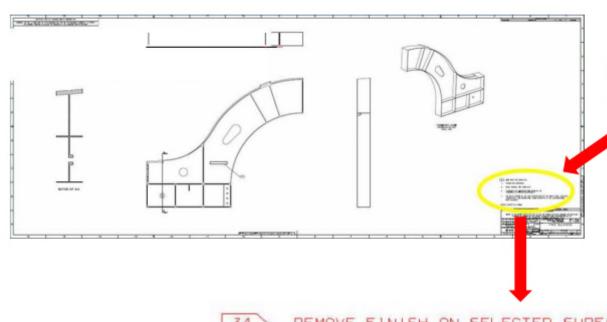
This data is provided as a guide, and does not necessarily consist of all embedded requirements.

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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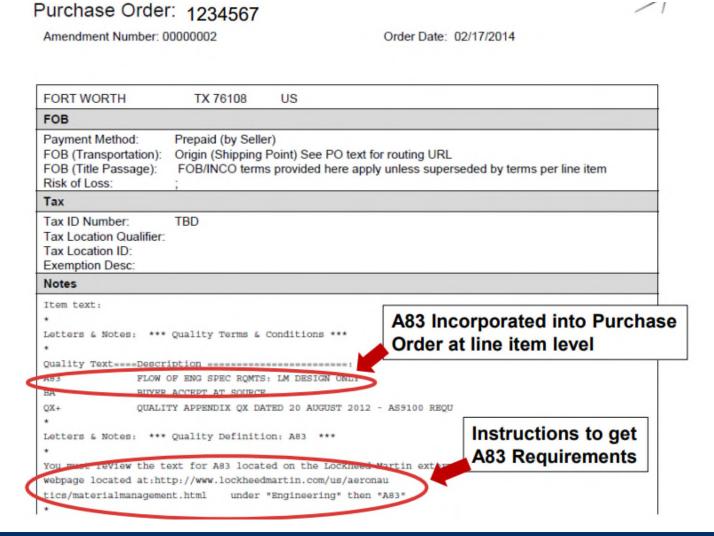
Lockheed Martin Aeronautics Engineering Drawing



Process
Specifications
located here

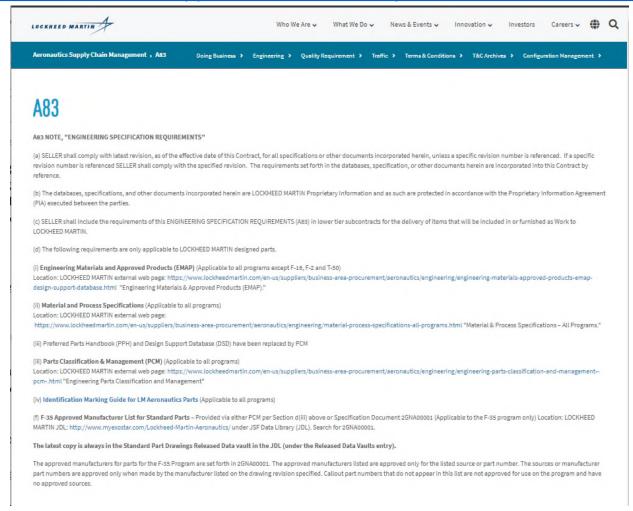
- REMOVE FINISH ON SELECTED SURFACES FOR BONDING.
 FINISH IN FILLETS IS ACCEPTABLE DESTORE
 CORROSION PROTECTION PER ABCDEFG00001
- 33 ORIENT NUTPLATE SO THAT REMOVAL CLIP END FACES UP.
- 32 VERIFY CLASS R ELECTRICAL BOND BETWEEN IDENTIFIED SURFACES OF DESIGNATED PARTS PER ABCDEFG00001
- ELECTRICAL BOND PER ABCDEFG00001 METHOD 1 FOR PAINTED SURFACES METHOD 3 FOR UNPAINTED SURFACES. CATEGORY 2. CLASS R.

Lockheed Martin Purchase Order (PO)

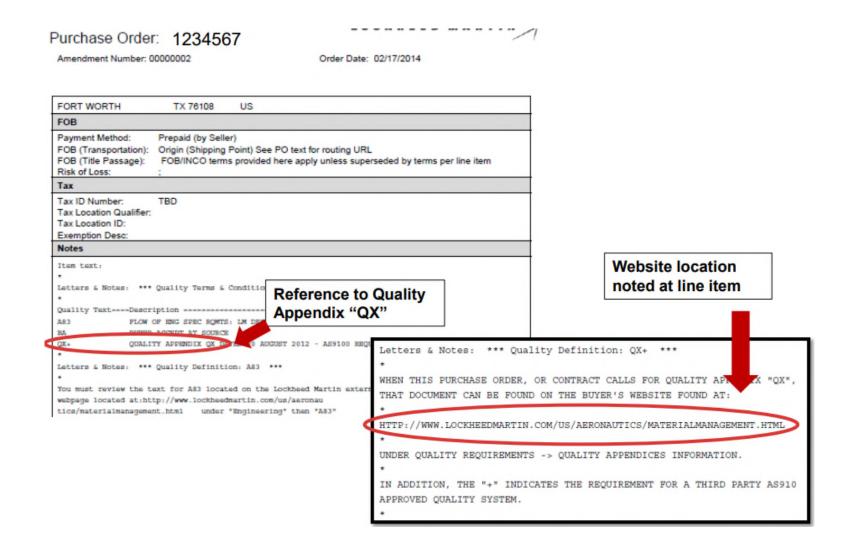


How do I get to A83?

https://www.lockheedmartin.com/en-us/suppliers/business-area-procurement/aeronautics/engineering/a83.html



Lockheed Martin Purchase Order (PO)



Parts Classification & Management tool (PCM)

Formerly Design Support
Database(DSD)/Preferred Parts
Handbook (PPH)

What is the Parts Classification & Management (PCM) Tool?

PCM contains the official Engineering source for Engineering procurement requirements of standard parts for Lockheed Martin Aeronautics

- PCM specifies the approval sources and contains specific information that suppliers and Lockheed Martin Aeronautics (Marietta) Receiving and Inspection must follow. PCM also includes stocking and usage instructions for superseded parts.

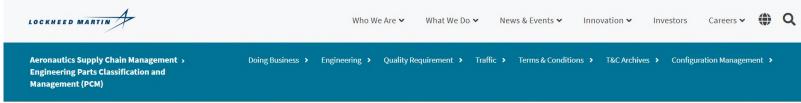
Who needs it and why?

- Build to Print subcontractors/suppliers of Lockheed Martin Aeronautics designed assemblies.
- Information in the PCM 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.
- Instructional "how-to" training is provided within the tool under the Help menu.

How do I get there?

https://www.lockheedmartin.com/en-us/suppliers/business-area-procurement/aeronautics/engineering/engineering-parts-classification-and-

management--pcm-.html



Engineering Parts Classification and Management (PCM)

The PCM-Parts database is a compilation of the Engineering requirements for the purchasing of all standard component parts used for Lockheed Martin Programs. The approved manufacturers listed are approved only for the listed source or part number. The sources or manufacturer part numbers are approved only when made by the manufacturer listed on the drawing revision specified. Callout part numbers that do not appear in this list are not approved for use on the program and have no approved sources.

External users requesting PCM parts database tool access need an EXOSTAR account. Log on to the EXOSTAR site to obtain access or additional information. For any issues or questions for getting access, please work with your LM AERO contractual POC. Existing EXOSTAR accounts holders have no further actions and proceed to Part Classification and Management (PCM) – Parts access request instructions below.

https://portal.exostar.com/idprov/pages/home/dashboard.faces

PART CLASSIFICATION AND MANAGEMENT (PCM) -PARTS ACCESS INSTRUCTIONS Access to PCM-Parts is a two-step procedure.

Access to PCM-Parts is a two-step procedure.

First:

Copy and paste the list below to an email adding the information requested and send to: pcm-comp-engr.gr-aero@lmco.com

- 1. Company name and complete address:
- 2. Requestor's first and last name:
- 3. Email address:
- 4. Telephone number:
- 5. Cage Code:
- 6. List specific Program/s you need access (e.g. C-130, C-5, etc):
- 7. Justification for access (for each program)**:
- 8. Lockheed Martin Aeronautics buyer:
- 9. Lockheed Martin Aeronautics supplied Seller Code:
- 10. User id (same as your Exostar id):
- 11. Role request (PC21 designer or PC23 procurement):



^{**}A justification must be provided for each program for which you are requesting access. Identification of current contract and/or built-to-print assembly number should be included.

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 orders 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 LM Aeronautics programs with the exception of F-16, F-2, and T-50 Programs

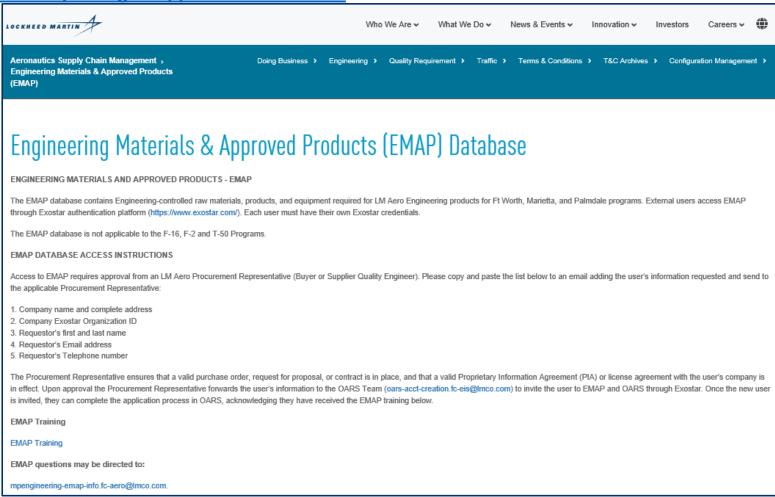
Who needs it and why?

- 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 requirements in the EMAP database.
- The EMAP database is segregated into four Sections:
 - G Marietta
 - F Fort Worth
 - P Palmdale
 - A All Sites

Although usage of the A-section is intended for all programs/ sites, current usage is primarily for F-35 (for all sites); Exceptions to F-35 usage are specified in the Internal and Additional Notes

How do I get access to EMAP?

https://www.lockheedmartin.com/en-us/suppliers/business-area-procurement/aeronautics/engineering/engineering-materials-approved-products-emap-design-support-database.html



How do I get access to EMAP?

- External Suppliers access EMAP through Exostar
 - Supplier Company must set up their own Exostar accounts (https://www.exostar.com/)
 - LM Procurement Rep for Suppliers request invitation to EMAP and OARS in Exostar
 - Suppliers with direct contracts Procurement Rep is the LM Buyer
 - Suppliers who are Approved Processors without direct contract Procurement Rep is the processor's Supplier Quality Rep
 - Supplier requests EMAP account through OARS (Online Account Request System)
 - OARS is also used for EMAP Account Renewals and Reactivations

EMAP Passwords:

- EMAP Accounts cannot be shared
- EMAP Passwords expire after 60 days
- EMAP Accounts are deactivated after 90 days of inactivity
- Password Resets
 - User can set up Security Questions in EMAP to reset their password prior to 60 day expiration
 - Update Security Questions by selecting your name on the upper right of EMAP Home Screen
 - Email mpengineering-emap-info.fc-aero@lmco.com (posted on EMAP Login Screen)

EMAP Usage

LMA-D0006

LMA-D0006 defines the use and contents of the LM Aero Engineering Materials and Approved Products (EMAP) database. LMA-D0006 may be accessed as follows:

- You may request a copy through your LM Buyer through your Data Transfer folder in EDCS.
- If you have access to LMA specifications in EDCS/ Main through Exostar: <u>EDCS/Main Link</u>
- If you have access to JDL through Exostar: <u>JDLLink</u>
 (You will have to copy (right click) and paste the links above after opening the application in Exostar)

EMAP Basic Training:

https://www.lockheedmartin.com/content/dam/lockheed-martin/aero/documents/scm/Engineering/Engineering-Materials---Approved-Products--EMAP----Design-Support-Database--DSD-/EMAP%20Read%20Only%20User%20Training.pptx

QCS-001

Lockheed Martin Aeronautics Controlled Processes & Approved Processors

Earl Review/Update

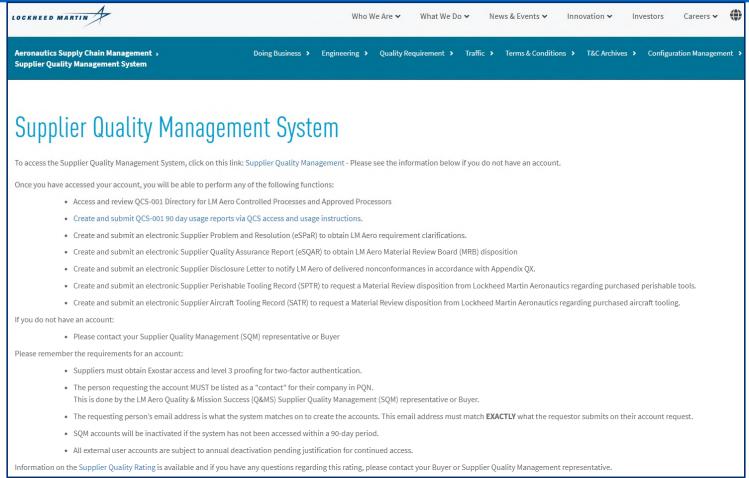
What is QCS-001?

- QCS-001 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.
 - QCS-001 only applies to suppliers as defined in Quality Appendix QX

Note: Requesting additional sources and or approvals to existing sources in QCS-001 is not done on an ESPAR. Requests are handled via the LM Buyer and or Special Process Quality Engineer assigned to a special process source

How do I get to QCS-001?

https://www.lockheedmartin.com/en-us/suppliers/business-areaprocurement/aeronautics/quality-requirements/supplier-quality-management-system.html



How do I request access to QCS-001 (SQM Account)?

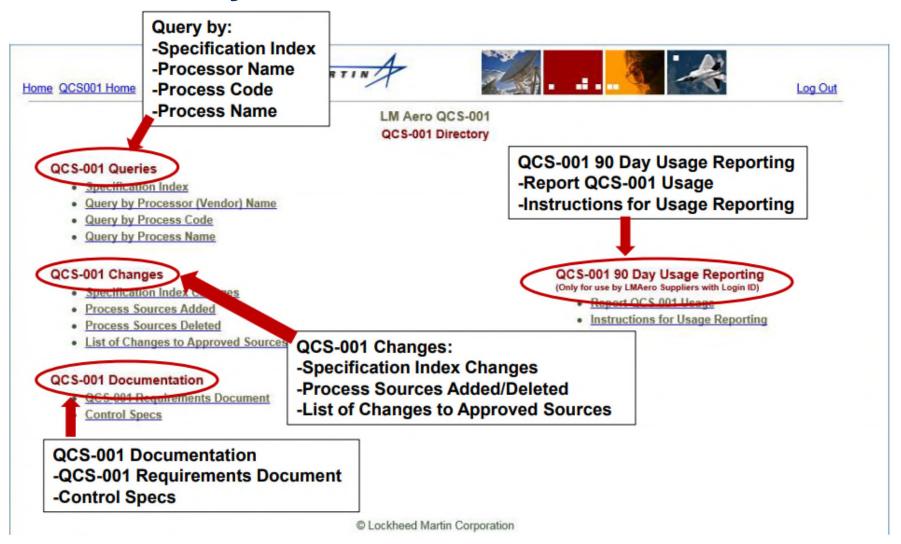
https://sqm.external.lmco.com/AccountRequest.aspx

LOCKHEED MARTIN Supplier Quality Management SQM Request Account Request A New Account This system is the property of this corporation/organization, and is intended for the use of authorized users only. All activities of individuals using this computing system with or without authority, or in excess of their authority, may be monitored and recorded by system personnel. If any such monitoring reveals evidence of criminal activity and is in Complete and submit violation of state and federal law, such evidence may be provided to law enforcement officials for further legal action by this Corporation's organization's Information Protection group. Registration Form Reminder: Information transmitted to a foreign person on this network may be subject to US Export Control laws. Contact your Export Coordinator for assistance. First Name: Last Name: US Citizen: I am a United States citizen Email Address: Phone Number: Enter your LM Aero Supplier Number: Your LM Aero Buyer's Email Address: Next > C Lockheed Martin Corporation

*Email address <u>must</u> match the email that Lockheed Martin Aeronautics has on file as a contact.

Please contact the Special Process Quality Engineer assigned to your facility for additional assistance setting up an account

QCS-001 Directory



Lockheed Martin Aeronautics Specifications

Where can I access LM Aero Specifications?

- 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)
 - Some programs have their own instances of EDCS that foreign external users can access (such as JDL for F-35 and the Airlift instance for AMMM programs)
- 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
- Access is not granted for QCS-001 processors. Specifications are flowed down from suppliers with direct Purchase Orders with Lockheed Martin

How do I get access to Specifications?

https://www.lockheedmartin.com/en-us/suppliers/business-area-procurement/aeronautics/engineering/material-process-specifications-all-programs.html

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

Doing Business > Engineering > Quality Requirement > Traffic > Terms & Conditions > T&C Archives > **Aeronautics Supply Chain** Management > Material & Process Configuration Management > Specifications - All Programs Materials and processes specifications for all programs, including Fort Worth, Marietta, and Palmdale specifications, may be accessed via the EDCS (Enterprise Data/ Collaborative System) Aeronautics/Main instance. For EDCS Main access, external suppliers should send their contact information (as shown below) to their LM Supply Chain Management (SCM) representative, who will verify the requestor's need to know, and that the appropriate LM Proprietary Information Agreement(s) (PIA) are in place with the . First Name, Middle Initial, Last Name (Please include any suffix): · External Email Address: · Phone Number: Supplier's Company Name: Supplier's Company Address: • Supplier's Company Exostar Organization ID: · Supplier's Company DUNS Number (if available): Name of Application(s) External Supplier requires access to: Cage code for Application(s) External Supplier requires access to: . Name of OARS Resource(s) External Supplier requires access to: For F-22 RDL access, requestors must complete a CSAR form rather than submitting the information above. Upon approval of the requestor's access, the LM SCM representative will send the requestor's information to the following: All other programs: OARS Team Each individual requestor must have an Exostar account in order to access EDCS Main. If the requestor does not have an account, the LM SCM representative's request will initiate the Exostar account process. Once the Exostar account is activated, the requestor will be prompted to request M&P access via the electronic Data Access Request form. Each user at a company must complete an access request, since access is granted on an individual (not company) basis, and account login information may not be shared between users. NOTE: DOD Classified Specifications are not available through EDCS. Hard copies are available through the specific program offices. Please contact your buyer. Questions, comments or requests for general information regarding access to EDCS should be directed to the EDCS Admin Team.

Points of Contact

Contact Information

Purchase Order (PO)

- Contact your Lockheed Martin Aeronautics Buyer
- Parts Classification & Management (PCM)
- Contact Atul Kumbhani <u>atul.kumbhani@lmco.com</u>
- Engineering Materials & Approved Products (EMAP)
- Contact <u>mpengineering-emap-info.fc-aero@lmco.com</u>
- QCS-001 (Controlled Processes & Approved Processors)
- Contact Earl Pruett (817) 777-0348 earl.j.pruett@lmco.com
- Material & Process Specifications (EDCS-Enterprise Data/Collaborative System)
- Contact edcs.coreadmins.fc-aero@lmco.com

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