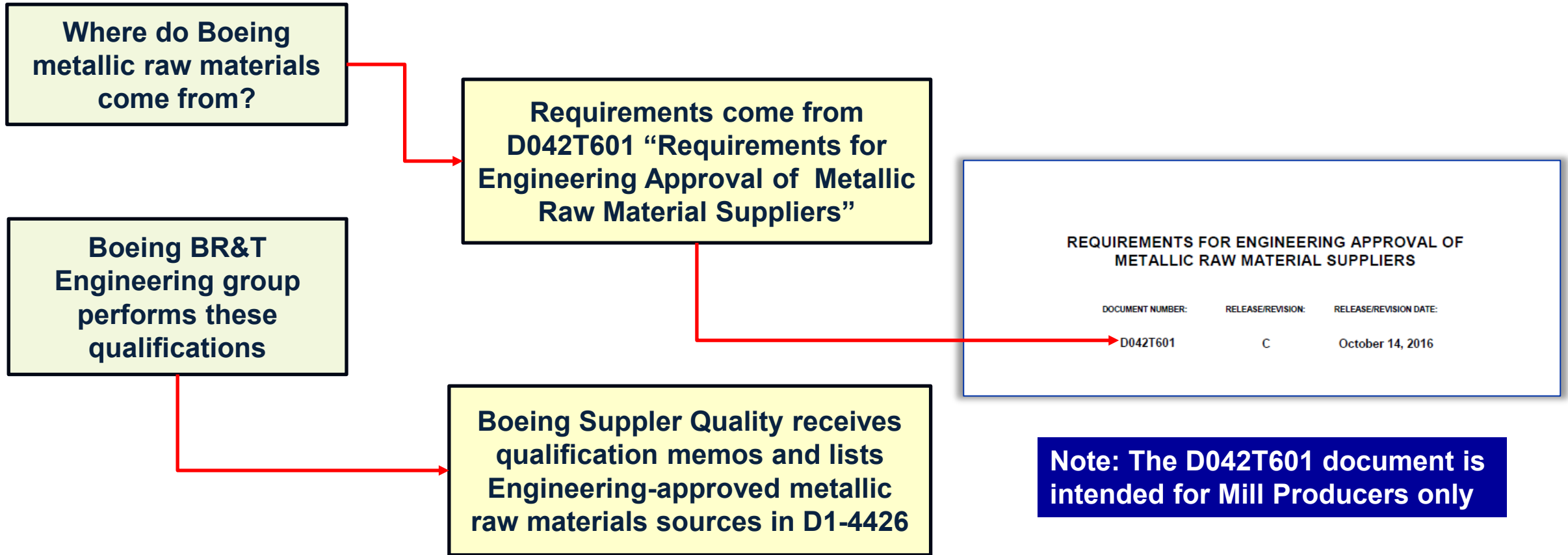


Boeing D1-4426 Metallic Raw Materials

Understanding and Verifying BR&T D042T601 Approved Metallic Mill Sources listed in D1-4426

Publication date 4/4/2025



Note: The D042T601 document is intended for Mill Producers only

Note: Metallic material purchasers and consumers must follow D042T601 requirements in D1-4426 for approved source selection

D1-4426 is a web-based document; go to <http://active.boeing.com/doingbiz/d14426/>

Review the D1-4426 User Instructions

BOEING Doing Business with Boeing
Approved Process Sources D1-4426
Revision: MN Effective: 17/Dec/2024

Approved Process Sources

This D1-4426 web site specifies how The Boeing Company assures that special processes, production of raw material and the procurement of selected part standards are performed in accordance with contractually established engineering specifications, drawings and quality requirements.

TO NAVIGATE THE D1-4426 DOCUMENT: Use the left menu to access all document sections

The following links are provided for reference only to determine specification revision level and departure information for certain specifications. These links could contain specifications not in the D1-4426 Specification Index Listing. (Revision information only - **not** a link to access copies of the specifications)

- DoD Index of Specifications and Standards

*The following are all PDF * documents:*

NOTE: Icons, such as "document with a red X" or a "padlock," are for Boeing use only and has no bearing on the specification status.

- BAC Specification Revision Index
- BAC Specification Revision Past 30 Day Revisions
- BMS Specification Revision Index
- BSS Specification Revision Index
- El Segundo Process Specification Index
- Finish Documents
- HP Revision Index
- HP Specification Past 30 Day Revisions
- Huntington Beach HBPS Revision Index
- Long Beach DMS Revision Index
- Long Beach DPS Past 30 Day Revisions
- Long Beach DPS Revision Index
- Philadelphia Index
- Space Exploration Material Index
- Space Exploration Process Index
- St. Louis Process Specification Index
- St. Louis Specification Past 30 Day Revisions
- St. Louis Material Index

D1-4426 Web Site [Content Owner](#)

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User Instructions § 1.4: shows that D1-4426 identifies metallic materials that require Boeing approval in accordance with D042T601

1.4 Identifies metallic materials that require Boeing approval of non-U.S.A. suppliers and all suppliers of Titanium ingot (i.e. non-U.S.A. and U.S.A.) in accordance with D042T601 ("Requirements for Engineering Approval of Metallic Raw Material Suppliers") and DMS2201 ("Procurement from Foreign Sources - Metallic Raw Materials"). (Applicable to codes 600 - 699, Metallic Raw Materials – Non-USA & Titanium Ingot (All)).

Metallic raw material supplier approval is applicable to Boeing Commercial Airplane Suppliers and C-17.

Note that Titanium Ingot production is controlled globally, but other code listings are for non-USA sources only

User Instructions § 4.9 Outlines the 600 Codes series, Limitations, and BR&T Approval Memo Process

600 series codes identify those metallic raw materials that require Boeing Engineering approval. Approval to these codes is required only for non-U.S.A. raw material suppliers and all titanium ingot suppliers (non-U.S.A. and U.S.A.) for Boeing Commercial Airplane Group products excluding Long Beach Division.

NOTE: Approval requirements DO NOT APPLY for U.S.A. titanium ingot produced, certified and procured prior to 6/1/2000.

Identified are mill products by specification that require approval and ingot by alloy that require approval when used for the mill products specified. Suppliers approved to these codes shall be surveyed to the requirements of D042T601 by Boeing Engineering. Approval and listing will be made upon receipt of a memo from Boeing Engineering. Code numbers will be modified to show changes of materials referenced in D042T601.

Titanium Material Example

Example: Part 123W0000-XX made from AMS4928 6AL-4V Titanium Bar Product; which requires BR&T approved sources per D042T601 Table 1

Approved Mill Sources are listed in D1-4426 Code 670 for the Ingot primary Product Form, and Code 671 for any non-USA sources of final Bar Product Form; both are required

Per User Instructions 6Al-4V Ingot (code 670) applies world-wide for Ingot per D042T601; and AMS4928 Bar (code 671) applies for non-USA sources of AMS4928 Bar

Click on 600 Codes here

Process Code	Process Description
000 - 099	Quality System
100 - 199	Thermal Processes
200 - 299	Welding and Brazing
300 - 399	Finishes and Coatings
400 - 499	Nondestructive Test Processes
500 - 599	Fabrication
600 - 699	Metallic Raw Materials - Non USA & Titanium Ingot (All)
700 - 799	Composites
800 - 899	Support Testing for Processes, Certifications, and Qualifications
900 - 999	Division Unique Requirement
1000 - 1099	Raw Materials with Suppressed Purchaser Testing

These 600 Code links identify the Engineering-approved sources

Process Code	Nadcap Commodity	Nomenclature	Specification Number	Specification Title
670	No Nadcap Commodity Code	6AL-4V Ingot	TITANIUM	6Al-4V Ingot
671	No Nadcap Commodity Code	6Al-4V Ti Stock Block Bar and Die Forgings	AMS 4928	6Al-4V Ti Stock Block Bar and Die Forgings

Titanium Material Example

Approved Process Sources D1-4426

Step 1:
Identify the applicable Code 670 Ingot source from listings

Process Code	Nadcap Commodity	Nomenclature	Specification Number	Specification Title
670	No Nadcap Commodity Code	6AL-4V Ingot	TITANIUM	6AI-4V Ingot

Click on Code 670 to see approved sources

Step 2:
Review/Select approved Ingot sources from Code 670 listings

- [Boeing Approved Process Sources - Home](#)
- [Nadcap Accreditation](#)
- [Notes & Exceptions](#)
- [Revision Summary](#)
- [User Instructions & Requirements](#)
- [Approved Sources Flow Chart](#)
- [Approved Processors](#)
- [Geographic APL](#)
- [Process Code Listing](#)
- [Specification Index Listing](#)
- [Limitation Index](#)
- [Boeing Contacts](#)
- [Authorized Distributors of Aircraft Bearings](#)
- [Authorized Distributors of Designated Fasteners](#)
- [Frequently Asked Questions](#)

Document D1-4426 - Process and Processor by Location

Click on Processor Codes to see individual site approvals and addresses. Also, these approved Mills sources may have product limitation notes in the Doc Notes area

Process Code: 670
Nomenclature: 6AI-4V Ingot
Specification Number: TITANIUM
Specification Title: 6AI-4V Ingot

Country	State	Processor	Processor Name
CHINA		BE10323107	BAOJI TITANIUM INDUSTRY CO LTD
FRANCE		BE10518889	ECOTITANIUM
JAPAN		BE10364345	KOBE STEEL LTD TITANIUM DIV
JAPAN		BE10377885	TOHO TITANIUM CO LTD
KAZAKHSTAN		BE10409046	UKTMP JSC
KOREA, REPUBLIC OF		BE10420005	KPC METAL CO LTD
UNITED KINGDOM	ENG	BE10405506	TIMET UK LTD
UNITED STATES	MI	BE10040115	HOWMET CORP
UNITED STATES	NC	BE10066860	ATI SPECIALTY MATERIALS
UNITED STATES	NV	BE10031843	TIMET
UNITED STATES	OH	BE10029768	RTI NILES
UNITED STATES	OR	BE10042781	ATI SPLCTY ALLOYS & COMPONENTS
UNITED STATES	OR	BE10314562	ATI SPECIALTY ALLOYS & COMPONENTS
UNITED STATES	PA	BE10047200	THE PERRYMAN COMPANY
UNITED STATES	PA	BE10539871	THE PERRYMAN COMPANY
UNITED STATES	PA	BE10068627	TIMET POWDERED METALS LLC
UNITED STATES	WA	BE10363070	ATI PRIMARY TITANIUM OPERATIONS

Titanium Material Example

Step 3:
 Select approved non-USA AMS4928 Titanium Bar sources from Code 671 listings; or utilize USA source (no listings)

Process Code	Nadcap Commodity	Nomenclature	Specification Number	Specification Title
671	No Nadcap Commodity Code	6Al-4V Ti Stock Block Bar and Die Forgings	AMS 4928	6Al-4V Ti Stock Block Bar and Die Forgings

Click on Code 671 to see approved sources

Step 4:
 Review/Select approved Bar sources from Code 671 listings

Important Note
 Material production in Steps #1 thru #4 could be from one common Producer, or multiple Producer sites. Users must verify the requirements to all of the producer's certification documents

Click on Processor Codes to see individual site approvals and addresses. Again, check for any product limitation notes in the Doc Notes area

Process Code: 671
 Nomenclature: 6Al-4V Ti Stock Block Bar and Die Forgings
 Specification Number: AMS 4928
 Specification Title: 6Al-4V Ti Stock Block Bar and Die Forgings

Country	State	Processor	Processor Name
AUSTRIA		BE10048036	VOESTALPINE BOHLER AEROSPACE GMBH & CO KG
CHINA		BE10323107	BAOJI TITANIUM INDUSTRY CO LTD
CHINA		BE10050456	SHAANXI HONG YUAN AVIATION FORGING CO LTD
FRANCE		BE10057842	AUBERT & DUVAL ISSOIRE PLANT
FRANCE		BE10048326	AUBERT ET DUVAL
FRANCE		BE10274138	AUBERT ET DUVAL
FRANCE		BE10409217	UKAD
GERMANY		BE10048063	OTTO FUCHS
INDIA		BE10366061	BHARAT FORGE LIMITED
ITALY		BE10420555	PIETRO ROSA TBM S R I
JAPAN		BE10311386	DAIDO STEEL CO LTD
JAPAN		BE10364345	KOBE STEEL LTD TITANIUM DIV
MEXICO		BE10421522	FRISA
UNITED KINGDOM	ENG	BE10048307	METTIS AEROSPACE LTD
UNITED KINGDOM	ENG	BE10405506	TIMET UK LTD
UNITED KINGDOM	ENG	BE10361813	TIMET UK LTD

Aluminum & Steel Alloy Material Selection

Note:
Aluminum and Steel Alloys source selections will be similar to Titanium verifications, **but when only USA sources are utilized, there will be no D1-4426 listings**

Process Code	Nadcap Commodity	Nomenclature	Specification Number	Specification Title
600	No Nadcap Commodity Code	2014 Ingot	ALUMINUM	2014 Ingot
602	No Nadcap Commodity Code	Aluminum Alloy 2124, Plate	AMS-QQ-A-250/29	Aluminum Alloy 2124, Plate

Review and select non-USA sources as needed

Detail Information for Process Code number: 600

Process Code: 600
Nomenclature: 2014 Ingot
Specification Number: ALUMINUM
Specification Title: 2014 Ingot

Example non-USA Producer of 2014 Aluminum Alloy Ingot

Country	State	Processor	Processor Name
INDIA		BE10372341	HINDALCO ALMEX AEROSPACE LTD

Click on Required Codes to see non-USA sources of Ingot and final product forms

Click on Processor Code(s) to see individual site approvals and addresses

Detail Information for Process Code number: 602

Process Code: 602
Nomenclature: Aluminum Alloy 2124, Plate
Specification Number: AMS-QQ-A-250/29
Specification Title: Aluminum Alloy 2124, Plate

Example non-USA Producer of 2014 Aluminum Alloy Plate final product form

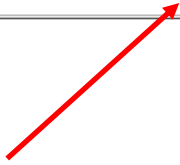
Country	State	Processor	Processor Name
GERMANY		BE10048081	Novelis Koblenz GmbH

Important Note
When procuring Metallic Material final product forms from USA sources, verify if Ingot Producer is also a USA source. If non-USA Ingot was used, purchaser must verify an approved source was used by reviewing the Mill Producer's Certificate of Conformity documents

Metallic Material Supplier Limitations

Review Doc Notes column for applicable 600 code and make sure source selected is fully approved for size, type, and heat treat condition of material.

Process Code	*Nadcap Commodity	Limitation Codes	Doc Notes	Nomenclature	Specification Number
002	AQS	None	None	Quality Management System (QMS) as defined in D1-4426 Processor Requirements Sec 6.16.2	Quality System
436	NDT	None	.	Ultrasonic Inspection of Flat Surface Shapes	MIL-STD-2154
436B	NDT	None	.	Ultrasonic Inspection of Flat Surface Shapes	AMS-STD-2154
437	NDT	None	.	Ultrasonic Inspection of Rounds - Shapes Req-d Compensation	MIL-STD-2154
437A	NDT	None	.	Ultrasonic Inspection of Rounds and Shapes	AMS-STD-2154
670	No Nadcap Commodity Code	None	.	6Al-4V Ingot	TITANIUM
671	No Nadcap Commodity Code	None	Billet/forged stock all sizes. Also, rolled bar up to 4.00" in Diameter. (Does not include block or die forgings)	6Al-4V Ti Stock Block Bar and Die Forgings	AMS 4928
672	No Nadcap Commodity Code	None	Billet/forged stock all sizes. Also, Bar up to 2.00" in Diameter.(Does not include block or die forgings)	6Al-4V Ti Stock Block Bar and Die Forgings	MIL-T-9047
672A	No Nadcap Commodity Code	None	Billet/forged stock all sizes. Also, rolled bar up to 4.00 inches in diameter. (Does not include die forgings)	6Al-4V Titanium Alloy Bars, Forgings, and Forging Stock	AMS 6931



Example non-USA Producer of Titanium Ingot and Bar with product form and size limitations

Metallic Material Supplier- No Approvals Listed in D1-4426

When no Engineering-approved sources are listed for the applicable 600 code, then material procurement must be from a USA source (no listings)

Optionally, suppliers can request through their BCA Purchasing Agent or customer, a D042T601 qualification request of capable mills within their region

Examples of codes that do not have any approved non-USA Producers

Document D1-4426 - Process and Processor by Location

Detail Information for Process Code number: 658

Process Code: 658
Nomenclature: 9Ni-4Co-.30C Ingot
Specification Number: STEEL
Specification Title: 9Ni-4Co-.30C Ingot

There are NO Approved Processors for Process Code " at this time.

Detail Information for Process Code number: 675A

Process Code: 675A
Nomenclature: 6Al-4V Titanium Sheet, Strip, and Plate
Specification Number: AMS 4904
Specification Title: 6Al-4V Titanium Sheet, Strip, and Plate

There are NO Approved Processors for Process Code " at this time.

D1-4426 Appendix D; Compliance on Metallic Material Purchasing

Important Reminder: Purchasers are required to flow requirements specified in D1-4426 Appendix D, on 600 code Metallic Material purchase orders, with special attention as follows:

Appendix D, Section I Required Information Item 5

*Part number and part name, or **product form description of each item...Material/Alloy Designation or Specification:** Use standard alloy designations, such as 7075 Aluminum, 4130 alloy steel, 304L stainless steel or AMS. Aluminum sheet shall be listed as clad or bare. Trade names or generic material designations can be misleading and are not accurate. Example: Air harden tool steel, low carbon steel, 7000 series, chrome-moly, and 300 series all cover many different alloys with different heat treat designations.*

Appendix D, Section I Required Information Item 11

*Processor must be, and/or use D1-4426 approved sources (<http://www.boeingsuppliers.com/d14426/>)
It is the responsibility of the company issuing the purchase order to verify that all Processors are approved and listed in D1-4426 for those processes contracted. These requirements must be flowed down to all subtiers / processors utilized.*

Purchasers of 600 code Metallic Raw Materials must flow down D1-4426 explicitly on their PO's to all Metallic Material Distributors and Producers. There are no exceptions to this requirement!

