

# LIEBHERR

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Ref: **MPH0192**

Issue: **07**

Date: **2.9.2022**

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## Supplier Qualification process

Homologation de la société ELEMENT - Site de Colomiers (F51141) pour la réalisation d'essais et d'analyses inclus dans le périmètre d'accréditation Nadcap MTL (Materials Testing Laboratories)

**SYSTEM** : **SYSTEME MULTI APPLICATION**  
**CREATED BY** : **Christelle CABANDE (LTS), Manufacturing Quality Engineer**

### Liebherr Approval :

SIGNATURE-TYPE	ROLE	NAME	DATE	SIGNATURE
Approve	Methods Coordinator	Laurent AUSSEL (LTS)	02 Sep 2022	Electronic Signature
Approve	Material Engineer	Christelle CABANDE (LTS)	02 Sep 2022	Electronic Signature
Authorize	Supplier Quality Engineer	Marie TOULOUZE (LTS)	15 Sep 2022	Electronic Signature

### External Approval (if applicable only)

SIGNATURE-TYPE	ROLE	NAME	DATE	SIGNATURE

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### METHODES PROCEDURE D'HOMOLOGATION (MPH)


#### Homologation de la Société ELEMENT - Site de COLOMIERS (F51141)

pour la réalisation d'essais et d'analyses inclus dans le périmètre d'accréditation Nadcap MTL (Materials Testing Laboratories)

-

#### Company ELEMENT- Site COLOMIERS (F51141) Homologation

for realization of testing and analysis included in scope of Nadcap MTL (Materials Testing Laboratories) accreditation

	Name	Company / Department or Fonction	Approval Date	Signature
Written by	C. CABANDE	LIEBHERR / Correspondant Qualité Laboratoire Matériaux		
Approved by	L. AUSSEL	LIEBHERR / Responsable Laboratoire Matériaux		
Approved by	G. MARAVAL	ELEMENT / Quality manager	01/09/2022	Gérard MARAVAL Quality Manager 

Internal release	Oui / Non	External release	Oui / Non	Restricted release	Oui / Non
Comments					

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##### Site de Campsas

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Société par Actions Simplifiée  
au Capital de 15 000 000€  
SIREN 552 016 834 RCS TOULOUSE  
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## RECAPITULATIF DES EVOLUTIONS / EVOLUTION SUMMARY

### NOTA :

*Le visa pour approbation implique un accord sur le fond et sur la forme du document.*

*Approval of this document impose an agreement of both form and substance*

Issue	Date	Evolutions description
01	23/08/2017	CREATION
02	06/12/2018	MISE A JOUR DU PERIMETRE D'ACCREDITATION NADCAP
03	16/09/2020	MISE A JOUR DU PERIMETRE D'ACCREDITATION NADCAP
04	25/11/2021	PROLONGATION CERTIFICATION NADCAP
05	18/02/2022	PROLONGATION CERTIFICATION NADCAP
06	18/05/2022	PROLONGATION CERTIFICATION NADCAP
07	01/09/2022	MISE A JOUR DU PERIMETRE D'ACCREDITATION NADCAP

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### PARTIE A / FRANÇAIS

## 1. OBJET ET DOMAINE D'APPLICATION

Ce document d'homologation autorise la réalisation suivante :

- **Société** : ELEMENT
- **Site** : COLOMIERS
- **LTS Code Fournisseur** : F51141
- **Adresse** : 3, avenue André-Marie Ampère – 31770 COLOMIERS - FRANCE
- **Prestations soumises à l'accréditation Nadcap** : scope MTL (Materials Testing Laboratories), listées en §.2

Conformément à la procédure LTS-PRO-DEV-3003, cette homologation :

- **Niveau d'homologation** : Niveau 1
- **Pour une durée de** : 18 mois (expiration de l'accréditation Nadcap MTL)
- **Jusqu'au** : 31/05/2023

Le site applicateur homologué s'engage à réaliser et à contrôler les pièces suivant :

- Les conditions de cette MPH
- les exigences normatives et réglementaires en vigueur
- les dispositions et exigences spécifiques de LIEBHERR AEROSPACE TOULOUSE : MFT, PRO ainsi que FI, MNT, RT... pour les homologations internes

Le site applicateur homologué s'engage à respecter les exigences de la procédure **LTS-PRO-DEV-0069** «Procédés spéciaux de fabrication et contrôle non destructif » au dernier indice en vigueur.

Aucune modification des procédés de réalisation et de contrôle ne peuvent être effectuées sans l'accord préalable écrit de LIEBHERR AEROSPACE TOULOUSE S.A.S et la mise à jour du présent document.

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## 2. PERIMETRE D'HOMOLOGATION



### SCOPE OF ACCREDITATION

#### Materials Testing Laboratories

Element Toulouse  
3, Avenue André-Marie Ampère  
Colomiers, 31770  
France

This certificate expiration is updated based on periodic audits. The current expiration date and scope of accreditation are listed at: [www.eAuditNet.com](http://www.eAuditNet.com) - Online QML (Qualified Manufacturer Listing).

In recognition of the successful completion of the PRI evaluation process, accreditation is granted to this facility to perform the following:

#### AC7000 - AUDIT CRITERIA FOR NADCAP ACCREDITATION

#### AC7101/1 Rev G - Nadcap Audit Criteria for Materials Testing Laboratories – General Requirements for All Laboratories (to be used on audits on/after 5 May 2019)

#### AC7101/3 Rev D - Nadcap Audit Criteria for Materials Testing Laboratories – Mechanical Testing (to be used on audits on/after 4 December 2016)

- (A) Room Temperature Tensile
- (A1) Room Temperature Tensile with Elastic (Young's) Modulus
- (B) Elevated Temperature Tensile
- (C) Stress Rupture
- (CT) Compression Testing
- (N) Impact
- (O) High Cycle Fatigue
- (P) Fracture Toughness
- (XA) Creep
- (XE) Crack Propagation/Crack Growth Testing
- (Y) Low Cycle Fatigue

#### AC7101/4 Rev F - Nadcap Audit Criteria for Materials Testing Laboratories – Metallography and Microindentation Hardness (to be used on/after 14 August, 2016)

- (L0) Metallographic Evaluation
- (L11) Grain Size
- (L12) Inclusion Rating
- (L7) Near Surface Examinations – IGA, IGO
- (L8) Near Surface Examinations – Alpha Case: Wrought Titanium
- (L9) Near Surface Examinations – Alpha Case: Cast Titanium
- (XL) Macro Examination

#### AC7101/6 Rev D - Nadcap Audit Criteria for Materials Testing Laboratories – Corrosion (to

t-fm-0004

29-May-20

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Element Toulouse  
Colomiers, France

#2

be used on/after 1 July 2018)

(Q) Salt Spray

AC7101/7 Rev D - Nadcap Audit Criteria for Materials Testing Laboratories – Mechanical  
Testing Specimen Preparation (to be used on audits on/after 15 May 2016)

(Z) Standard Specimen Machining

(Z1) Low Stress Grinding

(Z2) Low Stress Grinding and Polishing

(Z3) Cast Specimens

(Z4) Special Preparation

ISO/IEC - Currently accredited by an ILAC approved source

Lab Type - Lab Type

Captive

Independent

t-fm-0004

20-May-20

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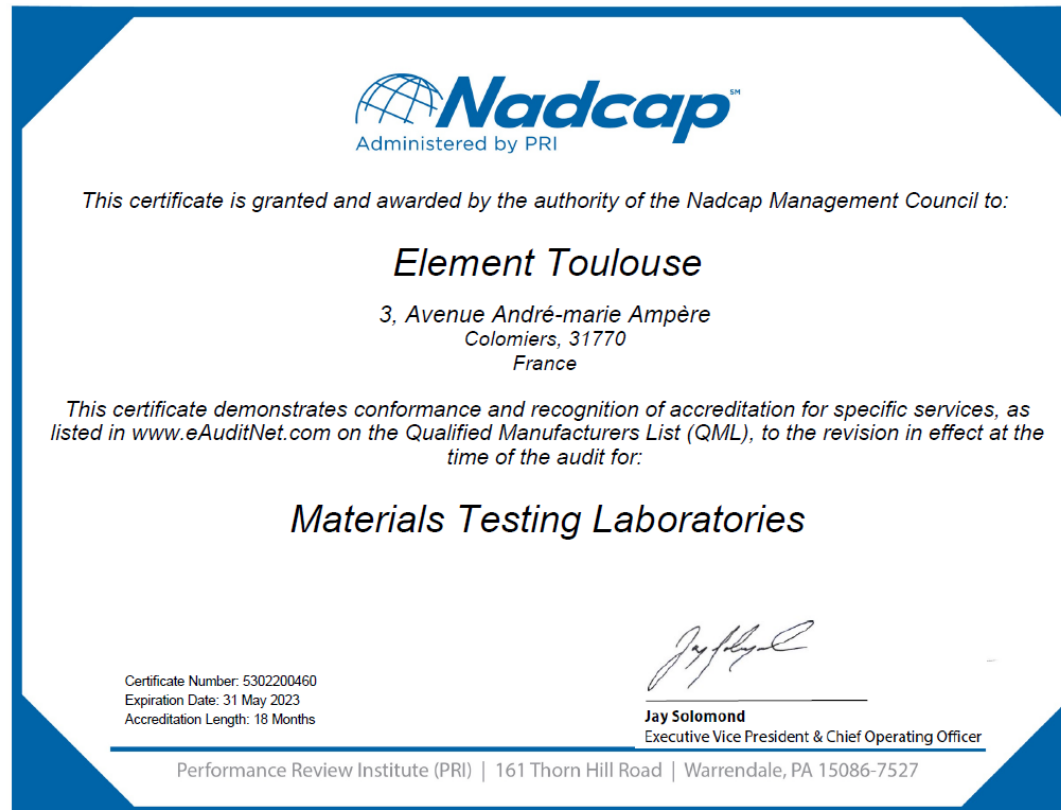
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### 3. DOCUMENTS DE PREUVE DE VALIDATION



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#### 4. MATRICE DE CONFORMITE AUX NORMES

CONFORMITY MATRIX LEVEL 1 - LTS-PRO-DEV-3003 METALLIC MATERIALS					
Category	Test type	Applicable standard	Supplier action		
			Standard used (tick)	Comments (other standard if not in the list)	
Mechanical Testing	(A) Room temperature tensile	ASTM E8/E8M	x		
		ASTM B557	x		
		EN 2002-001	x		
		ISO 6892-1	x		
	(A1) Room temperature tensile with Elastic (Young's) modulus	ASTM E111			
		EN 2002-001	x		
	(B) Elevated Temperature Tensile	ASTM E21	x		
		EN 2002-002	x		
		ISO 6892-2	x		
	(C) Stress rupture	ASTM E139	x		
		ASTM E292	x		
		EN ISO 204	x		
	(CT) Compression testing	EN 2002-005	x		
		ASTM E9	x		
	(N) Impact	ASTM E23	x		
		ISO 148-1	x		
		EN 2003-2			
	(O) High Cycle Fatigue	ASTM E466	x		
		ISO 1099	x		
		EN 3987			
(P) Fracture toughness	EN 6072	x			
	ASTM E399	x			
	ISO 12737	x			
(XA) Creep	EN 2002-23				
	ASTM E139	x			
	EN ISO 204	x			
(XE) Crack propagation / Crack growth testing	EN 2002-005	x			
	ASTM E647	x			
	ISO 12108	x			
(Y) Low Cycle Fatigue	EN 3873				
	ASTM E606	x			
	ISO 12106	x			
	EN 3988				
Specimen preparation	(Z) Standard Specimen Machining	ASTM A370	x		
	(Z1) Low stress grinding	Customer requirements	x		
	(Z2) Low stress grinding and polishing	Customer requirements	x		
	(Z3) Cast specimen	Customer requirements	x		
	(Z4) Special Preparation	Customer requirements	x		

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### CONFORMITY MATRIX LEVEL 1 - LTS-PRO-DEV-3003 METALLIC MATERIALS

Category	Test type	Applicable standard	Supplier action	
			Standard used (tick)	Comments (other standard if not in the list)
Metallography and Microindentation hardness	(L0) Metallographic Evaluation	ASTM E3	x	
		ASTM E407	x	
	(L11) Grain size	ASTM E112	x	
		ISO 643	x	
	(L12) Inclusion rating	ASTM E45	x	
		EN 2951		
	(L7) Near surface examinations - IGA, IGO	ISO 4967		
		EN 2716	x	Partie observation
		ASTM G110	x	Partie observation
	(L8) Near surface examinations - Alpha case: Wrought titanium	ASTM F2111	x	
EN 2003-009		x		
(L9) Near Surface examinations - Alpha case: cast titanium	EN 2003-009	x		
(XL) Macro Examination	ASTM A604			
	ASTM E340	x		
Corrosion	(Q) Salt spray	ASTM B117	x	
		ISO 9227	x	

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### PART B / ENGLISH

## 1. OBJECT AND SCOPE OF APPLICATION

That homologation document authorize to proceed :

- **Company** : ELEMENT
- **Site** : COLOMIERS
- **LTS Supplier Code** : F51141
- **Adress** : 3, avenue André-Marie Ampère – 31770 COLOMIERS - FRANCE
- **Services included in the Nadcap accreditation** : MTL scope (Materials Testing Laboratories), listed in §.2

Following guidelines of procedure LTS-PRO-DEV-3003, this homologation:

- **Homologation level**: Level 1
- **For a duration of**: 18 months (expiry of Nadcap MTL accreditation)
- **Until**: 05/31/2023

Homologated applicator site commits to producing and controlling the process following :

- Herewith MPH conditions
- Up to date normative and regulatory requirements
- LIEBHERR AEROSPACE TOULOUSE specific requirements and disposals : MFT, PRO as well as FI, MNT, RT... for LTS internal homologations

Homologated applicator site commits to comply with the requirements of the LTS-PRO-DEV-0069 “ Specials processes manufacturing and non destructive testing” at the latest revision

No production nor control process modification can be implemented without a prior LIEBHERR AEROSPACE TOULOUSE S.A.S written agreement and an update of this present MPH.

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## 2. SCOPE OF APPROVAL



### SCOPE OF ACCREDITATION

#### Materials Testing Laboratories

Element Toulouse  
3, Avenue André-marie Ampère  
Colomiers, 31770  
France

This certificate expiration is updated based on periodic audits. The current expiration date and scope of accreditation are listed at: [www.eAuditNet.com](http://www.eAuditNet.com) - Online QML (Qualified Manufacturer Listing).

In recognition of the successful completion of the PRI evaluation process, accreditation is granted to this facility to perform the following:

#### AC7000 - AUDIT CRITERIA FOR NADCAP ACCREDITATION

##### AC7101/1 Rev G - Nadcap Audit Criteria for Materials Testing Laboratories – General Requirements for All Laboratories (to be used on audits on/after 5 May 2019)

##### AC7101/3 Rev D - Nadcap Audit Criteria for Materials Testing Laboratories – Mechanical Testing (to be used on audits on/after 4 December 2016)

- (A) Room Temperature Tensile
- (A1) Room Temperature Tensile with Elastic (Young's) Modulus
- (B) Elevated Temperature Tensile
- (C) Stress Rupture
- (CT) Compression Testing
- (N) Impact
- (O) High Cycle Fatigue
- (P) Fracture Toughness
- (XA) Creep
- (XE) Crack Propagation/Crack Growth Testing
- (Y) Low Cycle Fatigue

##### AC7101/4 Rev F - Nadcap Audit Criteria for Materials Testing Laboratories – Metallography and Microindentation Hardness (to be used on/after 14 August, 2016)

- (L0) Metallographic Evaluation
- (L11) Grain Size
- (L12) Inclusion Rating
- (L7) Near Surface Examinations – IGA, IGO
- (L8) Near Surface Examinations – Alpha Case: Wrought Titanium
- (L9) Near Surface Examinations – Alpha Case: Cast Titanium
- (XL) Macro Examination

##### AC7101/6 Rev D - Nadcap Audit Criteria for Materials Testing Laboratories – Corrosion (to

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29-May-20

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Element Toulouse  
Colomiers, France

#2

be used on/after 1 July 2018)

(Q) Salt Spray

AC7101/7 Rev D - Nadcap Audit Criteria for Materials Testing Laboratories – Mechanical  
Testing Specimen Preparation (to be used on audits on/after 15 May 2016)

(Z) Standard Specimen Machining

(Z1) Low Stress Grinding

(Z2) Low Stress Grinding and Polishing

(Z3) Cast Specimens

(Z4) Special Preparation

ISO/IEC - Currently accredited by an ILAC approved source

Lab Type - Lab Type

Captive

Independent

t-fm-0004

20-May-20

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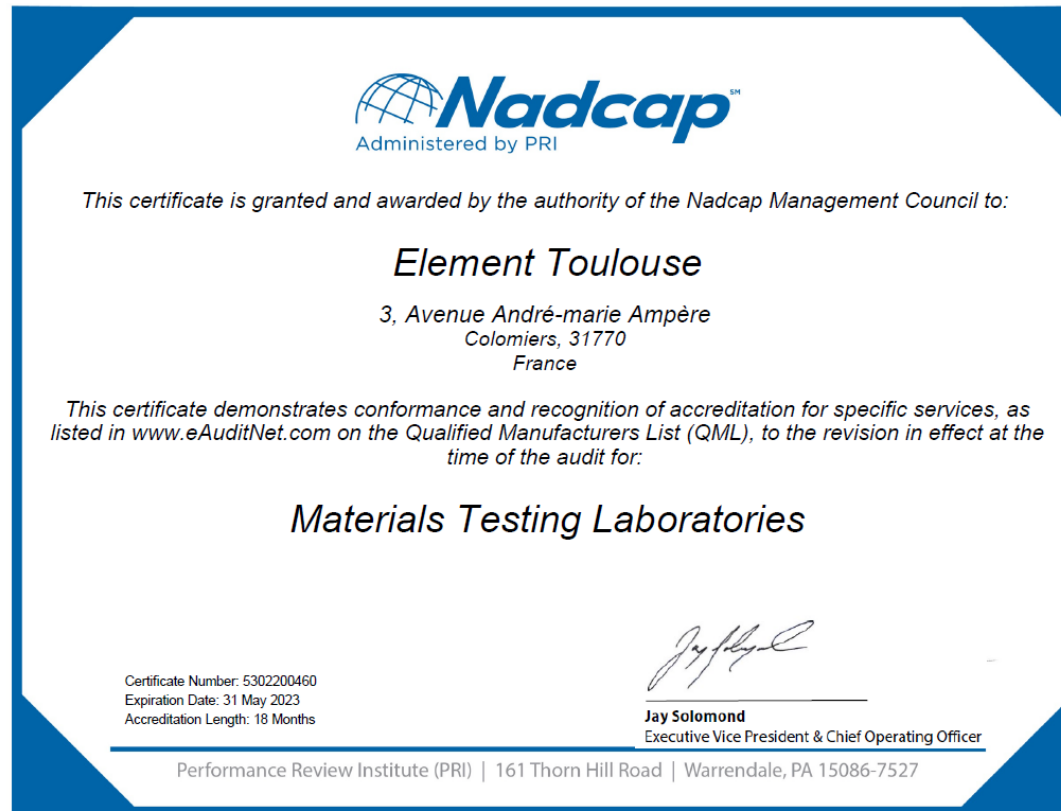
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### 3. VALIDATION PROOF DOCUMENTS



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## 4. STANDARD CONFORMITY MATRIX

CONFORMITY MATRIX LEVEL 1 - LTS-PRO-DEV-3003 METALLIC MATERIALS				
Category	Test type	Applicable standard	Supplier action	
			Standard used (tick)	Comments (other standard if not in the list)
Mechanical Testing	(A) Room temperature tensile	ASTM E8/E8M	x	
		ASTM B557	x	
		EN 2002-001	x	
		ISO 6892-1	x	
	(A1) Room temperature tensile with Elastic (Young's) modulus	ASTM E111		
		EN 2002-001	x	
	(B) Elevated Temperature Tensile	ASTM E21	x	
		EN 2002-002	x	
		ISO 6892-2	x	
	(C) Stress rupture	ASTM E139	x	
		ASTM E292	x	
		EN ISO 204	x	
		EN 2002-005	x	
	(CT) Compression testing	ASTM E9	x	
	(N) Impact	ASTM E23	x	
		ISO 148-1	x	
	(O) High Cycle Fatigue	EN 2003-2		
		ASTM E466	x	
		ISO 1099	x	
		EN 3987		
	(P) Fracture toughness	EN 6072	x	
		ASTM E399	x	
		ISO 12737	x	
	(XA) Creep	EN 2002-23		
ASTM E139		x		
EN ISO 204		x		
(XE) Crack propagation / Crack growth testing	EN 2002-005	x		
	ASTM E647	x		
	ISO 12108	x		
	EN 3873			
(Y) Low Cycle Fatigue	ASTM E606	x		
	ISO 12106	x		
	EN 3988			
	EN 3874			
Specimen preparation	(Z) Standard Specimen Machining	ASTM A370	x	
	(Z1) Low stress grinding	Customer requirements	x	
	(Z2) Low stress grinding and polishing	Customer requirements	x	
	(Z3) Cast specimen	Customer requirements	x	
	(Z4) Special Preparation	Customer requirements	x	

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### CONFORMITY MATRIX LEVEL 1 - LTS-PRO-DEV-3003 METALLIC MATERIALS

Category	Test type	Applicable standard	Supplier action	
			Standard used (tick)	Comments (other standard if not in the list)
Metallography and Microindentation hardness	(L0) Metallographic Evaluation	ASTM E3	x	
		ASTM E407	x	
	(L11) Grain size	ASTM E112	x	
		ISO 643	x	
	(L12) Inclusion rating	ASTM E45	x	
		EN 2951		
	(L7) Near surface examinations - IGA, IGO	ISO 4967		
		EN 2716	x	Partie observation
		ASTM G110	x	Partie observation
	(L8) Near surface examinations - Alpha case: Wrought titanium	ASTM F2111	x	
EN 2003-009		x		
(L9) Near Surface examinations - Alpha case: cast titanium	EN 2003-009	x		
(XL) Macro Examination	ASTM A604			
	ASTM E340	x		
Corrosion	(Q) Salt spray	ASTM B117	x	
		ISO 9227	x	

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