CUSTOMER APPROVAL & NADCAP CAPABILITY MEMORANDUM

To: Whomever It may applicable to.

Subject: Approved Laboratory Testing & Metallurgical Capabilities

Scope of Approval

This memorandum is issued to formally document the approved laboratory testing and metallurgical capabilities maintained by Element Materials Technology – Charlotte in support of GKN Aerospace requirements.

All capabilities identified within this memorandum are performed within our active Nadcap-accredited quality system and are controlled in accordance with applicable aerospace industry standards, customer specifications, internal quality procedures, and PRI/Nadcap accreditation requirements.

Element Charlotte maintains qualified personnel, calibrated equipment, validated laboratory procedures, and documented process controls necessary to support aerospace materials characterization, mechanical testing, metallurgical evaluation, and chemical analysis activities.

Nadcap Accreditation Alignment

The approvals identified herein are maintained under the applicable Nadcap accreditation programs, including:

- Nadcap Checklists — Materials Testing Laboratories
- Applicable customer supplements and scope extensions

These approvals support aerospace customer requirements associated with:

- Mechanical Testing
- Metallurgical Evaluation
- Chemical Analysis
- Hardness Testing
- Heat Treatment

Approved Customer (GKN Aerospace Sweden AB) Capabilities

Mechanical Testing

Standard / Method	Capability	Nadcap Mapped Method	Nadcap Scope Reference
ASTM E8	Room Temperature Tensile	Tensile Testing – Ambient Temperature	AC7101/3 (A)
ASTM E21	Elevated Temperature Tensile	Tensile Testing – Elevated Temperature	AC7101/3 (B)
ASTM E139	Creep	Creep Testing	AC7101/3 (G)
ASTM E139	Stress Rupture	Creep / Stress Rupture Testing	AC7101/3 (F)

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Hardness Testing

Standard / Method	Capability	Nadcap Mapped Method	Nadcap Scope Reference
ASTM E10	Brinell Hardness	Hardness Testing – Brinell	AC7101/5 (M1)
ASTM E18	Rockwell Hardness	Hardness Testing – Rockwell	AC7101/5 (M2)
ASTM E92 / ISO 6507	Vickers Hardness	Hardness Testing – Vickers	AC7101/5 (M3)
ASTM E384 / ISO 4545	Microhardness	Vickers / Knoop Microhardness	AC7101/4 (L5)

Chemical Analysis

Standard / Method	Capability	Nadcap Mapped Method	Nadcap Scope Reference
ASTM E1019 / E1409	Oxygen / Nitrogen Analysis	Inert Gas Fusion Analysis	AC7101/2 (G)
ASTM E1447	Hydrogen Analysis	Inert Gas Fusion – Hydrogen	AC7101/2 (F)
ASTM E415 / E1086	Optical Emission Spectroscopy (OES)	Chemical Analysis – OES	AC7101/2 (A)

Metallurgical Evaluation

Standard / Method	Capability	Nadcap Mapped Method	Nadcap Scope Reference
ASTM E112	Grain Size Determination	Metallographic Grain Size Evaluation	AC7101/4 (L11)
ASTM E45	Inclusion Rating / Cleanliness	Inclusion Rating Evaluation	AC7101/4 (L12)
ASTM E340	Macro Examination	Macrostructural Examination / Macroetch	AC7101/4 (XL)
ASTM E407	Weld Metallographic Evaluation	Metallographic Examination – Weldments	AC7110/13 Supplement B
ASTM E384 Traverse	Alpha Case Evaluation (Titanium)	Alpha Case Depth Evaluation	AC7101/4 (L8)
ASTM E3	Metallographic Sample Preparation	Metallographic Preparation	AC7101/4 (L0)

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Machining

Standard / Method	Capability	Nadcap Mapped Method	Nadcap Scope Reference
Prime Specification	Low Stress Grinding	Specimen Preparation – Low Stress Grinding	AC7101/7 (XQ)

Laboratory Support Processes

Standard / Method	Capability	Nadcap Mapped Method	Nadcap Scope Reference
Prime Specification	Heat Treatment of Test Specimens	Laboratory Heat Treatment Support	AC7101/9 (XG)

Quality Commitment

Element Charlotte remains committed to maintaining Nadcap accreditation compliance, customer-specific approval requirements, technical competence, equipment calibration and traceability, and continuous quality improvement to ensure accurate, reliable, and technically compliant laboratory results supporting aerospace applications.

Controlled Approval Statement

GKN Aerospace Sweden AB approvals identified within this memorandum are maintained through the Element Charlotte Nadcap quality system and remain subject to ongoing accreditation compliance, internal quality surveillance, proficiency validation, and customer oversight requirements.

Nadcap accreditation certificates and detailed scope information are available upon request.

Current Approval Status

Element Charlotte currently maintains APPROVED status for all capabilities identified within this memorandum supporting GKN Aerospace requirements under the applicable Nadcap accreditation scope.

Memo Approval

05-14-2026

Justin Nelson

General Manager

05-14-2026

Parth Patel

Quality Manager

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