

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

EXCEL TESTING AND ENGINEERING LLC. DBA: EXCEL ENGINEERING 1587 160th Avenue Diagonal, IA 50845 Jeff Doolittle Quality Manager Phone: 641 734 5800 Email: Jeff.Doolittle@ExcelEngineering.org

MECHANICAL

Valid To: August 31, 2024

Certificate Number: 4050.01

In recognition of the successful completion of the A2LA evaluation process accreditation is granted to this laboratory at the location listed above as well as the satellite location¹ listed below to perform the following types of tests on <u>Internal Combustion (IC) Engine Development</u>, Engine Exhaust Emissions, and <u>Electrification Development</u>:

| Test | Test Method ² |
|---|---|
| Performance Engine Durability Development and | Excel Engineering Procedure – Engine |
| Engine Emissions Development | Durability Development |
| (25 to 4,500) HP | |
| 24/7 Automated Engine Operation | |
| Automated Computer Controlled Test Cells | |
| Exhaust After Treatment Testing | Excel Engineering Procedure – After Treatment |
| Durability/Aging Process and | Aging/Poisoning |
| Development Work | |
| Engine Off Level Testing | Excel Engineering Procedure – Off Level |
| Capable of 50° on both axes | Engine Testing |
| Cold Ambient Testing | Excel Engineering Procedure – Cold Ambient |
| -25°C Capability | Testing |
| Engine Cold Flush Testing | Excel Engineering Procedure – Engine Cold |
| (-265 to 65) °F Coolant Flush in less than | Flush Testing |
| 65 sec | |
| Engine and Vehicle Component Testing | Excel Engineering Procedure – Component |
| (In conjunction with Engine Durability Testing) | Testing |
| On Highway, Off-Road and Marine Exhaust | Excel Engineering Procedure – Engine |
| Emissions | Emissions Development |
| Engine Exhaust Emissions Testing Procedures | Excel Engineering Procedure – 40 CFR 1065 |
| 40 CFR Emissions Test Cells | Engine Testing |
| Motoring Dynamometer Capabilities | |
| Transient and Steady State Testing | |
| Capabilities | |

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(A2LA Cert. No. 4050.01) Revised 06/16/2023

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EXCEL TESTING AND ENGINEERING LLC. DBA: EXCEL ENGINEERING¹ 904 S. Cleveland Street Mount Ayr, IA 50854

| Test | Test Method ² |
|-----------------------------|---|
| Battery Performance Testing | Excel Engineering Procedure - Battery Cycling |
| | Excel Engineering Procedure – Rollover Testing |
| | Excel Engineering Procedure – Penetration Testing |
| | Excel Engineering Procedure – Dust Testing |
| | Excel Engineering Procedure – Spray Testing |
| | Excel Engineering Procedure – Immersion Testing |
| | Excel Engineering Procedure – Drop Testing |
| | Excel Engineering Procedure – Salt Testing |
| | Excel Engineering Procedure - Crush Testing |

¹This accreditation covers the specified testing performed at the laboratory locations listed in this scope of accreditation.

²This laboratory also uses customer supplied specifications and/or methods.

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Accredited Laboratory

A2LA has accredited

EXCEL TESTING AND ENGINEERING LLC. DBA: EXCEL ENGINEERING

Diagonal, IA

for technical competence in the field of

Mechanical Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated April 2017).



Presented this 19th day of August 2022.

Mr. Trace McInturff, Vice President, Accreditation Services For the Accreditation Council Certificate Number 4050.01 Valid to August 31, 2024