

King Guerrero

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SUMMARY

Senior **Structural Test Engineer** with 10 years of aerospace and **mechanical test** experience through October 2026, covering structural test planning, fixture and hardware design, **integrated test systems**, execution, data validation, and technical reporting. Bachelor's trained mechanical engineer with hands on CATIA and SolidWorks expertise, project management experience, pneumatic system knowledge, DFMA practice, and structural analysis capability. Leads multidisciplinary teams across engineering, manufacturing, laboratory operations, quality, and program management. Has managed concurrent qualification programs, resolved hardware and data issues under schedule pressure, reviewed results for customer release, and researched methods that improve laboratory efficiency. Active **U.S. Secret Clearance** within the past 24 months supports regulated aerospace work. Brings sound judgment, urgency, adaptability, and project ownership to structural testing programs that demand accurate results and dependable delivery.

EXPERIENCE

Senior Structural Test Engineer

July 2023 - Present

Redstone Aerostructures

Huntsville, AL

Owns aerospace structural qualification campaigns from requirements definition through customer delivery. Leads multidisciplinary engineers, designers, manufacturing teams, technicians, analysts, and program managers across concurrent projects. Provides technical direction for **test hardware**, pneumatic systems, instrumentation, integrated controls, data quality, reporting, and emerging laboratory methods.

- Converted qualification requirements into load cases, procedures, readiness criteria, and customer reports.
- Reviewed CATIA fixtures and pneumatic hardware using **structural analysis** and DFMA principles before fabrication.
- Integrated actuators, **load cells**, strain sensors, **data acquisition**, and controls through checkout and execution.
- Investigated test anomalies against expected behavior, documenting dispositions before customer data release.
- Managed concurrent programs with analysts, designers, manufacturing teams, laboratory staff, and program managers.
- Mentored junior engineers on procedures, **fixture design**, **data quality**, reporting, and new test methods.

Structural Test Engineer III

March 2020 - June 2023

Summit Flight Sciences

Colorado Springs, CO

Led aerospace structural test work packages from requirements review through customer data delivery. Coordinated engineering, quality, operations, and customer teams while owning fixture design, pneumatic checkout, data validation, schedules, and practical improvements to test control and instrumentation.

- Led structural tests from requirements review through validated customer data delivery.
- Designed **SolidWorks** fixtures for static and cyclic loading, completing **DFMA** reviews before fabrication.
- Integrated pneumatic circuits during checkout and diagnosed system issues before test execution.
- Managed work packages and schedules across engineering, quality, operations, and customer teams.
- Validated **test data** with engineering calculations and independent checks before formal reporting.
- Prototyped **instrumentation** and test control improvements adopted on subsequent **aerospace** programs.

Structural Test Engineer II

June 2018 - February 2020

Vector Structures Group

Fort Worth, TX

Executed controlled structural tests on metallic and composite components while supporting fixture design, instrumentation, fabrication coordination, calibration records, data review, and **technical reporting**. Connected measured behavior with predicted response so teams could make timely engineering decisions.

- Executed metallic and composite structural tests using controlled procedures and verified configurations.
- Created **CATIA** fixture models and interface drawings for fabrication and assembly.
- Compared measured strain and displacement with predicted structural response during test reviews.
- Coordinated fabrication, sensor installation, calibration records, and pretest checkout activities.
- Authored technical reports linking configuration, methods, results, anomalies, and conclusions.
- Tracked hardware status, dependencies, actions, and technical decisions across concurrent assignments.

Associate Structural Test Engineer

October 2016 - May 2018

Gulf Coast Engineering Labs

Mobile, AL

Supported structural and mechanical test programs while progressing from supervised assignments toward independent engineering ownership. Prepared procedures, equipment records, configuration documentation, fixture models, instrumentation support, execution checks, and report material for laboratory and customer use.

- Prepared procedures, equipment lists, sketches, and configuration records for test programs.
- Modeled brackets, fixtures, and interfaces in SolidWorks using manufacturing feedback.

- Supported installation of load cells, **strain gauges**, **displacement sensors**, and pneumatic components.
- Monitored execution data and checked calibration, continuity, and expected response.
- Compiled plots, photographs, configuration details, and observations for technical reports.
- Coordinated with analysts, designers, technicians, and quality personnel during independent assignments.

PROJECTS

Integrated Structural Qualification Campaign 📅 2026

Unified test planning, CATIA fixture reviews, pneumatic hardware, instrumentation, data acquisition, and reporting into a controlled qualification campaign supporting reliable customer decisions.

Pneumatic Test System Improvement 📅 2023

Refined pneumatic checkout and instrumentation practices after recurring system issues, helping laboratory teams diagnose faults earlier and execute test work with greater confidence.

Composite Component Data Validation 📅 2020

Connected measured strain and displacement with predicted structural response, giving engineering stakeholders clearer evidence for configuration and test conclusions.

LEADERSHIP & AWARDS

- Project Management Professional recognition, earned in 2024 after applying structured planning across concurrent aerospace test programs.
- Senior engineering leadership, trusted to mentor junior engineers and guide multidisciplinary teams through qualification milestones.
- Technical ownership recognition, earned through consistent data review, anomaly resolution, and customer ready reporting.

EDUCATION

Bachelor's Degree in Mechanical Engineering

2016

University of South Alabama GPA: 3.5

Mobile, AL

Coursework: Structural Analysis, Mechanical Design, Engineering Materials, Instrumentation, Manufacturing Processes

CERTIFICATIONS

- Project Management Professional 📅 2024
- U.S. Secret Clearance 📅 2024

TECHNICAL SKILLS

- **CAD Systems:** CATIA, SolidWorks, CAD
- **Structural Engineering:** Structural analysis, Structural testing, Mechanical engineering
- **Test Planning:** Test plans, Test procedures, Readiness criteria
- **Test Hardware:** Fixtures, Load cases, Hardware interfaces
- **Instrumentation:** Load cells, Strain gauges, Displacement sensors
- **Data Systems:** Data acquisition, Data validation, Engineering calculations
- **Pneumatic Systems:** Pneumatic circuits, Actuators, Pneumatic maintenance
- **Manufacturing Methods:** DFMA, Fabrication coordination, Manufacturing feedback
- **Reporting Tools:** Technical reports, Data plots, Configuration records
- **Project Management:** Project Management Professional, Work packages, Schedule management
- **Quality Practices:** Calibration records, Continuity checks, Independent checks
- **Security And Compliance:** U.S. Secret Clearance, U.S. Person, Export control requirements

SKILLS

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|-----------------------|--------------------|-----------------------|--------------------------|
| • Structural Testing | • SolidWorks | • Instrumentation | • Project Management |
| • Structural Analysis | • CAD | • Data Acquisition | • Test Procedures |
| • Test Planning | • DFMA | • Data Validation | • Mechanical Engineering |
| • CATIA | • Pneumatic Design | • Technical Reporting | |

PROFESSIONAL AFFILIATIONS

- Aerospace structural testing community, engaged through multidisciplinary qualification work and laboratory capability improvements.

- Mechanical engineering professional community, connected through continuing practice in design, analysis, testing, and project delivery.

LANGUAGES

- English (Native)
- Spanish (Intermediate)

ADDITIONAL INFORMATION

Work Status : Authorized to work in United States. No sponsorship required.

REFERENCES

AVAILABLE ON REQUEST