The AMECA Ball Joint Certification Program

AMECA™ Certified

A2LA ACCREDITED
Certificate Number: 4308.01

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Table of Contents

Introduction 3
The Certification Process Overview 5
1. **Manufacturer Factory Approval** 5
2. **Manufacturer Part Approval.** 5
3. **Part Certification/Vehicle Fit.** 5
4. **Maintaining Quality** 6
5. **Warranty** 7
6. **Program Cost** 7
7. **Durability Requirements** 7

Program Flow Chart 8
Certification Program Details 9
1. **Document Description.** 9

Factory Application Process 9
2. **Normative References/Standards (17067 S6.5.1 b)** 10
3. **Terms and Definitions.** 11
5. **Object of Product Certification.** 13
6. **Product Certification Scheme (ISO 17067 S5, 17067 S6.5.1c).** 13
7. **Operation of AMECA Wheel and Suspension Components Product Certification Scheme (ISO-17067 S6).** 13

7.5.1. Items To Be Submitted To Obtain AMECA Certification. 15
Table 1: Test Sequence for 75,000 Miles/5 Year Rating 16
Table 2: Test Sequence 150,000 Miles/10 Year Rating 17

8. **Sub-referenced Documents.** 23

Appendix A: AMECA CERTIFICATE OF EQUIPMENT COMPLIANCE 24
Appendix B: AMECA Certified Logo. 25

Introduction

The intention of The AMECA Ball Joint Certification Program is to provide consumers with confidence that products will perform and are durable. Our program uses the standards below.

SAE J193 and SAE J491 for durability
SAE J2721 for corrosion
GMW15459 for water spray

Two levels of certification:

75,000 miles = 1.2 million cycles and 5-year corrosion
150,000 Miles = 2.4 million cycles and 10-year corrosion

The Automotive Manufacturers Equipment Compliance Agency, Inc. (AMECA) is an independent 3rd party safety registration organization. AMECA was incorporated in late 1994 to continue providing the same Safety Equipment Services to the states that the American Association of Motor Vehicle Administrators, (AAMVA) had provided since 1967. As with AAMVA, AMECA has individual signed agreements with various states for providing equipment compliance services as their Agent. AMECA is the only organization with agreements to provide listing of state regulated safety products in the United States.

The ISO Program will be in addition to state regulations. States do not require ISO-certification.

AMECA Equipment Certification Program is a centralized one-stop program that notifies government, industry and the general public about items of motor vehicle safety equipment that have been tested by an AMECA-accredited laboratory and Certified to applicable United States standards.

We serve the national and international automotive industry, the standards-setting community, numerous state governments, as well as some foreign governments. We protect the motoring public from substandard and untraceable parts. We provide support to the police officer in identifying non-compliant, illegal and unsafe equipment.

AMECA operates a comprehensive management system and a detailed Quality Policy to ensure a high standard of service and safety of personnel at all times.

All items submitted through the AMECA program must be properly marked and identified. Each item is completely traceable to the manufacturer, to the testing laboratory and the test data by AMECA.

Items in AMECA's ISO-Certification Program will be freely available by request or at the AMECA website.

AMECA maintains close and regular communication with its accredited laboratories and conducts periodic physical audits of the laboratory as well as providing them with current standards and regulatory information.

Many state laws regulating automotive safety equipment were promulgated by the Vehicle Equipment Safety Commission (VESC) of the Vehicle Equipment Safety interstate compact. VESC regulations continue to be used by the states. AMECA has all signed agreements pertaining to operation of the VESC. AMECA is the custodian of the VESC files. A complete list of VESC regulations is available at VESC.org.

Automotive Manufacturers Equipment Compliance Agency, Inc.

History and Track Record

The Equipment Compliance Program currently conducted by AMECA has its roots in state safety regulations, with some records and data going back to the 1950's. AMECA keeps extensive historical records, including all test data regarding the Equipment Compliance Program. AMECA has never undergone any legal actions regarding its Equipment Compliance activities. AMECA expects the same performance from the certification program.

AMECA staff members voluntarily participate on various consensus standards committees such as Society of Automotive Engineers (SAE) committees on lighting, brakes, emergency lighting and sirens, and the American National Standards Institute, (ANSI) Z26.1 committee on glazing materials.

AMECA provides certification services based on OEM, United States FMVSS standards, SAE Standards and VESC Standards.

AMECA and its personnel are not engaged in any activities that may conflict with their independence of judgment and integrity in relation to their certification services. AMECA is solely engaged in the audit and certification of products and its legal identity is limited to certification of products only and not a consultancy or any other services, which may create any conflict of interest.

The Certification Process Overview

1. Manufacturer Factory Approval.

Prior to ANY parts being approved AMECA will conduct a thorough on-site review of the manufacturers quality system, access to OEM/SAE standards, inventory tracking, quality verification and geometric dimensioning and tolerancing capabilities.

Each factory, each part, stands on its own.

Items must be tested prior to inclusion to the AMECA Program.

2. Manufacturer Part Approval.

There is no "one size fits all" standard for ball joints. Different vehicles may have very different design and service requirements. This scheme will attempt to provide as much information as possible on the testing requirements. During application process, the manufacturer and AMECA must agree on a set of standards to which a product will be tested to.

Factory Application Process is in Section 1.

Part Certification Requirements including details on tests, measurements required Section 7.5.1.

3. Part Certification/Vehicle Fit.

After the factory is approved, the manufacturer may submit individual parts for certification from that factory only.

Each part is tested to relevant OEM, or SAE standards. In addition, products are tested for fit, finish, and material selection. Products must be marked with the AMECA Certification Sticker.

To be included in the AMECA Registry of Certified products all products must:

- Have test reports submitted to AMECA and approval granted.
- Product manufactured in AMECA approved facility.
- Must use the AMECA Certification Sticker.

- Be marked with individual serial numbers and barcoded **OR** QR code.
- Part Numbers/Serial numbers must be sent to AMECA.
- Use at least 3 OE samples for the initial part design.
    - Final measured results must be **between** the values of the 3 initial samples.

AMECA Certification Stickers

4. Maintaining Quality.

After factory and part approval is completed, each part is checked by a market audit by purchasing the part number from a retailer. Any damage to the product from shipping and handling is noted. Factories are also regularly audited by AMECA. AMECA has an open complaint process where anyone can file a complaint if they believe the part does not meet standards—including cosmetic requirements.

AMECA random market audit and complaint program can lead to the delisting of parts. The delisted parts will also be available on the AMECA website. AMECA has an appeal process for manufacturers to ensure that the process is conducted impartially.

5. Warranty.

AMECA does not warranty parts. Parts warranties are between the buyer and seller and can vary by state and jurisdictions involved.

Manufacturers are responsible for ensuring that the product displaying the AMECA Certified Logo conforms to the necessary standards for its safe operation. AMECA is certifying that part meets those standards.

6. Program Cost.

Manufacturers are charged the amounts listed below plus expenses, for each facility Audit fee.

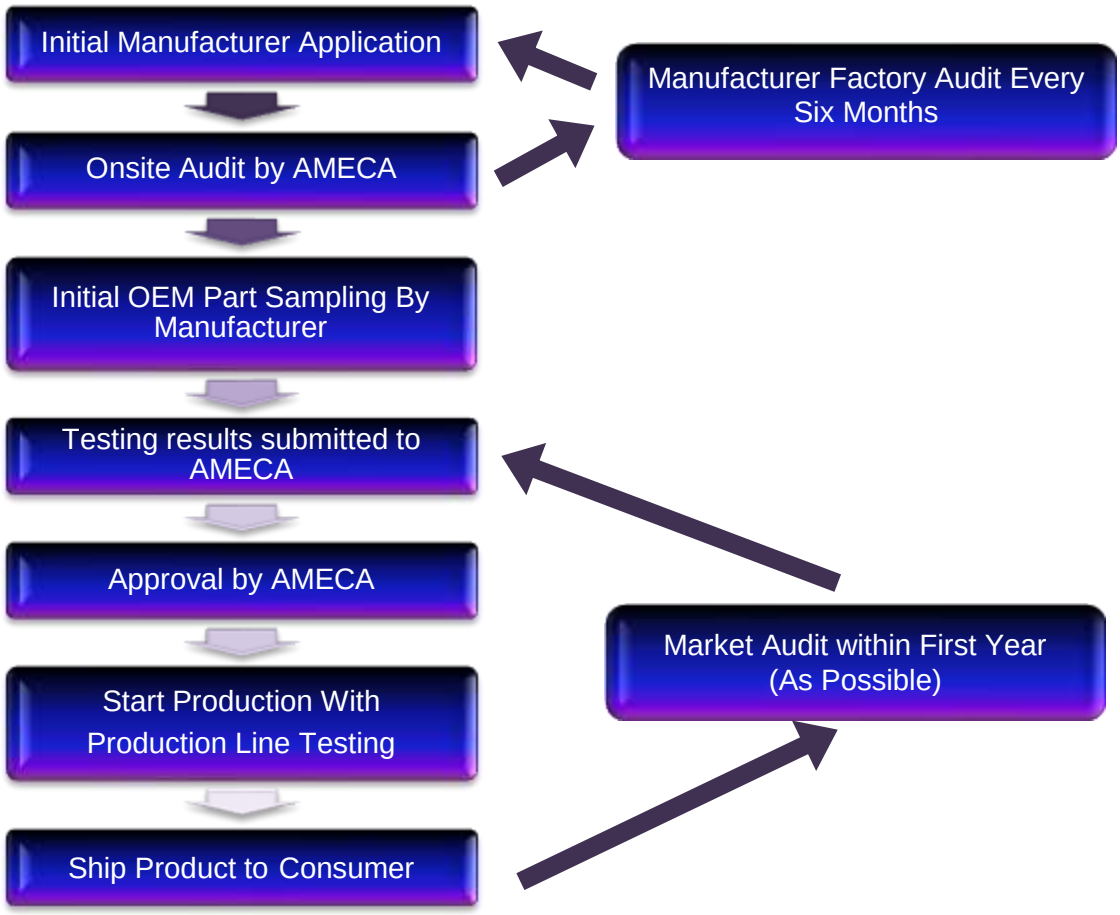
- $2500 for each factory audit. One per year. Approximately 2-3 days.
- $1500 for each factory validation audit-one per year. Approximately 1-2 days.
- $350 for each product.
- Market Audit Testing fees are separate and come from the independent laboratory.

7. Durability Requirements.

75,000 miles = 1.2 million cycles and 5-year corrosion

150,000 Miles = 2.4 million cycles and 10-year corrosion

Program Flow Chart



Certification Program Details

1. Document Description.

1.1. This document is the ISO-17067 Certification Scheme for materials to comply with the ISO-17065 certification process conducted by AMECA.

1.2. Our program scope will be automotive ball joints. (17067 S6.5.1a).

1.3. AMECA will be operating a Type 4 certification scheme.

1.4. AMECA personnel and AMECA contractors will conduct an onsite audit of each manufacturing location. AMECA and the contractor will alternate every 6 months. Audits will verify manufacturers are:

- Maintaining product quality.
- Have up to date documents, procedures and standards.
- Properly marking certified products.
- Conducting production line testing.
- Spot checking production line testing results.
- Access to OEM information, as necessary.
- Using the correct material specifications.
- Not making any undocumented/unapproved changes.

Factory Application Process

Each manufacturing location will stand on its own.

Companies with multiple locations must all undergo the same process.

1.4.1. Manufacturers will provide the following information for each facility which will be manufacturing parts.

1.4.2. Copy of ISO-900I/IATF-16949 (ISO/TS 16949) Certificate issued by a Management System Certification Body accredited to ISO/IEC 17021-1 by an IAF-MLA Signatory

Accreditation Body. AMECA will NOT be conducting an ISO-9001/IATF-16949 (ISO/TS 16949) audit. Merely that the audit in place is adequate.

1.4.3. Completed F30 AMECA Wheel and Suspension Component Manufacturer Application.

1.4.4. List of standards available to company. For SAE Standards having access to current year SAE Handbook is sufficient. Manufacturers *must* have a complete set of standards and reference documents detailed in Section 2 for the products they manufacture

1.4.5. Manufacturers must be able to provide the information in Section 7.5.1 for all products requesting certification.

1.4.6. Knowledge of SAE J1739 Potential Failure Mode and Effects Analysis in Design (Design FMEA), Potential Failure Mode and Effects Analysis in Manufacturing and Assembly Processes (Process FMEA) or equivalent

1.4.7. Manufacturers must have the ability to conduct production line quality testing.

1.5. Certified products must use the "AMECA Certified" Logo on their products or packaging as per F28, AMECA Certification and Licensing Agreement. See Appendix B

2. Normative References/Standards (17067 S6.5.1 b).

Manufacturers will be responsible to ensure that all relevant standards are met for their products to ensure a safe and reliable product. In many instances, OEM references may go far beyond what is required by SAE. If there is a conflict between an OEM standard and a SAE Standard, OEM always prevails.

Manufacturers are required to have access to SAE and OEM specifications as necessary.

Laboratories are required to maintain ISO-17025 certification for any tests performed.

GMW15459 Ball Joint Seal Test Under Simulated Environmental Conditions

SAE J193 Ball Stud and Socket Assembly-Test Procedures

SAE J490 Ball Joints

SAE J1120 Spherical Rod Ends

SAE J1259 Metric Spherical Rod Ends

SAE J1367 Performance Test Procedure - Ball Joints and Spherical Rod Ends

SAE J1739 Potential Failure Mode and Effects Analysis in Design (Design FMEA), Potential Failure Mode and Effects Analysis in Manufacturing and Assembly Processes (Process FMEA)

SAE J2721 Recommended Corrosion Test Methods for Commercial Vehicle Components

3. Terms and Definitions.

3.1. **GMW**: General Motors Test Standard.

3.2. **SAE:** Society of Automotive Engineers.

3.3. **OEM**: Original Equipment Manufacturer.

3.4. **Scheme Owner:** Automotive Manufacturers Equipment Compliance Agency, Inc. (AMECA)

3.5. **Scheme Type:** 4

3.6. **Ball Joint Certification**: The term Ball Joint Certification shall mean automotive suspension components testing conducted by an AMECA accredited manufacturer according to OEM, SAE standards. Included certification shall include verification of item fit and finish per vehicle application.

3.7. **AMECA Designated Laboratory**: In this document an AMECA Designated Laboratory shall mean a laboratory approved by AMECA for testing wheels and suspension components.

3.8. **Sample**: Sample means representative production part to be tested. Products resampled for annual testing verification will be the same part number and must be visually identical to originally tested product.

4. Sample Requirements.

4.1. Sample means representative production part to be tested. Products resampled for annual testing verification will be the same part number and must be visually identical to originally tested product.

a. ***Use at least 3 OE samples for the initial part design.***

b. Resulting parts dimensions shall be the **average** of the three parts unless known problems are addressed.

c. No dimension **is outside** the range of measured parts.

5. Object of Product Certification.

5.1. AMECA's certification program will give confidence to consumers that the products not only perform well, but fit correctly.

6. Product Certification Scheme (ISO 17067 S5, 17067 S6.5.1c).

6.1. **Selection.** Products will be selected from initial production run prior to release. Once performance has been verified the product may be released.

6.2. **Decision on Certification.** All decisions on certification will come from AMECA. Manufacturers may appeal under AMECA's appeal process. As detailed in AMECA's Quality Manual Section 7.6 (S17067 S6.5.1m)

7. Operation of AMECA Wheel and Suspension Components Product Certification Scheme (ISO-17067 S6).

7.1. **This section details how AMECA will operate the certification scheme.**

7.2. **AMECA will operate a product certification system. The system will include the current document.**

7.3. **Details on AMECA and the operation of the scheme.**

7.3.1. AMECA is the scheme owner and the scheme was created for the sole use of AMECA's client companies.

7.3.2. The Wheel and Suspension Component product certification scheme will operate in AMECA's Product Certification System.

7.3.3. AMECA is a Maryland company with an office in the District of Columbia.

7.3.4. AMECA takes full responsibility of all certification decisions based on AMECA Designated Laboratory tests.

7.3.5. Maintenance and guidance of the AMECA Product Certification Program are found in the AMECA Quality Control Manual.

7.3.6. This scheme will operate under the procedures contained in this document and referenced sections of the AMECA Quality Control Manual.

7.3.7. The scheme's documentation is contained in this document and the AMECA Quality Control Manual to which it refers to.

7.3.8. This document has been developed by engineers trained in both automotive testing, manufacturing and ISO certification processes.

7.3.9. Confidentiality is covered by AMECA document PY-02 Confidentiality Policy.

7.3.10. AMECA will minimize risk by only accepting reports from AMECA accredited laboratories and from manufacturers who have undergone an onsite audit by AMECA.

7.3.11. AMECA has financial reserves and significant liability insurance. We also have a succession plan.

7.3.12. AMECA has been in operation for over 20 years. The ISO certification will not be an additional expense. We will only expand personnel after a well demonstrated need.

7.4. AMECA Product Certification Scheme Development.

7.4.1. AMECA's Product Certification Scheme was developed to promote automotive safety.

7.4.2. AMECA makes the following assumptions: that manufacturers want to make compliant products, that consumers care and that oversight is absolutely necessary.

AMECA may be introduced to significant liability issues which will need to be carefully managed by signed agreements.

7.4.3. AMECA has the support of testing laboratories.

7.4.4. Scheme Principals.

a. AMECA is the owner of this certification.

b. AMECA will make all final certification decisions based on test reports from manufacturers AMECA has audited for the certification program.

c. The funding of the program will come from certification fees and manufacturer/laboratory audit fees.

d. All manufacturers will have an on-site audit by AMECA prior to initial certification of any product. Re-audit by AMECA is every year with additional 6-month validation audit by AMECA contractor.

e. Scheme is reviewed every year with reviewing of standards in the first quarter. Any standards changes may necessitate changes in the scheme.

7.4.5. The scheme and application forms will be published on AMECA's website. AMECA Quality Manual, Policy Documents and internal forms are available to program participants by request.

7.5. Scheme Content (17067 S6.5.1).

7.5.1. Items to Be Submitted to Obtain AMECA Certification.

a. No design changes are permitted for release prior to review by AMECA. Review may require additional testing.

b. AMECA Application Form, F-22.

c. Original dimensional drawings and final measured results.

7.5.1.c.1. Use at least 3 OE samples for the initial part design.

d. Resulting parts dimensions shall be the **average** of the three parts unless known problems are addressed.

e. No dimension is outside the range of measured parts.

f. Testing to the sequence below:

Water Spray => Corrosion => Fatigue

Table 1: Test Sequence for 75,000 Miles/5 Year Rating

Test	*Test Reference*	*Loadings*	*Pass/Fail*	*Test Pieces*
Ball stud to socket tightness/play	*SAE J193 S5.2.2.1*	*n.a.*	*Baseline Value (limit to 0.02 inch)*	*2*
Rotational torque Before Fatigue	*SAE J193 S5.2.1.2.2*		*Baseline Value*	*0 (1 from tightness/play)*
Pull out / Push out. Before Fatigue	*SAE J193 S5.2.5*	*n.a.*	*Min 30kN Actuator safety limit 40kN*	*(1 from tightness/play*
High pressure spray.	*GMW15459*	*4 nozzles, 80 bar, 30s*	*Water penetration, corrosion, boot damage*	*2 pieces*
Corrosion per SAE J2721 (5-year equivalent)	*SAE J2721*	*54 days Before 1.2M cycles Inspections every 200K cycles*	*Visual, Rotational Torque(>0.5Nm), Tightness (0.02inch), Push out (>25kN).*	*0 (continue, 2 from high pressure)*
Axial load (5-year equivalent)	*SAE J193 S5.2.4*	*1.2M Cycles Inspections every 200K cycles*	*Visual, Rotational Torque and Tightness*	*0 (2 from corrosion)*
Ball stud to socket tightness/play	*SAE J193 S5.2.2.1*	*n.a.*	*(limit to 0.02 inch)*	*0 (2 from axial load)*
Pull out / Push out. After Fatigue	*SAE J193 S5.2.5*	*n.a.*	*Min 30kN Actuator safety limit 40kN*	*0 (1 from axial load)*
Rotational Torque. After Fatigue	*SAE J193 S5.2.1.2.2*		*Baseline (above/below 15%)*	*0 (1 from axial load)*
			Total Test Pieces:	*2 joints required*

Table 2: Test Sequence 150,000 Miles/10 Year Rating			
Test	Loadings	Pass/Fail	Test Pieces
Ball stud to socket tightness/play	n.a.	Baseline Value (limit to 0.02 inch)	2
Rotational torque Before Fatigue		Baseline Value	0 (1 from tightness/play)
Pull out / Push out. Before Fatigue	n.a.	Min 30kN *Actuator safety limit 40kN*	(1 from tightness/play
High pressure spray. GMW15459	4 nozzles, 80 bar, 30s	Water penetration, corrosion, boot damage	2 pieces
Corrosion per SAE J2721 (10-year equivalent)	108 days 2.4M Cycles Inspections every 200K Cycles	Visual, Rotational Torque (>0.5Nm), Tightness (0.2inch), Push out (>25kN).	0 (continue, 1 from high pressure)
Axial load (10-year equivalent)	2.4M Cycles Inspections every 200K cycles	Visual, Rotational Torque and Tightness	0 (1 from corrosion)
Ball stud to socket tightness/play	n.a.	(limit to 0.02 inch)	0 (2 from axial load)
Pull out / Push out. After Fatigue	n.a.	Min 30kN *Actuator safety limit 40kN*	0 (1 from axial load)
Rotational Torque. After Fatigue		Baseline (above/below 15%)	0 (1 from axial load)
Total:			2 joints required

g. High Pressure Water Spray GM 15459.

h. High Pressure Water Spray Is performed as intended installation configuration on vehicle, with fixture simulating boot compression/sealing to knuckle, this will limit intrusion and duplicate real-world conditions.

Water Spray Pass/Fail: Any tears in rubber, lubricant leakage, boot cracks, cuts and excessive relaxation.

i. **Corrosion: SAE J2721** Section 10.4, Chassis, is used for corrosion. Section 10.4 gives cycles corresponding to one-year service. 8-20 cycles of the tests using Table 11 is one year. The testing time for table 11 Option 1 is 32 hours.

- 10-year corrosion would be so 80 cycles and 2560 hours (or 107 days).

- 5-year corrosion is 40 cycles or 1280 hours (54 days).

Corrosion Pass/Fail:

j. Visual (external): damage (aside for rust), lubricant leakage, boot cracks, boot cuts and boot excessive relaxation.

k. Mechanical (after additional 100,000 cycles): no pivot by hand and rotation torque (no less than 0.5Nm), Push-out force Min 30KN, ball joint play (ball stud to socket tightness) 0.2 inch.

l. Visual (internal): corrosion penetration to internal components.

Corrosion is be performed BEFORE fatigue

m. Corrosion is performed as intended installation configuration on vehicle, with fixture simulating boot compression/sealing to knuckle; this will limit intrusion and duplicate real-world conditions.

n. Post corrosion ball joint is:

a. rinsed with DI water.

b. inspected for (aside for rust) damage, lubricant leakage, boot cracks, cuts and excessive relaxation.

o. For 5-year rating: disassembled for signs of corrosion penetration to internal components (lifecycle total 1.1M).

p. For 10 years rating: returns for corrosion followed by a., b. and c. (lifecycle total 2.5M).

q. Fatigue Tests.

Ball-Joints have a standard diameter so parts are grouped by loading and diameter. Any specific OE data on applications would supersede the table below.

If a ball joint passes at a higher weight, it will automatically cover weights below.

Grouping Steering-Ball Stud Socket Standard Dimensions and Fatigue Testing					
Inch	Metric (mm)	4000 GVW Axial Load = +/- 0.93kN at 2Hz Radial Load = +/- 2.0kN at 2Hz	6500 GVW Axial Load = +/- 1.5kN at 2Hz Radial Load = +/- 3.2kN at 2Hz	8500 GVW Axial Load = +/- 2.0kN at 2Hz Radial Load = +/- 4.2kN at 2Hz	12,5k GVW Axial Load = +/- 2.9kN at 2Hz Radial Load = +/- 6.2kN at 2Hz
5/8	16	X	X		
3/4	20	X	X	X	
7/8	22	X	X	X	
1	25	X	X	X	
1 1/8	28	X	X	X	X
1 1/4	32	X	X	X	X
1 1/2	38	X	X	X	X
1 3/4	44		X	X	X
2	50			X	X
2 1/4	58			X	X
	64			X	X

Fatigue pass/fail:

Ball stud to socket tightness/play	*(limit to 0.02 inch)*
Pull out / Push out. After Fatigue	*Min 30kN Actuator safety limit 40kN*
Rotational Torque. After Fatigue	*Baseline (above/below 15%)*

7.5.2. General Information.

a. This scheme covers automotive Wheels and Suspension Components products.

b. Products are evaluated the 5 criteria below. See AMECA Quality Manual 7.2.1 for more information.

7.5.2.b.1. Testing performance to OEM or SAE Standards as applicable.

7.5.2.b.2. Fit and finish.

7.5.2.b.3. Material selection.

7.5.2.b.4. Conformity to OEM specifications.

7.5.2.b.5. Item dimensions must be within the range of the tested OEM devices.

7.5.3. This is a Type 4 certification system.

7.5.3.a.1. Initial product selection will be at the manufacturers' discretion.

7.5.3.a.2. Determination of characteristics for certification are defined in 7.5.1.

7.5.3.a.3. AMECA will review all data from the manufacturers.

7.5.3.a.4. AMECA will make the decision on certification.

7.5.3.a.5. AMECA will issue a certificate of conformity (see Appendix A)

7.5.3.a.6. The usage and rights of manufacturers for the Certificate of Conformity is found in the AMECA form F28, AMECA Certification and Licensing Agreement.

b. Other requirements.

c. AMECA only acts as a certification body.

d. AMECA currently has no Mutual Recognition Agreements.

e. Methods and procedures are detailed in the AMECA Quality Manual and Procedures.

f. AMECA will issue a certificate of conformity which states the product and standard to which it was tested. See Appendix A

g. Conformity mark usage is contained in AMECA form F28, AMECA Certification and Licensing Agreement.

h. AMECA Owns the mark associated with this certification plan.

i. Resource requirements are detailed in the AMECA Quality Manual and sub-referenced policy, procedure and form documents.

j. Results will be reported by email and publishing on the AMECA website. Manufacturers will receive certification document (Appendix A).

k. Non-conformities are handled according to AMECA QP10, Certificate Issue, Suspension and Withdrawal.

l. The scheme documents will be on the AMECA website. Quality manual, internal forms and policy documents are available to program participants.

m. All certified products will be updated to the ameca.org website.

n. AMECA is both the Certification Body and Scheme Owner.

o. Certification general conditions are contained in document QP10 Certificate Issue, Suspension and Withdrawal.

p. Complaints are verified using process in QP07, Complaints and Appeals.

q. Clients may refer to the certification scheme as per SC05A AMECA Automotive Ball Joint Certification Program.

r. Records are held in accordance to AMECA QP02, Control of Records

7.5.4. **Prior Testing.** Tests, up to the three-year limit, performed by an AMECA accredited laboratory is acceptable for certification.

7.5.5. **Outsourcing**. Test labs may outsource testing if witnessed by trained personnel. Testing laboratories are responsible for all testing and results done by outsourced facilities. Prior approval of outsourced test and facility is required by AMECA.

7.5.6. **Complaints and Appeals.** AMECA will follow QP07, Complaints and Appeals for handling those matters.

7.5.7. **Licensing and Control of Use of "AMECA Certified" Logo.** AMECA form F28, AMECA Certification and Licensing Agreement.

7.5.8. **Surveillance.** AMECA surveillance policy is contained in QP09, Procedure for Testing S4.5. and to AMECA QP10, Certificate Issue, Suspension and Withdrawal S4.3.

7.5.9. **Non-Conforming Products.** Information about non-conforming products is contained in AMECA Quality Manual Section 7.11.

7.5.10. **Reporting to Scheme Owner.** AMECA is the scheme owner. No external reporting is required.

7.5.11. **Subcontracting Operations.** AMECA form F11, Contractor Agreement, covers the subcontracting agreement for program evaluation.

7.5.12. **Marketing.** Companies are allowed to use the AMECA Certified Mark as per licensing agreement AMECA form F28, AMECA Certification and Licensing Agreement.

7.5.13. **Fraudulent Claim of Certification.** Any use of the AMECA Certified Mark or AMECA logo by parties not under the agreement is a violation of U.S. and foreign trademark laws. Parties will be first notified by email and certified letter of the infraction. Companies will be given 30 days to respond and/or remove all references to AMECA and the AMECA Certification process.

AMECA will initiate legal action as appropriate to Companies who do not comply or respond to our request within the time period will be delisted. Further information is in section 14 of F28, AMECA Certification and Licensing Agreement.

7.6. **Maintenance and Improvement of the Scheme.**

7.6.1. **Review of Scheme Operation.** During AMECA's impartiality meeting customer feedback will be summarized to the committee. AMECA will also openly solicit input from stake holders and industries regarding any potential expansion of certification activities. AMECA will also benchmark, as much as possible, existing certification systems in the same areas.

7.6.2. **Changes to Specified Requirements.** AMECA monitors the daily federal register for any standards changes. AMECA is also on several SAE Committees for which we offer certification. Additionally, the first quarter of each year AMECA will check for updates as per AMECA Quality Manual 4.2.4.

7.6.3. **Other Changes.** It is intended that the AMECA Certification scheme be a "Living Document" and will change over time as standards, needs and the market changes. Changes will only be done after agreement by AMECA management, test labs and proposed industry customers.

7.7. **Scheme Documentation.** All necessary information for the AMECA Wheels and Suspension Components Certification Scheme is in this document and sub-referenced AMECA quality documents.

7.8. **Loss of Accreditation.** In the event that AMECA loses its accreditation as a Certification Body AMECA will inform all customers via email or regular mail within 7 days. Manufacturers must cease usage of AMECA logo within 30 days.

8. Sub-referenced Documents.

8.1. AMECA Form F11 Contractor Agreements.

8.2. AMECA Form F28, AMECA Certification and Licensing Agreement.

8.3. AMECA PY-02, Confidentiality Policy.

8.4. AMECA QP02, Control of Records.

8.5. AMECA QP07, Complaints and Appeals.

8.6. AMECA QP09, Procedure for Testing.

8.7. AMECA QP10, Certificate Issue, Suspension and Withdrawal.

AUTOMOTIVE MANUFACTURERS EQUIPMENT COMPLIANCE AGENCY, INC.

AMECA CERTIFICATE OF EQUIPMENT COMPLIANCE

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This Certificate verifies that the item described below has been tested by an accredited laboratory and has been found to be in compliance with the jurisdictional standard(s) listed below where applicable. The issuance of this AMECA Certificate of Equipment Compliance does not denote or imply any endorsement or recommendation of the item described below.

Certificate Number: 2xxxxxxx

Test Report Date: November 21, 2016
Certification Date: September 7, 2017
Expiration Date: January 1, 2020

Applicant: Acme Engineering
123 Main Street
Warner, CA, 201708

ITEM: "abc-123" – (Item Description)

Use: On (make, model and year as much as possible)

Jurisdictional Compliance Standard(S)
Identical To: OEM or SAE as applicable

Markings: (Identification markings)

Test Lab: (Lab which conducts testing.
Report Number: (supplied by lab)

_____

Executive Director

Appendix B

AMECA Certified Logo.