



Manufacturer's Guide 2001

GENERAL

The Equipment Compliance Program (ECP) of the Automotive Manufacturers Equipment Compliance Agency, Inc. is a centralized, voluntary, one-stop program which notifies government, industry and the general public about items of motor vehicle safety equipment which have been tested by an AMECA-accredited laboratory and found to be in compliance with applicable standards.

The AMECA Equipment Compliance Program staff receives and evaluates test data submitted by applicant manufacturers. When test data show that an item has been completely tested and meets the applicable standard(s), AMECA will issue a Notice of Equipment Compliance document. This document is sent to the applicant. Data from the Notice of Equipment Compliance is entered into the AMECA **Compliance List of Automotive Safety Devices**.

The AMECA **Compliance List** is published annually, with three quarterly supplements. It is sold by subscription to interested states, provinces, manufacturers, laboratories and others. Although available in its traditional printed form, the data contained in the listing may also be available on 3½" floppy disk. Those subscribers interested in receiving the listing data in this form should contact AMECA for more details.

The AMECA Equipment Compliance Program benefits jurisdictions, manufacturers and laboratories in several ways. Among these are the following:

- AMECA provides a one-stop program for most items of equipment.
- AMECA has a full-time, experienced staff to assist manufacturers, accredited laboratories and jurisdictions in answering technical questions, or in directing the questions to those who can best answer them.
- AMECA provides a centralized location for records and provides traceability of items of equipment from the listing to the Notice of Equipment Compliance to the laboratory and to the manufacturer.
- AMECA is a credible third-party organization providing objective and accurate data.
- AMECA serves as agent for U.S. states and the federal government's General Services Administration (GSA) by providing equipment compliance services.

SUBMISSION REQUIREMENTS / ECP 1

Manufacturers seeking to participate in the AMECA Equipment Compliance Program must provide AMECA with the following three documents, which make up the "submission":

1. A completed "Application for Compliance Notification" form (EC-3);
2. One copy of a current test report, in full English text, prepared by an AMECA-accredited testing laboratory.
The test report shall include photographs of identification markings, logos or label proofs, or other applicable identification of the items tested; and
3. The appropriate remittance of the administrative fee by check in U.S. funds drawn on a bank located in the United States, or by wire transfer directly to the AMECA bank. AMECA will send bank instructions to applicants who are located outside of the United States.

Applicants are responsible for all bank transfer fees.

NOTE: The "Notice of Equipment Compliance" cannot be processed by AMECA until the complete submission has been received. The Notice of Equipment Compliance for each item will expire three years from the date of the applicable test report.

CURRENT FEE SCHEDULE / ECP 1A

Submissions to the AMECA Equipment Compliance Program will fall into one of the following six categories. The fees for the various types of submissions are listed here as well.

■ Initial Notification	\$ 350.00
■ Reconfirmation	\$ 350.00
■ *First item of a Family Series	\$ 350.00
■ *Subsequent items of a Family Series	\$ 100.00
■ Brand Registration	\$ 100.00
■ Revision	\$ 100.00

*Please see ECP 4 (page 4) for more information about Family Series submissions. The Family Series designation applies only to a specific list of device categories, and only when certain conditions are met.

ADMINISTRATIVE SERVICE COST REFUND / ECP 2

In the event that the submission fails to meet compliance requirements, AMECA will return all documents and refund the administrative fee.

REVISIONS TO INITIAL COMPLIANCE NOTIFICATION / ECP 3

All correspondence regarding a revision to a current Notice of Equipment Compliance must reference the previously assigned notice number. **Please note: a revision to a current Notice of Equipment Compliance does not extend the expiration date of the original notice.**

The following requirements must be met in order to obtain a revision:

1. An application form (EC-3) must be submitted with an accompanying statement that the request for a revision is being made as a result of a minor change such as:
 - a) a change of company name or address;
 - b) a device modification which does not materially affect the engineering specifications of the original device; or
 - c) addition of brand names, model names or edge codes.
2. When there is a physical change to the device previously tested, an appendix to the test report from the same testing laboratory must be submitted, noting that the device has not been changed functionally, that the engineering characteristics and performance data remain in compliance, and including, where applicable, one glossy photograph or halftone print which clearly reflects the change in the device. For brake fluid, antifreeze or glazing material, a proof copy of the logo or additional brand name label will be necessary in lieu of a photograph. The appendix to the test report shall state the nature of the revision (what has been changed).

FAMILY SERIES / ECP 4

Certain devices may be evaluated as part of a “family series.” The basic components of each device in a family series must have identical structural designs. Listed below are several device categories and their typical variations:

Device Category

1. Lighting Devices, with identical housing and lens

2. Seat Belt Systems, with identical hardware harness

3. Motorcycle Goggles and Face Shields, with identical frame, lens

4. Trailer Hitch Systems, utilizing a basic design concept classification

5. Hydraulic Brake Hose Assembly, of same diameter, utilizing identical material, same construction, and same method of crimping end fittings. For hoses with a free length of less than eight inches, a test sample assembly of eight inches of this hose, with applicable fittings and method of crimping, shall be prepared for the purpose of performing the whip test.

6. Air or Vacuum Brake Hose Assembly, utilizing identical material and construction

7. Sheet Plastic Materials (see page 9, “Guide for Testing...Sheet Plastic”)

Typical Variations

Varying mounting attachments and bulb systems

Length of webbing in lap or shoulder

Varying color tints, material and thickness

Varying sizes to suit installation on motor vehicles within a specific hitch

Varying free lengths and/or end fittings

Varying diameters

Varying tints and/or thicknesses

Applicants must submit a separate application form (EC-3) for each model variation within a family series. Test reports must indicate any variation in performance. Submissions must also be accompanied by a check made payable to AMECA (in U. S. funds) in the amount of \$350.00 to cover the administrative cost of processing the first submission in a family series, and \$100.00 to cover the administrative cost of processing an additional model variation.

Applications for each subsequent item in a family series must reference the Notice of Equipment Compliance issued for the original model. The expiration date for the model variations is the same as that of the original model.

CONFIRMATION OF CONTINUING COMPLIANCE / ECP 5

A Notice of Equipment Compliance remains in effect for a period of three years from the date of the original test report. After such a period, it is necessary for applicants to have the device re-tested, and to reapply following the procedures described under ECP 1. Such a submission would be termed a Reconfirmation, or renewal (see ECP 1A for Reconfirmation fees).

ADDITIONAL INFORMATION CONCERNING SPECIFIC TYPES OF DEVICES

BRAKE HOSES

Air and Vacuum Brake Hoses - An air or vacuum brake hose consists of a length of brake hose of a specific diameter without end fittings. The markings shown on the brake hose will be used to identify the product for compliance notification.

Hydraulic Brake Hose Assembly - An hydraulic brake hose assembly consists of a length of brake hose of a specific diameter with end fittings permanently attached.

Hose assemblies with different end fittings must have separate identification markings on the fittings. If hose assemblies have different end fitting **attachment techniques**, but are otherwise identical, the assemblies are considered to be separate device types.

The free length of the brake hose, plus the markings shown on the hose and end fittings, will be used to identify the assembly for the purpose of compliance notification. Also, the factory-assigned part number for the individual assembly must be reported on the application form (EC-3).

The make, model and year of vehicle on which the hose assembly will be installed should be indicated on the application form (EC-3) under item number 5.

Hydraulic brake hose assemblies with various “free lengths” can come under the “Family Series” concept provided all of the brake hose assemblies are of the same inside diameter, material, construction and method of end fitting crimping. AMECA groups hydraulic assemblies that meet the above criteria into families for processing through our compliance program, which is beneficial to manufacturers with a large “free length” range of hose assemblies.

AMECA processes the brake hose with the shortest free length, but not less than eight inches, as the basic or parent. All other brake hose assemblies with different “free lengths” are processed as family members. The basic (or parent) must be subjected to and comply with all of the tests specified in the Federal Motor Vehicle Safety Standard (FMVSS) No. 106. The family members shall be grouped by the “free lengths” specified in FMVSS 106 Table II, and the assemblies with the shortest free lengths in the other two categories shall be subjected to the ‘whip test.’ The complete test report for the basic (or parent) can also include the results of the ‘whip test’ for the family members. Photographs or assembly drawings clearly showing all markings on the hose and end fittings are required for all brake hose assemblies submitted.

Free Length between end fittings

A separate application is required for each brake hose assembly submitted. The submissions shall include the part number or unique identifier, free length, the testing laboratory and test report number and date.

BRAKE LINING MATERIALS

Identification of brake lining materials is accomplished through the edge code marking. The edge code marking is composed of three parts: the manufacturer’s identification code (prefix); the formulation identification code; and the two letter code which identifies the two ranges of coefficients of friction as determined by the laboratory by testing the material in accordance with the VESC V-3 standard.

The AMECA staff will verify the prefix identifier selected by the manufacturer and, if it is found to have been previously assigned, will recommend a new identifier. The manufacturer can either accept the recommended prefix identifier or suggest a new one which does not conflict with those already assigned.

In addition, if the material is produced for other companies, the applicant must specify the names and addresses of the companies and their assigned identification markings. This information is considered to be proprietary, and will not be released to any other company. There is no extra cost for additional edge code markings that are listed at the time of initial application.

EYE PROTECTION DEVICES

Compliance notification covering eye protection devices must be identified with the manufacturer's trade name and model designation and the VESC V-8. If the device is produced for other companies under various brand names, the name and address of the company for each applicable brand name should be shown. This information is considered to be proprietary, and will not be released to any other company. There is no extra cost for additional brand names that are listed at the time of the initial application.

HYDRAULIC BRAKE FLUID

Brake fluids are identified by the formulation identifier which is assigned by the manufacturer. Compliance notifications are classed into four types:

1. Manufacturer Only — A company engaged in the manufacture of the prime formulation of the fluid. This type of compliance notification covers the product formulation, and is in effect for three years from the date of the test report.

2. Manufacturer/Packager — A company engaged in the manufacture of the prime formulation, and in the packaging of the fluid under various brand names, and who subsequently distributes to retailers. This type of compliance notification covers the product formulation and identifies each brand name under which the product is packaged. Brand names may be added at no additional cost at the time of initial application. The compliance notification is in effect for three years from the date of the test report.

3. Packager Only — The purchaser of a previously qualified bulk fluid formulation who packages under various brand names and subsequently distributes to retailers. A separate compliance notification (Brand Registration) is issued for each brand name listed, and is effective for one year.

4. Distributor Only — The purchaser of a previously qualified bulk fluid from a packager under his brand name and for subsequent retail sale. A separate compliance notification (Brand Registration) is issued for each brand name listed, and is effective for one year.

Application requirements for a "manufacturer only" are identical to the basic compliance requirements listed under ECP 1. A "manufacturer/packager," in addition to the basic requirements, shall provide a list of the brand names and a label proof of each brand name listed.

The requirements for Brand Registration are as follows:

1. A completed application form (EC-3).
2. An affidavit stating that the formulation being packaged under the brand name listed is one for which a formulation compliance notification has been issued. The formulation designation and the AMECA notification number for the formulation must be included in the affidavit.
3. A label proof for each brand name should be submitted.
4. A check made payable to AMECA (in U.S. funds) in the amount of \$100.00 for each brand name, to cover the administrative cost of processing.

The initial compliance notice may be revised to include additional brand names via the revision process described in ECP3.

NOTE: There are three states that may require state registration of brake fluids, which is not covered by the AMECA Notice of Equipment Compliance. The AMECA staff will try to provide manufacturers with those state requirements.

MOTORCYCLE HELMETS

Test reports shall include the manufacturer's model number and, if applicable, brand names and numbers of the same model produced for other companies. This latter information is considered to be proprietary, and will not be released to any other company unless AMECA is directed by the manufacturer to do so.

If a company uses the same trade name for more than one model, all different model designations shall be used to clearly identify the various models.

SAFETY GLASS AND SAFETY GLAZING MATERIALS

All prime glazing materials must be identified with the manufacturer's "DOT" number, "M" model number, "AS" number, trademark and, if applicable, various trademarks of the same model number produced for other companies. The identification markings shall contain the following designations:

1. "AS" followed by a numeral indicating where and how the safety glazing material may be used in the vehicle, according to the standard.
2. "M" followed by a model number to identify the different construction specifications of the safety glazing material.
3. Prime glazing material manufacturer's DOT-assigned identification code number.
4. Trademark or company name.

An applicant for a compliance notification covering prime glazing material shall meet the basic application requirements (ECP 1) except that a label proof of the permanent identification markings must be submitted in lieu of a photograph of the product. If the device is produced under different brand names, proof copies of all brand name markings must be submitted.

Federal and state standards require that manufacturers or distributors who cut pieces from large sheets must mark each piece with the same markings that appear on the large sheet from which it was cut. However, they may not use the DOT-assigned manufacturer code identification number without the permission of the prime glazing manufacturer.

I. Guide for Assignment of "M" Numbers for Safety Glass

The following may be used as a guide for assigning "M" numbers to glazing material for use in motor vehicles:

A. A separate "M" number must be assigned for each different construction.

Different construction means:

1. Laminated Safety Glass
2. Tempered Safety Glass
3. Different Nominal Thickness
4. Different Colors (Tints), other than the shade band

B. The same "M" number can be assigned for the following variations of laminated or tempered safety glass of the same nominal thickness and color (tint):

1. With or without various color shade band, provided each color shade band is listed and is subjected to and meets the requirements of Tests 3 and 4 of ANSI Z26.1 for laminated glass.

2. With or without antenna (printed or wires), provided samples with and without antenna are subjected to and meet all requirements of Tests 9 and 12 for laminated glass or Tests 6, 7 and 8 for tempered glass.

3. With or without electrically heated wires (conductors), provided samples with and without heating wires (conductors) are subjected to and meet all requirements of Tests 9 and 12 for laminated glass or Tests 6, 7 and 8 for tempered glass.

NOTE: THE FIRST TIME “AS-1” LAMINATED GLASS WITH HEATING WIRES IS SUBMITTED FOR CERTIFICATION, A SAMPLE WITH HEATING WIRES SHALL BE SUBMITTED TO AMECA. IF THE MANUFACTURING PROCESS IS NOT CHANGED, NO FURTHER SAMPLES ARE REQUIRED.

4. With or without obscuration band.

C. The following is an example of how laminated safety glass of the same construction could be described: DOT-10, AS-1, M-34 — 5.76 mm nominal thickness blue tinted laminated safety glass with or without blue, green or bronze shade band; with or without antenna wires; with or without heating wires; with or without obscuration band.

II. Guide for Testing and Assignment of “M” Numbers for Sheet Plastic

THE FAMILY SERIES CONCEPT CAN BE USED FOR VARIOUS THICKNESSES AND TINTS (COLORS) OF THE SAME TYPE OF PLASTIC MATERIAL. ONE THICKNESS WOULD BE THE BASIC NOTICE; THE REMAINING THICKNESSES AND TINTS (COLORS) WOULD BE FAMILY SERIES NOTICES.

1. Each thickness of the same tint (color) must have a separate “M” number.
2. Each tint (color) must have a separate “M” number or suffix denoting tint (color).
3. If the manufacturer produces the same material in different thicknesses (i.e., 2.0 mm, 2.5 mm, 3.0 mm, 4.0 mm, 5.0 mm and 6.0 mm) only the thinnest (2.0 mm) and the thickest (6.0 mm) need to be tested. The thicknesses between the two extremes do not need to be tested.
4. If the manufacturer produces the material as cited in 3 above in different tints (colors), then only Tests 2 and 16 need to be performed for each tint (color). Test 2 is not required for AS-5 and AS-7.
5. Many manufacturers use the nominal thickness as the primary “M” number and denote the tint (color) by using a suffix. The matrix shown below may be of assistance in determining the assignment of “M” numbers and the required tests. Please note that the “M” number in the matrix below is illustrative and not mandatory. The manufacturer may use any system to differentiate thicknesses and tints (colors).

“M” Number Matrix

Nominal thickness	Tint (color)					
	Clear	Blue	Green	Bronze	Gray	Yellow
2.0 mm	M-20	M-20B	M-20GR	M-20BR	M-20G	M-20Y
2.5 mm	M-25	M-25B	M-25GR	M-25BR	M-25G	M-25Y
3.0 mm	M-30	M-30B	M-30GR	M-30BR	M-30G	M-30Y
4.0 mm	M-40	M-40B	M-40GR	M-40BR	M-40G	M-40Y
5.0 mm	M-50	M-50B	M-50GR	M-50BR	M-50G	M-50Y
6.0 mm	M-60	M-60B	M-60GR	M-60BR	M-60G	M-60Y

Other Device Categories

In addition to the devices already mentioned above, AMECA processes compliance notifications for seat belts, emergency vehicle equipment, a large number of lighting devices, tire chains, antifreeze/engine coolants, exterior mirrors and trailer hitch assemblies.

LABORATORY ACCREDITATION PROGRAM

The Laboratory Accreditation Program was first implemented by the American Association of Motor Vehicle Administrators in late 1970 to ensure quality control and uniformity of testing and reporting procedures. The program accredits both independent and manufacturer testing facilities. AMECA assumed administration of the program effective January 1, 1995. AMECA's technical staff is the same as when the program was administered by AAMVA. Senior staff members each have over seventeen years of experience providing this very special service to the jurisdictions and industry.

To receive AMECA accreditation, a laboratory must submit a completed **Application for Laboratory Accreditation** form (EC-5) and the supporting documentation specified in the **Criteria and Procedures for Accreditation of Testing Laboratories** (Form EC-6). The application for accreditation and supporting documentation must be in English and are treated as proprietary information.

After the application and supporting documents have been received and reviewed by AMECA, an "on-site" inspection is scheduled and performed by an AMECA representative. Some laboratory conditions subject to evaluation are:

- Is the laboratory test work performed under the technical supervision of a professional engineer, scientist or qualified testing engineer?
- Does the laboratory maintain reference standards traceable to the National Institute of Standards and Technology (NIST) in the United States, or to the national standards body of the country in which the laboratory is located; are these standards equivalent to those of the NIST in the United States?
- Does the laboratory maintain the calibration of test instruments in accordance with the manufacturer's specifications and the standards set forth for such testing instruments?
- Is the laboratory capable of making and repeating measurements within a prescribed degree of accuracy?

Upon satisfactory compliance with the requirements of the accreditation criteria and the "on-site" inspection, an AMECA Certificate of Accreditation (Form EC-4) will be issued to the laboratory. This will permit AMECA to accept test reports of devices indicated on the reverse side of the Certificate of Accreditation. The accreditation covers a period of two years, which may be extended at the discretion of the AMECA Executive Director.

Laboratories may request reaccreditation by notifying the AMECA Executive Director not less than 30 days before the expiration date of the current certificate. The requirements for reaccreditation are identical to those for the original accreditation, unless otherwise advised.

If the AMECA Executive Director determines that an accredited laboratory is no longer complying with the accreditation requirements, the Executive Director may, with 30 days notice to the laboratory, implement revocation procedures. In such a case, the laboratory shall have the opportunity to appeal.

Further information about the Laboratory Accreditation Program can be found in the **Application for Laboratory Accreditation** (Form EC-5) and the **Criteria and Procedures for Accreditation of Testing Laboratories** (Form EC-6), both of which are available from AMECA upon request. Form EC-5 includes the fee schedule for laboratory accreditation.

COMPLIANCE LIST OF AUTOMOTIVE SAFETY DEVICES

The compliance listing is a publication which identifies devices found to be in compliance with the appropriate standards. The listing is not only an aid to state, provincial and federal governments but is also very necessary to the motor vehicle component industry. Quarterly supplements serve to maintain the listing in a current status. Through utilization of this listing, state and provincial administrators are able to ensure that items of safety equipment being sold in their jurisdiction have been tested for compliance to the appropriate safety standard(s).

Annual subscriptions to the basic publication and supplements may be purchased from:

Automotive Manufacturers Equipment Compliance Agency, Inc.

P. O. Box 76960

National Capitol Station

Washington, D.C. 20013-6960

LIST OF ACCEPTABLE PLASTICS FOR OPTICAL LENSES AND REFLECTORS USED ON MOTOR VEHICLES

The plastics listing is a compilation, by manufacturer, of flow formulations, trade names, types of material, colors and color numbers that have successfully completed the three-year outdoor exposure tests specified in FMVSS 108.

Annual subscriptions to the basic publication and supplements may be purchased from AMECA at the address above.

AMECA ACCREDITED LABORATORIES

The listing of AMECA-accredited laboratories and the device classifications for which each laboratory has been accredited to test are shown on Form EC-2A.

In order to facilitate the listing of the various devices, each device has been identified by number. The number or numbers shown under the name and address of each laboratory indicates which device(s) the laboratory is accredited to test.

DEVICE CLASSIFICATION TABLE

A. LIGHTING EQUIPMENT

1. Backup Lamps
2. Center High Mounted Stop Lamps
3. Clearance Lamps
4. Cornering Lamps
5. Hazard Warning Signal Switches
6. Hazard Warning Signal Flashers
7. Hazard Warning-Turn Signal Flashers
8. Headlamps — Sealed Beam
9. Headlamp Housings — Sealed Beam
10. Headlamp Aiming Equipment
11. Headlamp Testing Machines
12. Identification Lamps
13. License Plate Lamps
14. Parking Lamps (Front Position)
15. Replacement Lenses
16. Reflex Reflectors
17. Side Marker Lamps
18. Stop Signal Lamps
19. Tail Lamps (Rear Position)
20. Turn Signal Flashers
21. Turn Signal Lamps
22. Side Turn Signal Lamps
23. Turn Signal Switches — Class A
24. Turn Signal Switches — Class B
25. Triangle Warning Device Kit
26. Slow Moving Vehicle Emblem
27. Headlamp — Replaceable Bulb

B. AUXILIARY LIGHTING EQUIPMENT

28. Auxiliary Low Beam Lamps (Passing)
29. Driving Lamps
30. Fog Lamps
31. Spot Lamps
32. High Mounted Stop and Turn Signal Lamps
33. Deceleration Indicator Lamps

C. SPECIAL VEHICLE EQUIPMENT

34. Directional Emergency Warning Lamps
35. 360 Degree Emergency Warning Lamps
36. Gaseous Discharge Warning Lamps
37. Lamps and Sirens (GSA Ambulances)
38. School Bus Alternating Warning Lamps
39. Warning Lamp Alternating Flashers
40. School Bus Stop Arm

41. School Bus Roof Mounted Warning Lamps
- 42.
- 43.

D. MOTORCYCLE/BICYCLE EQUIPMENT

44. Headlamp Assembly — Motorcycle
45. Headlamp Assembly — Motor Driven Cycle
46. Headlamp Modulator — Motorcycle
47. Windscreens
48. Face Shields
49. Goggles
50. Helmets
51. Reflex Reflectors — Bicycles
52. Reflex Reflectors — Pedal
53. Reflex Reflectors — Tire
54. Turn Signal Lamps — Motorcycle
55. Auxiliary Front Lamps — Motorcycle

E. SAFETY EQUIPMENT

- 56.
57. Antifreeze and Summer Coolants
58. Backup Alarms
59. Brake Fluids
60. Brake Hose — Air
61. Brake Hose — Hydraulic
62. Brake Hose — Vacuum
63. Brake Linings
64. Child Restraint Seating Systems
- 65.
66. Mirrors — Exterior
67. Safety Glass
68. Safety Glazing Materials
69. Sun Screening Devices
70. Seat Belts
71. Tire Chains — Cable & Link
72. Trailer Hitches