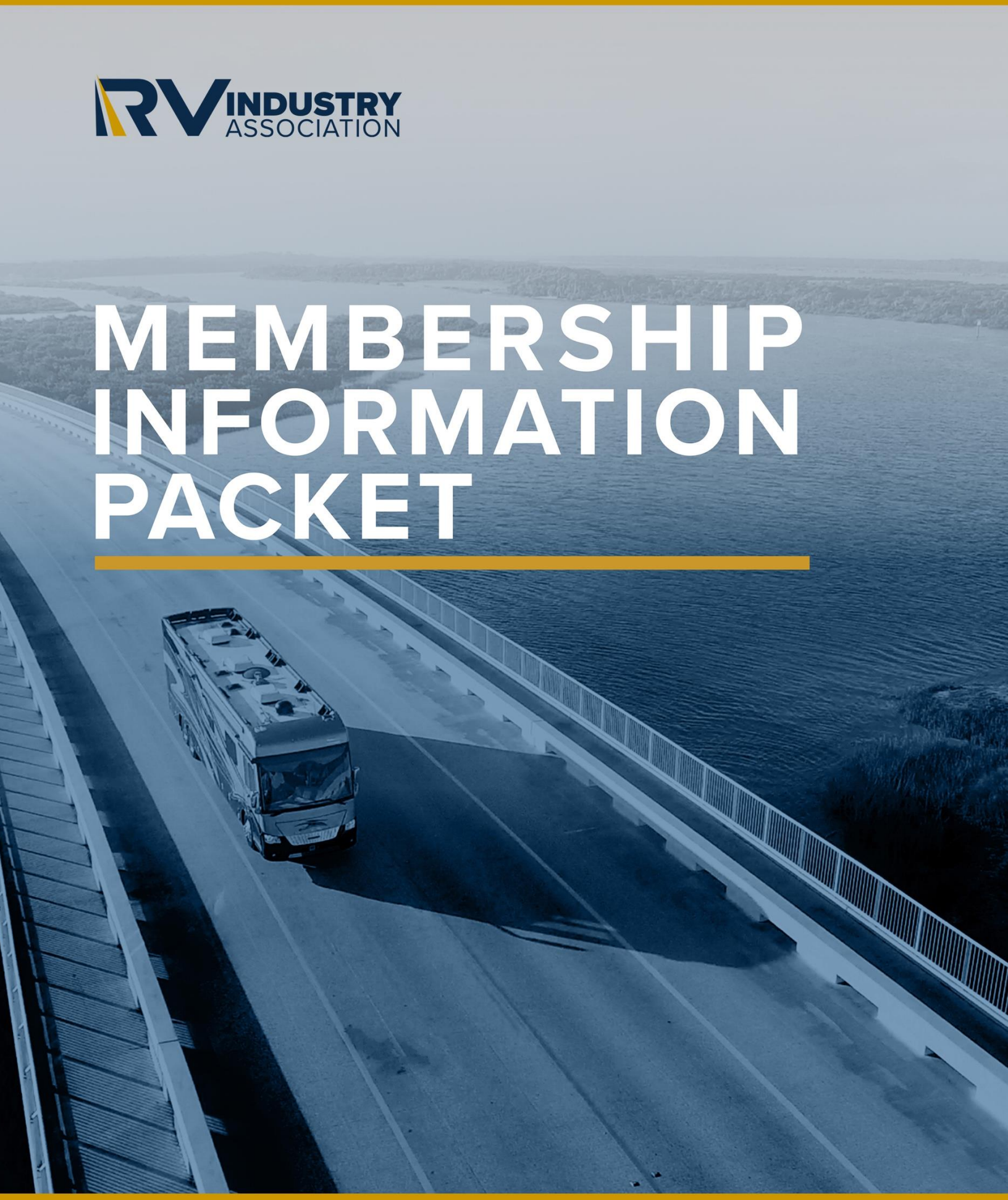
RV INDUSTRY ASSOCIATION

MEMBERSHIP INFORMATION PACKET



RVIA.ORG

Introduction

The RV industry is committed to promoting exploration, adventure, and responsible recreation, while advocating for innovation and conservation in our business practices. As an association, we encourage and promote sustainability, diversity, safety, and the many community activities of our member companies.

The RV Industry Association's Standards program is its greatest member benefit. The Standards Department maintains a professional team of full-time inspectors that promote the enhancement of safety by monitoring adherence to the standards adopted by the Board of Directors for the construction of RVs and Park Model RVs. The team conducts more than 2,000 unannounced inspections of member company RV manufacturing plants annually and provides educational resources and hands-on training to manufacturer members to support their commitment to comply with these adopted codes and standards. RV Industry Association inspectors walk every station along the production line, spot checking representative RV units for compliance with over 500 safety-related standards requirements, talking to line employees and conducting hands-on discussions about these standards.

Every RV and Park Model RV produced by a member manufacturer must display the Association's seal. The seal communicates manufacturers' certification that it has complied with the RV standards adopted by the Association and has been subjected to regular, periodic compliance audits by inspectors, who monitor the thousands of requirements impacting electrical, plumbing, heating, fire & life safety systems and construction of RVs.

RV dealers and consumers look for the RV Industry Association seal on their units, as a visible indication of the manufacturers' commitment to the industry. Moreover, most public and private campgrounds in the United States require that RVs and Park Model RVs have an affixed seal to obtain entry to their park.

What is an RV?

An RV is a vehicular-type unit primarily designed as temporary living quarters for recreational, camping, or seasonal use that either has its own motor power or is mounted on, or towed by, another vehicle. The basic entities are travel trailers, fifth wheel travel trailers, folding camping trailers, truck campers and motorhomes.

Board of Directors Definition;

Section 1-H. Recreation Vehicle. A "Recreation Vehicle" or "RV" is a vehicular type unit that

(i) is primarily designed as temporary living quarters for non-commercial, recreational and/or camping use, as evidenced by the presence of
(a) at least one permanently installed designated interior sleeping facility, and
(b) at least two of the following integrally attached facilities installed by the RV manufacturer: cooking; refrigeration; self-contained toilet; heating and/or air conditioning; a potable water supply system including a faucet and sink; and a separate distributed electrical power supply system;

(ii) is built to the standards for recreation vehicles adopted by the Association's Board of Directors;
(iii) has its own motive power or is mounted on or towed by another vehicle;
(iv) is regulated by the National Highway Traffic Safety Administration as a vehicle or vehicle equipment;
(v) does not require a special highway use permit for operation on the highways; and
(vi) an individual can easily transport and set-up on a daily basis.
The basic product categories are: "Motorhome" and "Non-Motorized RV."

What is a Park Model?

A Park Model RV is a single living unit that is primarily designed and completed on a single chassis, mounted on wheels, to provide temporary living quarters for recreational, camping, or seasonal use, is certified by the manufacturer as complying with all applicable requirements of ANSI A119.5.

> (a) Has a gross trailer area not exceeding 400 square feet (37.15 square meters) in the setup mode or,
> (b) If having a gross trailer area not exceeding 320 square feet (29.72 square meters) in the setup mode, has a width greater than 8.5 ft (2.59 meters) in the transport mode.

Board of Directors Definition;

Section 1-J. Park Model RV. A "Park Model RV" or "PMRV" is a trailer type unit, also sometimes referred to as a recreational park trailer, that
(i) is primarily designed as temporary living quarters for non-commercial, recreational and/or camping use;
(ii) is built to the standards for park model RVs adopted by the Association's Board of Directors;
(iii) is built on a permanent single chassis mounted on wheels; and
(iv) has a gross trailer area not exceeding 400 square feet (37.15 square meters) in the setup mode.

Vehicle Categories

Motorhome



Type A Motorhome

A "Type A Motorhome" is a motorhome constructed on a bare motor vehicle chassis



Type B Motorhome

A "Type B Motorhome" is a motorhome constructed on an automotive-manufactured van-type vehicle; and



Type C Motorhome

A "Type C Motorhome" is a motorhome constructed on a cut-away automotive-manufactured truck chassis.

Towable RV



Travel Trailer

A "Travel Trailer" is a towable RV mounted on wheels and designed to be towed by a motorized vehicle that is constructed with a roof and sidewalls made of rigid materials;



Fifth-Wheel Travel Trailer

A "Fifth-Wheel Travel Trailer" is a towable RV mounted on wheels and designed to be towed by a motorized vehicle by means of a towing mechanism that is mounted above or forward of the tow vehicle's rear axle;



Folding Camping Trailer

A "Folding Camping Trailer" is a towable RV mounted on wheels and designed to be towed by a motorized vehicle that is constructed with a collapsible roof and collapsible partial sidewalls that unfold and extend in the set-up mode and fold back up for travel;



Truck Camper

A "Truck Camper" is a towable RV designed to be placed in the bed of a pickup truck.

Park Model RV



A 'park model RV' is a recreational vehicle primarily designed and intended to provide temporary living quarters for recreation, camping or seasonal use. It is built on a single chassis, mounted on wheels with a gross trailer area not exceeding 400 square feet in the setup mode. Each park model RV is certified by its manufacturer as complying with the ANSI A119.5 standard for park model RVs.

Membership Application

Membership is available to companies and businesses actively engaged in manufacturing RVs and Park Model RVs as well as those providing a product or service, directly or indirectly, to an RV manufacturer, Park Model RV manufacturer, component supplier, aftermarket supplier, or other wholesale participant in the industry. The membership categories are RV Manufacturer, Park Model RV Manufacturer, Supplier, Manufacturer's Representative, Finance Firm, and Associate.

In joining the RV Industry Association, you are becoming part of our collective work to promote the health, growth and expansion of the RV industry. Your annual membership investment helps directly fund the signature programs and initiatives to accomplish this vital goal.

When an applicant is eligible for membership in more than one Association membership classification and desires to benefit from the respective advantages of membership in more than one membership classification, the applicant may obtain separate memberships for each classification of membership upon complying with each classifi-cations' membership requirements.

All manufacturer members are required to provide a monthly report of their recreation vehicle shipments to dealers by vehicle lengths and wholesale values of those shipments. The report must be sent to the RVIA Marketing Department within the prescribed time period. Strict confidentiality of such reports shall be the responsibility of the President and the data shall be used only for developing overall industry statistics, which do not disclose any individual company's confi-dential information.

The term "Recreation Vehicle Manufacturer" is defined to mean a person, partnership, firm or corporation actively engaged in the manufacture of Recreation Vehicles.

Before an applicant for membership as an "RV" member is approved, the appli-cant firm must have an established commercial place of business, meeting all state licensing laws pertaining to the manufacture of recreation vehicles. RV manufacturer members have full voting privileges and are entitled to all Association services.

Annual dues will be based on whole-sale dollar volume and computed on the total sales volume of all recreation vehicle units manufactured by the member.

Compliance with the standard(s) for recreation vehicles and Park Model units adopted by the Board of Directors for sale in the United States is mandatory for manufacturer membership in the Association. This membership requirement also applies to manufacturer's wholly-owned subsidiaries and any other legal entity in which manufacturer has a one hundred percent (100%) ownership interest. No Manufacturer shall be eligible to become or continue as a Manufacturer member of the Association unless it;

(i) furnishes the Association with a writ-ten certification in prescribed form of its intention to make or manufacture recre-ation vehicles or emergency living units for sale in the United States that comply with the standard(s)' adopted by the Board of Directors for such vehicles;

(ii) makes or manufactures recreation vehicles or emergency living units for sale in the United States that comply with the standard(s) adopted by the Board of Directors for such vehicles;

(III) agrees to be subject to a standards inspection by Association inspectors prior to usage of the Membership Identification Seal, and also agrees to submit to unan-nounced periodic standards inspections to be performed by Association inspectors;

(iv) displays the applicable Membership Identification Seal on all vehicles to which the standards are applicable; and

(v) maintains a "quality control" program as approved by the Board of Directors.

Dues Structure

Manufacturer

A business actively engaged in the manufacture of RVs or Park Model RVs. Manufacturer members have full voting privileges and are entitled to all Association services. Manufacturer dues start at $2,040 and are determined by annual sales volume.

Prospective new OEMs must successfully meet all standards inspection requirements and pass an inspection within one year from the date of application. Any company that fails to meet the inspection requirements during that one-year period will need to submit a new application for membership, including a new $10,000 initiation fee, and will again have one year to pass all inspection requirements.

If you have any questions, please contact RV Industry Association Membership Specialist, Frydon Yaqub (571-665-5879, fyaqub@rvia.org)

Annual Sales Volume	Dues	Initiation Fee (Non-Refundable)
$100,000,001 and over	$22,490	$10,000
$60,000,001 to $100,000,000	$20,240	$10,000
$20,000,001 to $60,000,000	$16,820	$10,000
$10,000,001 to $20,000,000	$8,640	$10,000
$3,000,001 to $10,000,000	$6,000	$10,000
$1,000,001 to $3,000,000	$3,320	$10,000
Up to $1,000,000	$2,040	$10,000

The Initiation Fee and must be paid in full with all applications. The Initiation Fee is used to provide new members with technical manuals, market reports and other publications produced and also to enroll them into the many services the Association provides. The larger fee for the manufacturer member applicants is necessary because it covers the cost of two initial standards inspections and any necessary subsequent assistance and/or follow-up to insure compliance with the membership commitment made to the Association. However, if a third or fourth initial inspection is necessary before approval, a manufacturer applicant will be assessed an additional fee.

No payments to RVIA are deductible as charitable contributions for federal income tax purposes. Such payments may be deductible under other provisions of the IRS Code, such as an ordinary and necessary business expense. However, a portion of the dues is not deductible as an ordinary and necessary business expense to the extent that RVIA engages in lobbying activities. The non-deductible portion of membership dues may vary from year to year but will always be presented on your regular clues invoice.

Documents For Membership

Pledge Commitment Form

Type of RV

566/551 NHTSA Certification

Manufacturing Location

Site Contacts

Product Floor Plans

Effective as of June 8, 2023, all new RV and PMRV manufacturer member applicants will be required to (1) pay a $10,000 initiation fee and (2) successfully meet all standards inspection requirements and pass an inspection within one year from the date of application. Any company that fails to meet the inspection requirements during that one-year period will need to submit a new application for membership, including a new $10,000 initiation fee, and will again have one year to pass all inspection requirements.

RV Manufacturer Pledge Form

The undersigned recreation vehicle manufacturer hereby makes this declaration as a condition of membership in the Recreation Vehicle Industry Association ("RVIA"). It must be completed and returned to the RVIA Membership Department.

The undersigned acknowledges that the current member commitments established by the Board of Directors for all RV manufacturers are as follows:

- The member must register as a Vehicle Manufacturer, Final Stage Manufacturer or Alterer (see 49 CFR, Part 566) with the U.S. Department of Transportation, National Highway Traffic Safety Administration ("NHTSA");
- The member pledges to manufacture recreation vehicles in conformance with the standards and program requirements adopted by the RVIA Board of Directors including, but not limited to, the NFPA 1192 Standard on Recreational Vehicles;
- The member pledges to abide by the Bylaws of RVIA, which provide in part for a dismissal process should a member break its membership pledge;
- The member acknowledges that the RVIA Bylaws (see Article III, Section 1-G) defines recreation vehicle as, "primarily designed as temporary living quarters for non- commercial, recreational and/or camping use;"
- The member must identify to RVIA a designated company representative who is responsible for the member's compliance with the adopted standards and program requirements;
- The member is subject to unannounced audits of its manufacturing facilities, at the discretion of RVIA, to audit the member's pledge to comply with the standards and program requirements adopted by the RVIA Board of Directors. If the member fails or refuses to maintain its membership pledge it will be subject to unannounced audits at an increased frequency and agrees to pay RVIA an increased audit frequency fee as established by the RVIA Standards Steering Committee ("SSC") to offset the additional audit costs;
- The prospective member agrees to complete and pass at least one unannounced audit within one year of submitting the prospective member's application.
- Failure to pass at least one audit within the 1-year period will result in the denial of its application and such prospective member would be required to re-apply and pay all application, initiation, and membership fees.
- The member acknowledges that the successful completion of unannounced audits require the member to be in production at its manufacturing facilities and to provide a supervisory representative to accompany the inspector.
- Initial membership dues are due within six (6) weeks of passing the initial unannounced audit. In the event the prospective member fails to make payment in full of initial membership dues within 6 weeks of passing the initial unannounced audit, membership dues will be assessed as of the first of the month of passing the initial unannounced audit.
- If an RVIA inspector is unable to perform an unannounced audit at one of the member's manufacturing facilities, whether due to no production, no representative, or no answer upon arrival, the member will receive a "No Inspection" report. If the member receives three consecutive "No Inspection" reports, the member: (1) will be removed from the inspection schedule and (2) is prohibited from purchasing RVIA seals until it pays a $1,000 fee to be re-instated on the inspection schedule and has completed and passed one full inspection.
- The member must allow RVIA audit inspectors access to all of its manufacturing facilities within one-half hour of an inspector's arrival;
- The member must maintain a pool of at least three member representatives authorized to accompany the RVIA inspector during any audit. Only one such representative is required to accompany the inspector;
- The member agrees to maintain a quality control program that, at a minimum, meets "RVIA's Minimum Requirements for Quality Control Program" as prescribed by the Standards Steering Committee;
- The member agrees to affix and display the applicable RVIA recreation vehicle seal and any other applicable labels required by the adopted standards and program requirements on each recreation vehicle it manufactures for sale in North America.
- The member agrees not to affix an RVIA seal to any product that is not a recreation vehicle.
- In the event the member resigns, is suspended or expelled from RVIA membership, the member agrees to immediately cease applying RVIA seals to its units and will return all RVIA seals in its possession not already affixed to sold units in accordance with RVIA By-Laws (see Article IV, Section 9). The member acknowledges and agrees that this provision of the pledge shall survive such member's resignation, suspension, or expulsion from RVIA membership.
- The member acknowledges its understanding that RVIA seals and the audit program are not a warranty of compliance with the adopted standards and program requirements. The audit program exists for the express purpose of monitoring the member's pledge to manufacture products in conformance with said adopted standards and program requirements.
- Note that any former RV OEM who drops their membership due to suspension, cancellation, acquisition, or any other reason and wishes to rejoin the RV Industry Association will be required to pay a $5,000 fee after a two-year period from the membership cancellation/suspension. If the membership gap is beyond three years, the full $10,000 initiation fee will be required.

[over]

X _____

Name of Company

X _____

Signature of authorized company representative

_____

(Print Name and Title of above representative)

_____

(Print Name of company representative responsible for conformance with the identified standards and program requirements)

_____

(Title) (Phone)

_____

(Mailing address)

_____

(City, State, Zip) (Date)

Park Model RV Manufacturer Pledge Form

The undersigned park model recreation vehicle manufacturer hereby makes this declaration as a condition of membership in the Recreation Vehicle Industry Association ("RVIA"). It must be completed and returned to the RVIA Membership Department.

The undersigned acknowledges that the current member commitments established by the Board of Directors for all Park Model RV ("PMRV") manufacturers are as follows:

- The member pledges to manufacture PMRVs in conformance with the standards and program requirements adopted by the RVIA Board of Directors including, but not limited to, the ANSI A119.5 Standard on Recreational Park Trailers;
- The member pledges to abide by the Bylaws of RVIA, which provide in part for a dismissal process should a member break its membership pledge;
- The member acknowledges that the RVIA Bylaws (see Article III, Section I-I) defines PMRVs as, "primarily designed as temporary living quarters for non- commercial, recreational and/or camping use;"
- The member must identify to RVIA a designated company representative who is responsible for the member's compliance with the adopted standards and program requirements;
- The member is subject to unannounced audits of its manufacturing facilities, at the discretion of RVIA, to audit the member's pledge to comply with the standards and program requirements adopted by the RVIA Board of Directors. If the member fails or refuses to maintain its membership pledge it will be subject to unannounced audits at an increased frequency and agrees to pay RVIA an increased audit frequency fee as established by the RVIA Standards Steering Committee ("SSC") to offset the additional audit costs;
- The prospective member agrees to complete and pass at least one unannounced audit within one year of submitting the prospective member's application.
- Failure to pass at least one audit within the 1-year period will result in the denial of its application and such prospective member would be required to re-apply and pay all application, initiation, and membership fees.
- Initial membership dues are due within six (6) weeks of passing the initial unannounced audit. In the event the prospective member fails to make payment in full of initial membership dues within 6 weeks of passing the initial unannounced audit, membership dues will be assessed as of the first of the month of passing the initial unannounced audit.
- The member acknowledges that the successful completion of unannounced audits require the member to be in production at its manufacturing facilities and to provide a supervisory representative to accompany the inspector.
- If an RVIA inspector is unable to perform an unannounced audit at one of the member's manufacturing facilities, whether due to no production, no representative, or no answer upon arrival, the member will receive a "No Inspection" report. If the member receives three consecutive "No Inspection" reports, the member: (1) will be removed from the inspection schedule and (2) is prohibited from purchasing RVIA seals until it pays a $1,000 fee to be re-instated on the inspection schedule and has completed and passed one full inspection.
- The member must allow RVIA audit inspectors access to all of its manufacturing facilities within one-half hour of an inspector's arrival;
- The member must maintain a pool of at least three member representatives authorized to accompany the RVIA inspector during any audit. Only one such representative is required to accompany the inspector;
- The member agrees to maintain a quality control program that, at a minimum, meets "RVIA's Minimum Requirements for Quality Control Program" as prescribed by the Standards Steering Committee;
- The member agrees to affix and display the applicable RVIA PMRV seal and any other applicable labels required by the adopted standards and program requirements on each park model recreation vehicle it manufactures for sale in North America.
- The member agrees not to affix an RVIA seal to any product that is not a park model recreation vehicle.
- In the event the member resigns, is suspended or expelled from RVIA membership, the member agrees to immediately cease applying RVIA seals to its units and will return all RVIA seals in its possession not already affixed to sold units in accordance with RVIA By-Laws (see Article IV, Section 9). The member acknowledges and agrees that this provision of the pledge shall survive such member's resignation, suspension, or expulsion from RVIA membership.
- The member acknowledges its understanding that RVIA seals and the audit program are not a warranty of compliance with the adopted standards and program requirements. The audit program exists for the express purpose of monitoring the member's pledge to manufacture products in conformance with said adopted standards and program requirements.
- Note that any former PMRV OEM who drops their membership due to suspension, cancellation, acquisition, or any other reason and wishes to rejoin the RV Industry Association will be required to pay a $5,000 fee after a two-year period from the membership cancellation/suspension. If the membership gap is beyond three years, the full $10,000 initiation fee will be required.

[over]

X _____

Name of Company

X _____

Signature of authorized company representative

_____

(Print Name and Title of above representative)

_____

(Print Name of company representative responsible for conformance with the identified standards and program requirements)

_____

(Title) (Phone)

_____

(Mailing address)

_____

(City, State, Zip) (Date)

Overview of RVIA Standards Program and Enforcement

The RVIA Bylaws describe certain mandatory requirements that apply to all RV and Park Model RV manufacturer members. As a condition of their membership in RVIA, manufacturers must comply with the applicable standards adopted by the Board of Directors and agree to regular standards inspections that audit their compliance with this obligation. This standards program is administered by the Standards Department as an essential function of the Association.

Standards inspectors routinely make unannounced visits to all member production facilities at approximate eight (8) week intervals. Accompanied by plant managers, the inspectors then carefully examine representative units under production, note any deviations from standards requirements that are found and provide education and assistance on understanding the reason for such deviations and applicable standards provisions. Manufacturers are expected to address and correct identified standards deviations prior to subsequent inspections. A pattern of failure to do so may lead to a period of Staff Imposed Probation (SIP). The overall goal of SIP is to educate and assist the manufacture to achieve compliance with the standards.

If a member manufacturer fails or refuses to correct repeated findings of standards deviations while on SIP, RVIA staff will inform the SCC Chair who will activate the Enforcement Board. The manufacturer will be informed in writing that it's eligibility for membership is in question on grounds of non-compliance with the Bylaws; and that it is entitled to a hearing on the issue if requested within 15 days. If so requested, the SSC Chair will notify the Enforcement Board members, RVIA's General Counsel and the member company's official representative of the date, time and location of the hearing. This hearing cannot be conducted via conference call. Following such a full hearing, the Enforcement Board may impose further conditions and probationary period requirements on the member. If the Enforcement Board recommends that the member be expelled, the member can appeal that decision to the Board of Directors.

Standards Compliance and Inspection Program

RVIA employs a staff of full-time professional standards inspectors who conduct at least six to eight unannounced inspection visits annually to each member manufacturer. The inspector performs an on-line inspection from chassis to final finish, checking RV units for compliance with over 500 safety related requirements. When the inspector discovers a violation, it is documented on an inspection report explaining the problem. A copy of the report is issued to the line supervisor and to the firm's management. On serious violations or repeated deviations, the manufacturer is given 10 days to respond in writing, detailing what has been done to correct the fault and what steps have been taken to assure the fault will not be repeated.

Follow-up unannounced inspections are also conducted to verify compliance, if the manufacturer still fails or refuses to comply, the manufacturer is subject to disciplinary action ranging from staff-imposed probation (which results in more frequent inspections) to a formal hearing before the RVIA Standards Enforcement Board.

Standards Inspection Staff Policies and Procedures – Part IV Work Methods and Techniques

V. INSPECTION WORK METHODS AND TECHNIQUES

A. **When and Where**

1. Trip Scheduling and Planning

Each inspector is responsible for keeping a set of Master Trip Sheets, updated weekly as changes from the Education Administrative Assistant are received. Each inspector is responsible for remaining current on companies to be inspected during any given week. This would include applicant inspections, as well as SIP inspections. As insurance against missed companies, each inspector shall call the Senior Inspector Chief Inspector to check for new companies, prior to beginning any given trip. Failure to perform an inspection during any given week due to not following the above outlined procedure may result in disciplinary action.

The last two inspection reports (not including ″No Inspections″) must be in the inspector's possession when performing an inspection. NOTE: These are on the electronic device when completing inspections electronically and readily available.

When performing an inspection it is absolutely essential that the inspector NEVER keep inspection reports that are older than the previous two actual inspection reports. In the case of a manufacturer who is no longer an RVIA member, the entire inspection file must be destroyed.

Address changes, plant closings or any other changes in the Trip Sheets noted during the weekly inspections must be documented and changes emailed to the Standards Administrator/Chief Inspector to capture the changes in the Inspection Software.

2. Inspection Hours

The inspector's normal work day is from 8:00 A.M. to 5:00 P.M. Time flexibility is permitted to dovetail with the factory hours or possibly with those of the plant contact. However, since the manufacturers have agreed to unannounced inspections, every effort should be made to perform the inspection on the first attempt.

In general, no inspection should begin after 4:00 P.M., unless there are special circumstances such as late working hours or even a second shift in the factory.

3. Canadian Inspection Stops

At the beginning of any trip containing Canadian companies, the inspector will phone ahead to determine whether there is U.S. production on line. If there is no U.S. production claimed, fill out the inspection report as no inspection performed with notes indicating the member did not have US productions efforts present at the time of inspection.

Manufacturers having units with a ″non-classified″ destination (all units built to be convertible for U.S. sale) must have all units inspected. Also Canadian manufacturers have the option of

requesting RVIA to inspect CSA units, but if they so choose, any deviation found counts toward repeats.

4. Advance Notice of Inspections

Inspectors are not to set-up inspections in advance: no prior notice is allowed. However, there can be an exception: that of member applicants and Canadian companies.

5. Unfinished Trips

In cases where it is unavoidable that a trip is not completed, the following procedure must be followed:

a. If an inspector is going to miss a company, it should be reported to the Standards Administrator/Chief Inspector or Director of Inspection Services beforehand.

b. Note missed companies to the Chief Inspector/ Director of Inspection Services at the Elkhart office.

c. Document companies missed with reason(s) within the inspection software notes.

d. Fill out an inspection report as no inspection with an explanation in the comment section of why the company was missed for each company not inspected. (There must be one inspection report for each ID# on the trip sheet.)

6. Denial of Access

If the inspector is denied access to a factory, he must call the Senior Director of Standards/Director of Inspection Services immediately.

C. No Inspection Versus No Production

The inspector is to perform an inspection whenever possible. This means companies are to be inspected whether in production or not. If a company is not in production any units on the line or in the yard shall be inspected, as well as test equipment checked.

There are only two types of reports:

1. Inspection Performed
   The inspection report either has deviations cited or ″no deviations noted″ writ- ten on the report, regardless of whether the company is in production or not. Also, the Set/Test must be checked whether the company is in production or not. When test personnel are not present, the test equipment must be checked.

2. No Inspection Performed
   Document the reason for the inspection was not performed. ″Not in production″ is not an acceptable reason for not performing an inspection. Also, document in the inspection software comment section to the reason the inspection was not performed.

The ″No Inspection″ situation should be rare because there are three possible areas of

justification. First is if there are no units whatever to inspect; neither on the line or in the yard, complete or incomplete, that have not previously been inspected by an RVIA inspector. The second is when the company absolutely refuses to allow the inspection, even after the inspector has explained that our policy is to always inspect; and the company is obliged to provide someone to accompany the inspector. A third is when the plant is obviously closed with the doors locked, and there are no units, cars or people present.

D. What to Inspect

1. Range of Inspection, RV/PM Definitions

   Every unit on the line needs to be inspected; every production unit is to be inspected. The only real question that might come up is whether or not the product is an RV or PM. While there are certainly borderline cases that can be argued, the best approach is to use the respective definition of recreational vehicle or park model, appearing in the definitions section of NFPA 1192 or ANSI A119.5. The key phrases are ″vehicular or trailer type,″ ″designed as temporary living quarters″, and ″for recreational, camping or travel use″. The fact that the unit may be designated by the manufacturer as a ″commercial″ unit will not necessarily take it out of the RV or PM category for our inspection purposes. For clarification of any borderline cases, the Chief Inspector, Director of Inspection Services, Senior Director of Standards, or Vice President should be called for an on-the-spot ruling.

   Only new, not previously owned units are to be inspected. Units that are not new but are having additional work performed by the manufacturer are not to be inspected.

2. New Member Inspections

   The first inspection report of a member applicant must be clearly marked ″Pending Member″ in our inspection software and identified on trip sheets with a ●. If there are Class A or Class B deviations, they are to be noted, but the ten-day response letter will not be required. The report is to be submitted through the inspection software within 48 hours.

3. Membership Renewals

   During yearly membership renewals, manufacturing members that dues have not been collected from will be denoted with "DUES" in front of their site ID name. This will assist the inspection team to remind site contacts to renew their membership with the RV Industry Association. After March 1st any member's that do not renew their membership will be removed from the Inspection Schedule and Trip Sheets. Membership reports are sent out weekly to the inspection team to review for any changes throughout the year.

4. Export Units

   When RV units for export are built to foreign specifications and documented that they are to be shipped out of the USA, they are not inspected, and no RVIA seal is attached. However, if the manufacturer wants to attach the seal (often in vans for export), the

units are to be inspected, regardless of destination. Note that the manufacturing member has the option of not attaching the seal to export units if he so chooses.

5. Prototype Units

Prototype units found on the actual production line must be inspected to the applicable standard. The only exception to this is when a prototype unit is located in a separate R&D area and not on the production line; inspection of these units will be advisory only. Any units on the production line whether ″prototypes″ or regular production units will require compliance with all inspection requirements.

6. Special Order Units or Custom Units

When a unit is classified by the manufacturer as a ″special″ or custom unit (i.e. built to purchasers specifications) the unit will be inspected and any deviations to the adopted standards will be cited.

7. Yard Units

Yard units, whether incomplete or completed (seal affixed) are subject to the inspection process. Unless the "traveler sheet" documents whatever might be incomplete about a given unit, deviations found on these units will be cited.

In any case all RV units on the premise whether incomplete or complete are subject to the inspection program. Every effort should be made to inspect units in all stages of production, including finished yard units.

8. Handicap Units

Handicap units shall be inspected, but the handicap-related equipment (including wiring and overcurrent protection for the special equipment) is not to be inspected.

9. Commercial Units

Units built to be used for commercial purposes and not primarily designed for use as "temporary living quarters for recreational, camping or travel use" will not be inspected. Many RV Manufacturers also produce commercial products built on the same "shell" as their RV products. Examples are transport buses, mobile medical units, mobile sales units, or any other unit where final use is not as a "Recreational Vehicle" as defined in NFPA 1192 The Standard for Recreational Vehicles.

10. Import Units

Units built outside of the United States and Canada are considered Import Units and require the member applicant to have four inspections per calendar year at their out of country production facility. Members will have to retain a third-party inspection agency in order to fulfill the out of country policy.

POLICY FOR RVIA RV MANUFACTURER MEMBERS SEEKING TO IMPORT UNITS OR SHIP FROM OUTSIDE THE CONTINENTAL USA (Other than Canada)
EFFECTIVE – October 08, 2008

RVIA RV manufacturer members seeking to import or ship RVs into the continental United States must contract with an approved third party inspection agency that will agree in writing to verify compliance with standards adopted by RVIA. The third party inspection agency must meet the conditions and criteria outlined below.

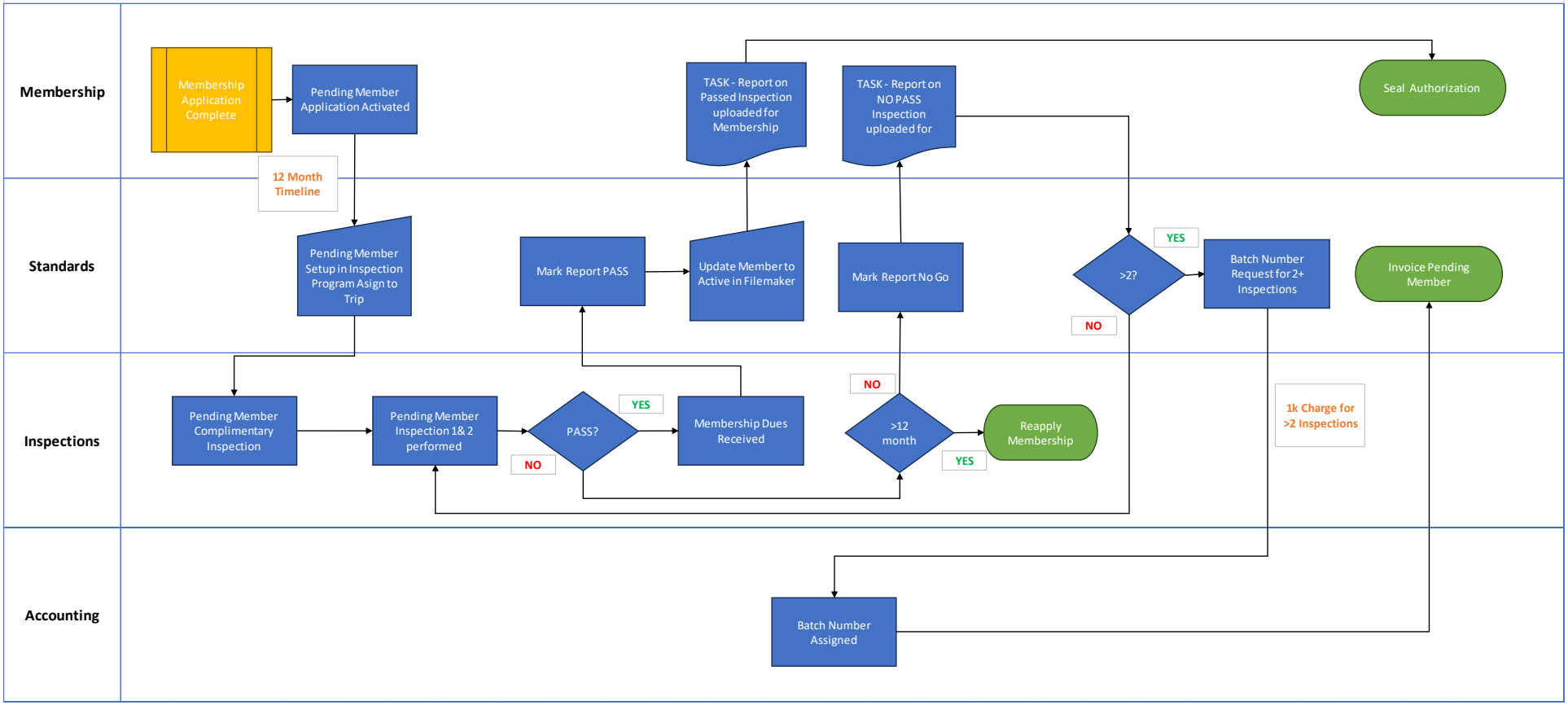
The organization seeking RVIA recognition as a third party inspection agency must submit information to RVIA to document that they:

1. Are accredited at a minimum to ISO/IEC 17020 - *General Criteria for the Operation of Various Types of Bodies Performing Inspections,* through an identified registrar.
2. Are not under the jurisdiction or control of any manufacturer or supplier for any affected industry.
3. Agree to provide proof of the inspection agency's bonding.
4. Agree to submit on an annual basis a certification report regarding the out of country production facility.
5. Agree to timely submit on a regular basis quarterly reports of production line inspections at the facility as required by RVIA, including verification that all required systems tests are being performed.
6. Agree to submit reports on the correction of all repeated deviations and action taken to prevent the reoccurrence of such non compliances by the facility.
7. Agree to allow RVIA to schedule monitoring inspections of the RV units at least once a year.
    a) If importation is conducted in numbers or schedule that does not merit annual inspection or is unaligned with RVIA's Annual Schedule this may result in additional fees to be paid by the member directly to RVIA to cover inspector travel expenses to the port(s) outside that prescribed RVIA Annual Schedule.
8. Agree to annual inspection staff training by RVIA at location determined by RVIA.
9. Agree to receive, maintain and distribute RVIA seals as directed by RVIA for inspection control purposes.
10. Acknowledge understanding that falsified reporting can result in loss of RVIA recognition.
11. With respect to "Third Party Inspection Agencies" that lose their accreditation to ISO/IEC 17020:
    a) The inspection agency must notify RVIA in writing within 30 days regarding their loss of accreditation and must resolve the accreditation issue within 90 days, inclusive, of such notification.
    b) If the issue is not resolved within 90 days, the inspection agency will be terminated as a recognized inspection agency and the RVIA RV manufacturer member will be immediately notified of such termination.

Revised 07/15/2024
SE13073/gg

RV INDUSTRY ASSOCIATION

PENDING MEMBER INSPECTON PROCESS



Minimum Requirements for RVIA's Quality Control Program

A quality control program shall be maintained, and it shall contain the requirements set forth below. A manual shall be prepared outlining how these requirements shall be implemented. The word "standards" as used below shall mean the NFPA 1192 Standard for RVs, National Electrical Code, and ANSI/RVIA LV Standard for Low Voltage Systems in Conversion and RVs, as applicable.

1. A person or organization shall be designated who shall have authority and responsibility to enforce the quality control program and who shall report to a member of management who has responsibility extending beyond production.
2. A system shall be established that provides documentation with respect to drawings, standards, specifications or tests used in connection with compliance with the applicable standard(s).
3. Testing as required by the standards shall be performed on each vehicle.
4. Check lists shall be employed for each vehicle and shall include all testing, required in the applicable standard(s). Each check list shall contain a description of the vehicle (type and model), vehicle identification number, and date(s) of inspections. The appropriate parts of the check list shall be signed by the person who has performed the inspection or test; initialing is not acceptable.

(SNB-10/11)

Type A, B, & C deviation Classification Summary

Applicable to NFPA 1192 - 2021, NEC - 2023, & ANSI/RVIA LV - 2020

Type "A" Deficiency are considered most severe.
Type "B" Deficiency are considered severe.
Type "C" Deficiency are considered less severe.

The RVIA RV Deviation Database identifies all potential deviations with respective Type "A", "B", or "C" classifications.

For a current list of RVIA Inspection Program Deviations please visit RVIA's website at www.rvia.org and follow the instructions below: (NOTE: this list and section of the website is available to RVIA members only)

1. NOTE: You will be required to have a valid member log-in.
2. Hover cursor over the "Standards & Regulations" tab.
3. Select "RV Inspection Process and Deviation Database" from the drop-down menu.
4. Scroll to the end, or bottom of the page.
5. Click the "View the RV Deviation Database", or "View the Park Model RV Deviation Database" link.
6. A PDF version of the document will open in a new tab on your web browser.
7. You can download or print the document using the icons in the upper right corner.

Sample RVIA Deviation Database

The Standards Department tracks and aggregates the most common deviations that result from inspections at member companies across the board. Members may access the Deviations Database Documentation for a generic, industry-wide reference regarding the most frequently cited deviations on a quarterly basis.

Standard	Sub	Type	Discipline	Description
551.45(C)	01	C	120V	A main overcurrent protection device shall be installed in any panelboard containing three or more branch circuits.
551.45(C)	02	C	120V	Panelboard shall be of the dead front type.
551.46(A)	01	C	120V	The power supply assembly shall be factory supplied Or factory installed.
551.46(A)(1)	01	C	120V	Male, recessed-type motor-base attachment plug shall be used if a separable power supply assembly is used.
551.46(A)(2)	02	B	120V	Permanently connected power supply assemblies must be provided with a means to prevent strain from being transmitted to the terminals.
551.46(A)(2)	02	B	120V	Power supply assembly must be protected by a grommet or equal where it passes through walls or floors.
551.46(A)(2)	03	B	120V	Power supply assembly shall be protected from physical damage. (specify)
551.46(B)	01	C	120V	If point of entrance for power supply assembly is more than 3feet above ground, cord length must be increased by vertical distance of cord above 3 feet mark.
551.46(B)	02	B	120V	Power supply assembly shall be listed for RV use.
551.46(B)	03	C	120V	When point of entrance of power supply assembly is on the rear of the vehicle, minimum 30 feet of exposed cord is required.
551.46(B)	04	C	120V	When point of entrance of power supply assembly is on the side of the vehicle, minimum 25 feet of exposed cord is required.
551.46(D)	01	C	120V	Label at electrical entrance shall be affixed to exterior skin at or near point of entrance of the power supply cord. (specify)
551.46(D)	02	C	120V	Need "Labeling at Electrical Entrance" label.
551.46(D)	03	C	120V	Need proper electrical entrance label. (specify)
551.46(E)	02	C	120V	Point of entrance for power supply assembly shall be on the left (road) side of vehicle.
551.46(E)	03	C	120V	Point of entrance of power supply assembly shall be within 15feet of rear of vehicle unless required power cord length is increased. (specify)
551.46(E)	04	C	120V	When point of entrance of power supply is on rear of vehicle, it shall be left of longitudinal center.
551.46(E)	05	C	120V	Power supply assembly entry shall be within 18 inches of outside wall.
551.47(B)	01	C	120V	All cut ends of conduit and tubing shall be reamed or otherwise finished to remove rough edges.

Sample RVIA Inspection Form with Repeated Deviation

The sample report below is emailed to company contacts identified by the member to receive the inspection reports. If a report meets the criteria for a response, it will be indicated in the email Subject line, a response is required. All communications should remain on the same email chain addressed to devresponse@rvia.org.

RECREATION VEHICLE INDUSTRY ASSOCIATION 3333 Middlebury Street. • Elkhart, IN • 46516-5587 Phone: 574-549-9080 Recreation Vehicle Inspection Report			**Office Use** Start 5/26/24 Trip 205 Plant ID 124878 SIP Inspection
Manufacturer: ABC Location: Somewhere, NA Prior inspection 1: 4/8/2024 Prior inspection 2: 2/7/2024			Date: 5/29/24 Product: TT Seals Used: Yes Seals Number: SB119511 Status: Active Response Letter Date: **6/12/2024**
○ 5.3.18.1	01	Propane piping shall be secured and supported in place at intervals of not more than 4 feet. ^	TT
✓ ○ 551.47(G)	01	Where cable is less than 1-1/4 inches from inside or outside of stud, cable shall be protected by steel. ^	TT
○ 5.3.8.2	01	Propane tubing or hose shall be protected where it passes through walls/floors/partition/ roof. (specify)	TT
Comments:			
Inspection Contact: John Hancock		Inspector Name: Inspector	
Contact Signature: *John Hancock*		Inspector Signature: *Inspector*	
☐ Square Denotes "A" Deviation Circle Denotes "B" Deviation ✓ Check Mark Denotes Repeated Deviation			

SAMPLE

Sample RVIA Letter sent to office Representative Company (Response Required)

Below is a sample email that is automatically distributed to the contact list once the inspection is completed. Below example is showing that this report requires a response. Please note to keep all communication response to the same email chain in the subject line and directed to devresponse@rvia.org.

Subject: *124878 – Company ABC. RVIA Inspection Report 5/26/2024 - 205- Response Needed*

Notification of Response Required from Manufacturer Following Inspection

Plant ID: 123456
Company ABC
123 Nowhere Hill Road
Somewhere, US 12345

Representative
representative@representative.com

Representative 2
representative_2@representative.com

Dear Representative

The inspection report dated 5/26/2024 indicates the following:

B 2 Occurrences 551.47(G) Where cable is less than 1-1/4 inches from inside or outside of stud, cable shall be protected by steel. ^

The deviation(s) noted above were reviewed with the plant contact and were confirmed that they would not have been corrected by the plant's quality control program.

In accordance with the RVIA standards regulations, a notification of correction providing details of the action taken to correct and prevent recurrence of the subject deviations(s) is requested from you by (to be received within ten business days).

Curt Richardson
Director, Inspection Services

SAMPLE

RVIA Criteria for Inspection Procedures

1. *To determine repeated deviations:*
    a. *Only the previous two inspection reports which are not older than six months will be referenced.*
    b. *A deviation will be considered to be repeated regardless of the model inspected if the same deviation had previously been recorded within the same production facility.*
    c. *Only a specific deviation noted in previous reports will be used to determine repeated violations.*

2. *The mere placing of an order for the corrective part or material is not considered adequate corrective action for a deviation.*

3. *The depletion of inventory of nonconforming parts or materials will not be acceptable unless specifically approved by the RVIA Standards Enforcement Board and in no case will it be approved for a Class "A" deviation.*

4. *A once repeated Class "A" deviation, a twice repeated Class "B" deviation, or a three times repeated Class "C" deviation will invoke one of the following standard enforcement procedures:*
    a. *The company's inspection records will be conveyed to the RVIA Standards Enforcement Board to determine whether the manufacturer should be expelled from RVIA; or*
    b. *If in the judgment of the Vice President of Standards, a member in noncompliance shows a willingness to comply with applicable standards, to correct deviations noted, to take actions to prevent their reoccurrence and to submit response letters as requested, the member may be placed on staff-imposed probation (SIP).*

5. *Each RVIA inspection report that reveals more than three CLASS A deviations, or five CLASS B deviations, or five CLASS C deviations would invoke one of the following Standards enforcement procedures:*
    a. *A follow up telephone call to the official representative to ensure they become aware that the results of the inspection far exceed the RVIA National Quarterly Average (NQA). The NQA is calculated by taking the total number of deviations for each classification (A, B or C) and dividing by the number of inspections for a given quarter.*
    b. *A manufacturer may be placed on staff imposed probation, if the manufacturer has exceeded the above more than once. The current report, plus the previous two inspection reports that are not older than six months will be considered for determining when the manufacturer has exceeded the above more than once.*

E-mail response to the RVIA Standards Department at devresponse@rvia.org.

Inspector
Inspector I, Standards
3333 Middlebury Rd
D *574 8000981*
O *574 549 9080*
M *574 404 1987*

SAMPLE

Elkhart, IN 46516

Sample Manufacturer Response Required to Deviation Form

Below is a sample of a letter Company ABC provided by responding to the inspection report email chain that requires a response from the company identifying their corrective actions.

Dear Curt,

Recently, during a line inspection on 05/26/24, at our Plant #64 (ID 123456) in Somewhere, US it was brought to our attention with a repeat Class B Violation, 551.47(G), cable shall be protected by steel when stud is less than 1-1/4". The issue was addressed during the inspection, personnel are fully aware that 120V is to be protected when routed in a stud less than 1- ¼" with steel sleeves.

Our production manager has made all production staff and quality control inspectors within manufacturing aware of the need to follow all procedures to make certain we are in full compliance to the code. Our corporate auditors will note the deviation on our QC Traveler for a 100% inspection process until our next inspection conducted by RVIA. This means the process will be observed by the employee, QC, and Group Leader then signed off on the traveler and on the 100% checklist everyday as well as our auditor reviewing this installation with the employee once daily until fully corrected.

We appreciate your inspector, Inspector 1 for his patience and good instruction while helping us work through this process.

We appreciate you inspection staff's willingness to work with the manufacturers as we continue our full efforts toward compliance to NFPA 1192 and all applicable codes on a daily basis.

Best Regards,

Representative
Director,
Codes and Standards
Company ABC

Representative 2
Codes and Standards
Company ABC

SAMPLE

RVIA Guidelines for Staff Imposed Probation (SIP)

The RVIA Bylaws describe certain mandatory requirements that apply to all RV and Park Model RV manufacturer members. Article IV, Section 4 states that, as a condition of their membership in RVIA, these manufacturers must comply with the applicable standards adopted by the Board of Directors and agree to regular standards inspections that audit their compliance with this obligation. This standards program is administered by the Standards Department as an essential function of the Association.

Manufacturers are expected to address and correct identified standards deviations prior to subsequent inspections. A pattern of failure to do so may lead to a period of Staff Imposed Probation (SIP). The overall goal of SIP is to educate and assist the manufacture to achieve compliance with the standards.

If a member manufacturer fails or refuses to correct repeated findings of standards deviations while on SIP, RVIA staff will inform the SCC Chair who will activate the Enforcement Board. The manufacturer will be informed in writing that it's eligibility for membership is in question on grounds of non-compliance with the Bylaws; and that it is entitled to a hearing on the issue if requested within 15 days. If so requested, the SSC Chair will notify the Enforcement Board members, RVIA's General Counsel and the member company's official representative of the date, time and location of the hearing. This hearing cannot be conducted via conference call. Following such a full hearing, the Enforcement Board may impose further conditions and probationary period requirements on the member. If the Enforcement Board recommends that the member be expelled, the member can appeal that decision to the Board of Directors.

The specific circumstances and procedures that govern Staff Imposed Probation, Enforcement Board Activation and Enforcement Board Hearings are as follows:

The Standards Steering Committee established guidelines for staff imposed probation to be used at the discretion of the Vice President of Standards.

Primary List - Inspection Items/Testing

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– Appendix

RVIA - RV
Master List - Inspection Items/Testing

SET		DESCRIPTION	# OF ITEMS
A	1	Vehicle Roof	4
A	2	Incomplete Vehicle - Electrical	11
A	3	Battery Compartment	6
A	4	Generator	12
B	5	Converter	4
B	6	Complete Vehicle - Interior	26
B	7	Complete Vehicle - Exterior	13
C	8	Propane Tank System	18
C	9	Propane Piping System	10
C	10	Furnace	10
C	11	Water Heater	4
D	12	Range - Range Hood	13
D	13	Refrigerator - Refrigerator Compartment	7
D	14	Panelboard	11
D	15	Receptacle - Outlet Boxes	12
E	16	Underneath the Chassis	12
E	17	Air Conditioner	3
E	18	In Plant Items	10
E	19	Tags - Labels	10
F	20	Plumbing - Water Distribution System	8
F	21	Plumbing - Drain System - General	7
F	22	Plumbing - Drain System - Traps/Trap Arms	6
F	23	Plumbing - Drain Systems - Vents	7
F	24	Plumbing - General	7

TESTING

1	Pre-appliance propane test - minimum of 3 lb. for 10 minutes (5.3.19) A
2	Final propane test - 10 to 14" H20 column - soap fittings (5.3.20) A
3	LV and 120V equipment operational test (551.60, 8-1) AC
4	120V dielectric testing - 1080V for 1 second, 120V polarity and continuity testing (551.60) AAB
5	Water piping systems pressure test at 80 psi to 100 psi (7.7.2.1) B
6	Plumbing drain system leak test, flood test, static water test and flow test of plumbing system (7.7.3) (7.7.3.3.1)(7.7.3.3.3) BBC

Primary List – Inspection Items (Sets A – F)
PLUS TESTING

SET A

1. Vehicle Roof

_____ Vent pipes terminate at least 1" above roof (7.6.7.1) B Flashing around vent pipes (7.6.8.2) B
_____ Vent pipes (holding tank) 3' from any motor driven air intake (7.6.8.1) B
_____ Refrigerator top vent size (Check vs. installation instructions)(5.4.5.1) B

2. Incomplete Vehicle-Electrical

_____ Routing and protection of wire (5-1)(551.47(G)) BB
_____ Protection and routing of 120V wire (551.47(G))(551.47(K)) BB
_____ Mounting of outlet boxes (551.47(E)) C
_____ All NMS cable continuous between outlet boxes(551.47(F)) C
_____ Securing and protection of LV wire (5-1)(5-3.3) BB
_____ Overcurrent protection ampacity/marking fuseholders (3-2)(3-4) BB
_____ Anchoring of NMS cable every 4 1/2' and within 12" of box (551.47(I)) C
_____ Non-metallic box without cable clamps supported within 8" (551.47(J)) B
_____ Interior circuits minimum 90oC, engine compartment circuits 125oC (4-2) C
_____ Flexible cord used to provide power to slide-out is per requirements (551.47(P)(1))(551.47(P)(2)) ABC

3. Battery Compartment

_____ Compartment vapor resistant to interior of vehicle (2-3) B
_____ Battery secured (2-3) B
_____ Battery compartment vented 1.7 sq. in. top and bottom (2-3) B
_____ Fuse w/i 18" of battery (3-5) B
_____ No spark or flame producing equipment (2-3) B
_____ Venting of battery compartment within 2" of top and bottom of compartment (2-3) B

4. Generator

_____ Compartment vapor resistant to interior of vehicle (6.4.5.2) A
_____ Conductors of generator/outside source not connected at same time (551.30(B)) A
_____ Vented in accordance with manufacturers instructions (551.30(D)) C
_____ Generator secured to avoid displacement and bonded to chassis (551.30(A)) C
_____ Supply conductors in metal conduit (551.30(E)) C
_____ Supply conductors for generators installed below floor level are in listed liquid tight conduit and wet
_____ location J-box used when required (551.30(E)) C
_____ Location of generator exhaust (6.4.3.1) A
_____ Fuel system installation (5.9) ABC
_____ Location of tank installation (5.9.6.4.1)(5.9.6.4.2)(5.9.6.4.3) BBB
_____ Securing of fuel tank (5.9.6.5) B
_____ Fuel filler pipes sealed to interior/fuel resistant material (5.9.7.5)(5.9.7.6) BB
_____ Fuel system not be in contact with electrical wiring (5.9.8.11) B

SET B

5. Converter

_____ Listed for RV use (551.20(B)) B Converter rating calculation (551.20(B)) B
_____ Converter enclosure bonded to chassis with continuous #8 ground (551.20(C)) B
_____ Auto transformers shall not be used (551.20(E)) A

6. Complete Vehicle - Interior

_____ Mirrors over 431 sq. in. safety backed (6.1.4) A
_____ Interior paneling, shower/tub walls have flame spread less than 200 (6.1.1.1) B
_____ Cellular foam shall not be used for interior finish (6.1.1) B
_____ Two unobstructed, non-overlapping means to alternate escape (6.2.1.2) B
_____ Secondary means of escape and access (not on same wall) (6.2.2.2) B
_____ Operation of means of escape - 20 lb. force will open (6.2.4.2) B
_____ Size of secondary means of escape (6.2.5.1) B
_____ Marking of secondary means of escape - exit labels location, red handles (6.2.3.2)(6.2.3.3) CB
_____ Fire extinguisher minimum 1A-10B:C (6.4.1.2) C
_____ Fire extinguisher installed in accordance with NFPA 10 (6.4.1.3) C
_____ Smoke alarm and label installed where required (6.3.1.4)(6.3.1.5)(6.3.3)(6.3.4) BBBB
_____ Smoke alarm listed for RV use (6.3.2) B
_____ Receptacle location - every 6' and w/i 12" of counter space (551.41(A),(B)) C
_____ 120V fixtures have non-combustible backing (551.53(A)) C
_____ Exposed metal parts - effectively bonded (551.55(A)) A
_____ Exposed non-current carrying metal parts effectively bonded (551.56(A)) (551.56(B))(551.56(C))(551.56(D))(551.56(E))(551.56(F)) AAAAAB
_____ GFCI overcurrent protection for bathroom, kitchen, and outside receptacles (551.41(C))A
_____ Seal under front of refrigerator (5.4.5.1) A
_____ Tag requirements - see tag section of checklist
_____ Fuel burning, heat producing and refrigeration appliances shall be vented to outside (5.4.2) A Recepts and plug caps - low voltage and 120V different (551.20(F)) A
_____ C.O. detector in required RVs (6.3.2) B
_____ C.O. detector listed (6.3.2) B
_____ Each motorized RV shall be equipped with a min. 1A-10B:C fire extinguisher (6.4.1.2) C
_____ Propane detectors needed for all units equipped with a propane system (6.3.3.1) B

7. Complete Vehicle - Exterior

_____ Distance - Propane compartment 3' from exhaust or opening into unit (5.2.19.1) B
_____ Distance - Appliance flues inlet/gas filler spout at least 3' (5.5.3.1) A
_____ Distance - Motor driven air intake/filler spout at least 3' (5.5.2.1) A
_____ Sealed area around fuel system spout installation (6.4.2.1) B
_____ No exhausts terminate under vehicle or within 6" circle (6.4.3.1) A, (6.4.3.4) A
_____ No exposed wood in range hood vent (5.5.4.8) B
_____ Outside electrical fixtures listed for outdoor use (551.53(C)) B
_____ No openable rear windows in motorhomes or truck campers (6.4.3.5) A
_____ Power cord length (551.46(B))C
_____ Check for all required labels
_____ Clothes dryers shall be exhausted to the outside by moisture-lint exhaust ducts and fittings (5.6.7.1) B
_____ Clothes dryer ducts not connected with sheet metal screws or other fastening devices that extend to interior of duct (5.6.7.3(3)) C

SET C

8. Propane Tank Area

_____ Propane tank location (5.2.3.3) B
_____ Tank construction and marking (5.2.2.2) C
_____ Propane supply connectors listed (5.3.12.2) B
_____ Container appurtenances listed and accessible (5.2.10.1)(5.2.15.2) BA
_____ Overfill prevention device present (5.2.13) A
_____ Propane container shutoff valves protected (5.2.14.1) C
_____ Propane regulator mounted w/i 45° of vertical and diaphragm being drained (5.2.15.4) A
_____ Propane regulator protected from weather where below floor (5.2.15.5) A
_____ Propane cylinder compartment has proper venting (5.2.6.1) AB
_____ Propane cylinder compartment contains no spark producers (5.2.9) B
_____ Shielding of propane tank from heat of exhaust when w/i 18" (5.2.5.1) B
_____ Presence of listed excess flow valve (5.2.16.1) B
_____ Distance of 3' propane safety relief device/exhaust term. or vehicle opening (5.2.19.1) B
_____ Securing of propane cylinder housings (5.2.7.1) C
_____ Mounting of propane cylinders (5.2.3.3) B
_____ Propane supply connection label (5.8.2.1) B
_____ 80% fill label (5.8.2.2.1) B
_____ Door/Access panels shall not be lockable or require special tools to open (5.2.6.6) B

9. Propane Piping System

_____ Propane line bonded to chassis (551.56(E)) A
_____ Proper propane tubing system materials (5.3.2.5) C
_____ Proper propane pipe sizing (5.3.4.2) C
_____ Propane tubing joints - single or double flare (5.3.6.1) B
_____ Routing and protection of tubing (5.3.8) B
_____ Securing of propane pipe and tubing (5.3.18) B
_____ No concealed propane tubing joints (5.3.9) B
_____ Propane piping shall not be used for grounding (5.3.17) A
_____ Propane tubing and pipe joints more than 2" from compartment ceiling protected in storage areas (5.3.8.4)(5.3.9.2) BB
_____ Flexible hose connectors for slideout applications meet applicable requirements (5.3.2)B

10. Furnace

_____ Installed according to manufacturers instructions (5.4.5.1) AB
_____ All clearances maintained (framing where necessary) (5.6.6.1) A
_____ Air duct materials - supply system (5.7.1.1) B
_____ Sizing of supply ducts (5.7.2) C
_____ Sizing of return air openings (5.7.6) C
_____ Air duct joints and seams secure (5.7.8) C
_____ Air ducts securely supported (5.7.9) C
_____ Air duct register or grill material (5.7.10) C
_____ Furnace negative pressure will not effect other appliances (5.4.9) B

11. Water Heater

_____ Listed for RV use (5.4.1) A
_____ Complete seal to interior of vehicle (5.4.6.1) A
_____ Temperature and pressure relief valve (approved and listed) (7.3.11.1) A
_____ Relief valve drain (7.3.12.1) B

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SET D

12. Range/Range Hood

_____ Range cover doesn't block vents (5.6.6.5) A
_____ Range listed for RV use (5.4.1) A
_____ Range hood listed (w/LV or 120V light) (7-3.1)(551.40(B)) CB
_____ All clearances maintained - top, sides, and back (5.6.6.1) A
_____ Vertical clearance of range (5.6.6.5) A
_____ Drapes or shades cannot violate vertical clearance (5.6.4) B
_____ Propane tubing into range is protected (5.3.8.3) B
_____ Range hood vent properly aligned, no exposed combustibles (5.5.4.8) B
_____ Range hood directly over range (5.6.6.5) A
_____ Ventilation of cooking area w/i 5' (5.5.4) B
_____ Comfort Heating label present (5.8.2.4) B
_____ If You Smell Propane label present (5.8.2.3) B

13. Refrigerator/Refrigerator Compartment

_____ Refrigerator listed for RV use (5.4.1) A
_____ Refrigerator installed to manufacturers instructions (5.4.5.1) B
_____ Refrigerator compartment completely sealed (check before refrig. installed) (5.4.6.1) B
_____ Refrigerator anchored (5.4.5.3) B
_____ Compartment floor flush with lowest vent (5.4.6.4) A
_____ No defects in propane tubing (5.3.2.1) B
_____ Propane line through floor is grommeted (5.3.8.2) B

14. Panelboard

_____ Listed and appropriately rated (551.45(A)) B
_____ Working clearance - 22" by 30" or w/i 2" of aisle (551.45(B)) B
_____ Matching of wire to overcurrent protection (551.43(A)) A
_____ Load balancing (551.42(D)) C
_____ HACR breaker where required for A/C circuit (551.43(A)) A
_____ Sheath of NMS cable continuous into panelboard (551.47(F)) C
_____ Proper wiring-insulated neutral (551.54(C)) A
_____ #8 ground wire leaves box properly (551.40(B)) B
_____ NMS cable anchored w/i 12" of panelboard (551.47(I)) C
_____ Power cord anchored to prevent strain (551.46(A)(2)) B
_____ Power cord matches wiring amps (551.46(A)(2)) C

15. Receptacle/Outlets Boxes

_____ Sheath of NMS cable continuous between outlet boxes (551.47(F)) C
_____ NMS cable anchored w/i 8" or 12" of outlet box (551.47(J))(551.47(I)) BC
_____ Proper box size for number and size of conductors and straps (551.48) C
_____ Proper mounting of outlet boxes (1/2" backer where necessary) (551.47(E)) C
_____ Maximum number of conductors permitted in box (551.48) C
_____ Proper terminal connections (551.50) B
_____ No unused holes in receptacle box (551.47(E)) C
_____ Receptacles are of grounded type (551.52) A
_____ Approved splices (551.50) B
_____ Proper screws to box (551.40(B)) B

_____ 6" free conductor present (551.40(A)) C
_____ Receptacle and instructions shall be provided for electric dryer prep(5.6.7.6) B

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NFPA 1192-Appendix A-15

SET E

16. Underneath the Chassis

_____ Securing of plumbing drain and vent piping at 4' intervals (7.4.2.5) C
_____ Long sweep turns in drain piping system (7.4.2.6) C
_____ Location of fullway termination valve w/i 36" of black water tank drain (7.5.3.5) C
_____ Securing of propane piping w/i 6" of supply connections (5.3.18.2) B
_____ Protection and routing of propane tubing (grommets where necessary) (5.3.8.2) B
_____ Securing of propane tank (5.2.3) B
_____ Shielding of propane tank/exhaust where w/i 18" (5.2.5.1) B
_____ Height of propane tank (especially vans and installation behind rear wheels) (5.2.3.3) B
_____ Secure ground connection from panelboard to chassis (551.50) B
_____ Rodent protection around plumbing (7.1.6.4) C
_____ Protection of any under chassis wiring (551.47(N)) B
_____ Exhaust ducts for dryers shall not terminate under unit (5.6.7.3(2)) B

17. Air Conditioner

_____ Installed in accordance with manufacturers instructions (551.40(B)) B
_____ Overcurrent protection matches rating plate requirement (551.43(A)(3)) B
_____ Proper wiring, terminal connections (551.50) B

18. In Plant Items – the following items can be checked during the course of an inspection but will not necessarily be located on the vehicle.

_____ Check wire on spools (marking, ins. thickness, etc.) (4-4) C
_____ Check electrical fixtures for listing or approval (551.40(B)) B
_____ Appliances - listed for RV use where required (5.4.1) A
_____ Interior finish - flame spread less than 200 (6.1.1.1) B
_____ Shower tub enclosures - proper listing and flame spread (7.1.2.1)(6.1.1.1) CB
_____ Plumbing fixtures - proper approval (7.1.2.1) C
_____ Owners manual - consumer information present (5.8.1.2) C
_____ Proof of propane tank securing means (documentation) (5.2.4.1) B
_____ Quality control program/Quality control sheets (RVIA Minimum Q.C. Program) C
_____ Written instructions needed on how to complete exhaust duct installation for dryer preps (5.6.7.6) B

19. Tags/Labels

_____ Label at electrical entrance with correct ampere rating marked (551.46(D)) C
_____ Potable water label at inlets to potable water tanks (7.3.7.4) B
_____ Propane supply connection label (5.8.2.1) B
_____ 80% fill label (5.8.2.2.1) B
_____ Comfort heating label in range area (5.8.2.4) B
_____ If You Smell Propane label in range area (5.8.2.3) B
_____ Smoke alarm label if smoke alarm present (6.3.1.5) B
_____ Refueling warning label near gas fill on motorhomes and truck campers (5.9.2.2.2) B
_____ Generator ready label where required (551.47(R)(4)) C
_____ A/C Prewire label where required (551.47(Q)(3)) C

SET F

20. Plumbing - Water Distribution System

_____ Potable water tanks listed, vented at top (7.1.2.1)(7.3.7.3) CB
_____ Proper water supply system materials and prohibited practices (7.3.1) (7.3.3) CB
_____ Appropriate and accessible fittings (7.3.2) C
_____ Provisions for low point drains (7.3.6.2) C
_____ 3/4" female swivel hose connector with backflow preventer and cap (7.3.8.1)(7.3.10)(7.3.8.6) CBC
_____ Backflow preventer - pressure water storage tanks (7.3.10) B
_____ W/H temperature and pressure relief valve (= 150 psi) (7.3.11.1) B
_____ Potable water system separate from tank flushing systems (7.3.8.7) A

21. Plumbing – Drain System – General

_____ Cleanouts after every 360° of turns (7.4.8.2) C
_____ Cleanouts accessible (7.4.8.3) C
_____ Long sweeps where necessary - vertical to horizontal and horizontal to horizontal (7.4.2.6) C
_____ Proper slope of drain piping (1/8" per foot) (7.4.2.4) C
_____ Proper sizing of drainage piping (see blueprint if necessary) (7.4.2.1) C
_____ Increased pipe size of wet vented sections (7.4.6.3) C
_____ Tank flushing devices listed as a system (7.1.2.1) C

22. Plumbing - Drain System - Traps/Trap Arms

_____ Traps at every plumbing fixture (7.4.4.1) B
_____ Installation and accessibility of traps (7.4.4.11) C
_____ No S traps, bell traps, or double trapping (7.4.4.4) B
_____ Trap set correct to seal, 2" to 4" water seal (7.4.4.8) B
_____ Trap arm slope (1/4" per foot), never greater than pipe diameter (7.4.5.1) C
_____ Trap arm length per table (54" for 1 1/4" and 1 1/2" pipe) (7.4.5.4)

23. Plumbing - Drain Systems - Vents

_____ Venting for every plumbing fixture (7.6.1.1) C
_____ No horizontal offsets in vent pipe below flood level of fixture/check grades (7.6.5.1) B
_____ Vent pipe material, fittings, and sizing (7.6.2.1)(7.6.2.2)(7.6.3) BBC
_____ Anti-siphon trap vents - proper installation (7.6.6(1)) B
_____ Anti-siphon trap vents serve no more than two consecutive fixtures (7.6.6(2)) C
_____ Vent roof extension 1", flashing, and removable caps (7.6.7.1)(7.6.8.2)(7.6.8.3) BBC
_____ Common and intersecting vents (7.6.3.4)(7.6.5.1) CC

24. Plumbing - General

_____ Holding tank(s) vented at highest point (7.5.2.5)(7.5.3.6) BB
_____ Location of main drain outlet (22.5' of rear) (7.5.7.3) C
_____ Location of fullway termination valves w/i 36" from tank (7.5.3.5) C
_____ Toilet flange/floor connection min. 1/4" non-corrosive screw (7.2.3.6) C
_____ Accessibility of all fixtures (7.2.2.7) C
_____ Shower/Tub glazing meets ANSI Z97.1 (7.2.4.7) B
_____ Shower stall receptor has sides and back 1" (min.) above finished dam (7.2.4.1) C

Example of Proper Member Signature Sheet

REQUIRED RV TESTING SIGN-OFF CHECKLIST					
MODEL:			**VIN:**		
NFPA 1192-2021, NEC - 2023 & ANSI/RVIA LV - 2020					
STATION	**CODE EDITION**	**CODE**	**REQUIRED TEST**	**DATE**	**SIGN-OFF**
	NFPA 1192	5.3.19.1 (5.3.19.6)	**Pre-Appliance Gas Test** (ext. stove hose/copper) 3psi minimum for 10 minutes		
	NFPA 1192	5.3.20.1 (5.3.20.6) (5.3.20.7)	**After Appliance Gas Test** 8-14 in. Water @ 3 minutes minimum Bubble Test		
	NFPA 1192	5.3.21.1 (5.3.21.6)	**Regulated High Pressure Gas Piping Test** 1.5 times operating pressure for 10 minutes minimum		
	NFPA 1192	5.3.22.1	**Regulated High Pressure Gas Piping Test** 15-30 lb. maximum checked with soapy water		
	NFPA 1192	7.7.2.1.1 7.7.2.1.2 7.7.2.1.3	**Water System Pressure Test** Water or Air 80-100 psi w/HW tank & water tank Air 8-100 psi w/out HW tank & water tank Air 30-45 psi with HW tank & water tank		
	NFPA 1192	7.7.3 (7.7.3.3)	**Waste System Flow Test** System flood to lowest fixture flood level for 15 min.		
	NFPA 1192	7.7.3.3.3	**Waste System Flood Test** All systems emptied at once - no leaks or retarded flow		
	NEC	551.60	**120 V Circuits Dielectric Strength Test** (prior to energizing RV) 1 second @ 1080 Vac		
	NEC	554.60(1)	**Continuity Test** Test metal part for bonding Polarity Test		
	NEC	551.60(2)	**120 V Operational Test** Operate all 120 V powered devices		
	NEC	551.60(3)	**Polarity Test** Test all receptacles to correct polarity		
	NEC	551.60(4)	**120 V GFCI Function Test** Test is to be performed at all protected Receptacles		
	NEC	551.6	**120 V Dielectric Strength Test** (Final stages of production)		
	ANSI/RVIA LV	8-1	**12 V Operational Test** Operate all 12 V powered devices		
	NFPA 1192	5.9.12.1 (5.9.12.7)	**Fuel Distribution System Test** 1 psi minimum for 10 minutes minimum		

SAMPLE

Three Times no Inspection Policy



RV Industry Association Board of Directors Approves New Inspection Enforcement Program Requirement

In 2021 a member task force was formed to address manufacturer inspection issues. RV Industry Association inspection staff have obligations to its members to perform a minimum of six inspections at each facility during a calendar year. Volumes of products vary at manufacturers and there have been consecutive occurrences of inspectors arriving at sites which have no product available for inspection, impeding inspection obligations to our members, while incurring cost associated with no inspections provided.

As a result of information gathered by the member Task Force, the RV Industry Board of Directors approved the following motion regarding the Inspection Enforcement Program during the Fall Board Meeting, effective April 1st, 2022:

The RV Industry Association Board of Directors hereby approves a Program Requirement adopting the Inspection Enforcement Program Requirement addressing inconsistencies of product available during unannounced inspection at member sites.

Inspection Enforcement Program Requirement

A member manufacturer that has three consecutive NO INSPECTION reports will be removed from the inspection schedule. There will be a $1,000.00 reinstatement fee to be added back to the inspection schedule.

If a member manufacturer is removed from the inspection schedule in accordance with this requirement, such member manufacturer may not purchase seals until it has paid its reinstatement fee, has been added back to the inspection schedule, and has had one full inspection completed.

If members have any questions regarding the new Inspection Program Requirement, please contact Bryan Ritchie, Sr. Director of Standards.

REQUIRED 2021 NFPA 1192 AND 2020 NEC LABELS

NOTE: 2021 NFPA 1192, Chapter 4, General Requirements, Section 4.3.1 require all labels identified within Chapter 5, 6 and 7 of NFPA 1192 to conform to ANSI Z535 Series Safety Alerting Standards.

The following excerpt from ANSI Z535.4 Product Safety Signs and Labels detail the label color requirements for the signal panel words: DANGER (red), WARNING (orange), CAUTION (yellow) and NOTICE (blue).

7 Safety sign and label colors

7.1 Standard colors

Safety colors shall conform to ANSI Z535.1

7.2 Signal word panels

7.2.1 DANGER

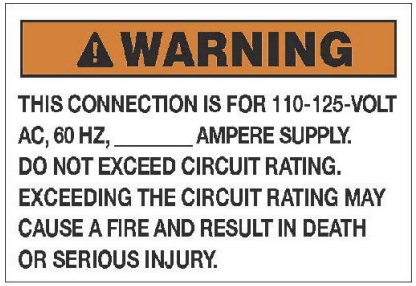
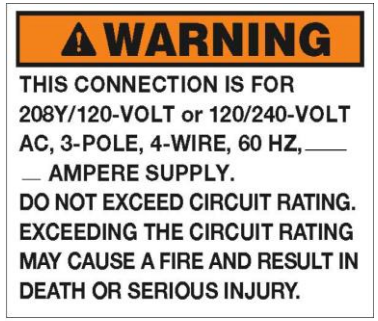
The word DANGER shall be in safety white letters on a safety red background.

7.2.2 WARNING

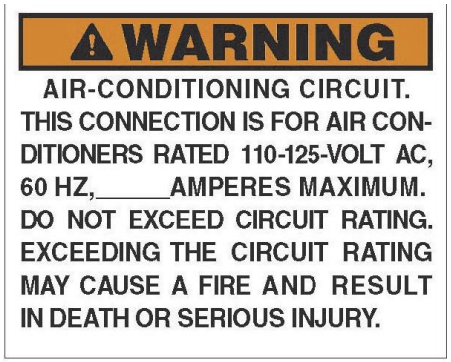
The word WARNING shall be in safety black letters on a safety orange background.

7.2.3 CAUTION

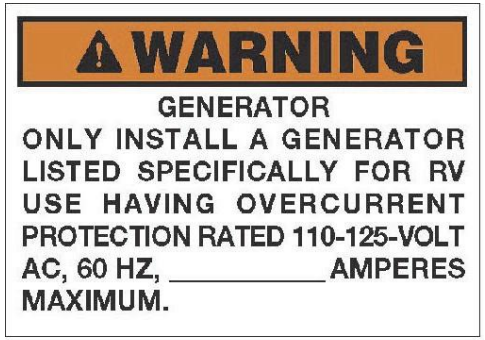
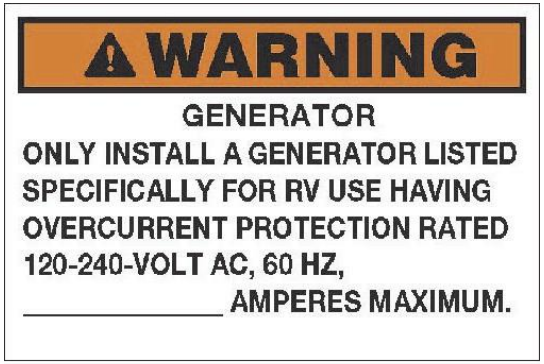
The word CAUTION shall be in safety black letters on a safety yellow background.

Code Paragraph Name	Name of Label	Label Location Requirement	Label Material Requirement	Label Size Requirement	Fill In Items	Sample of Label (Not Actual Size)
551.46(D)	Electrical Entrance Label	On exterior skin, at or near the point of entrance of the power supply cord(s)	Etched, metal stamped or embossed brass, stainless steel, or anodized or alclad aluminum or other suitable material	Word "WARNING" with a minimum 1/4" (6 mm) high black letters on orange background and body text with a minimum 1/8" (3 mm) high black letters on a contrasting background	Ampere rating to match power assembly	 551.46 (D) or  551.46 (D)

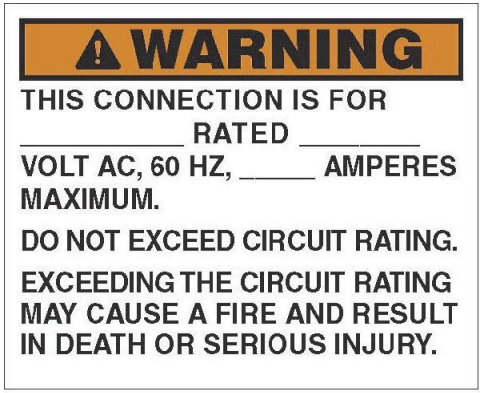
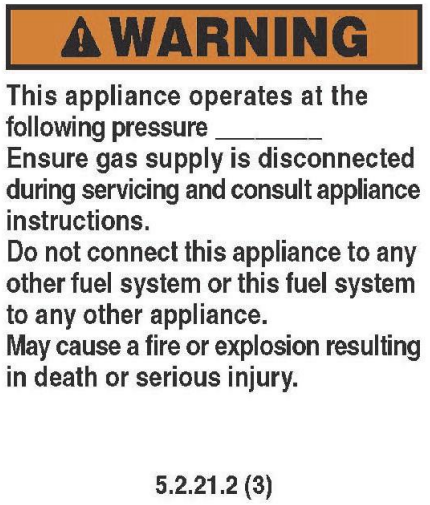
Because of the possibility of human or mechanical errors, RVIA does not guarantee the accuracy, adequacy, or completeness of any information in the chart and is not responsible for any errors or omissions. 01/21

Code Paragraph Name	Name of Label	Label Location Requirement	Label Material Requirement	Label Size Requirement	Fill In Items	Sample of Label (Not Actual Size)
551.47(Q)(3)	Prewiring for Air Conditioning Label	On or adjacent to the junction box or other listed enclosure	Etched, metal stamped or embossed brass, stainless steel, or anodized or alclad aluminum or other suitable material	Word "WARNING" with a minimum 1/4" (6 mm) high black letters on orange background and body text with a min- imum 1/8" (3 mm) high black letters on a contrasting background	Ampere rating, not to exceed 80 percent of the circuit rating	

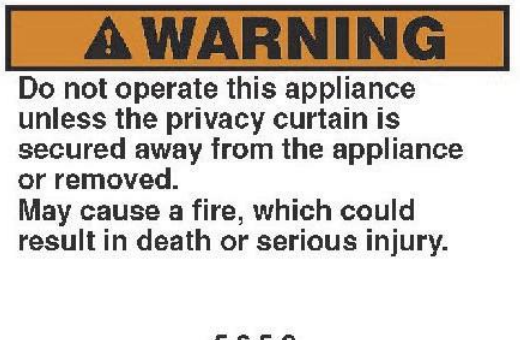
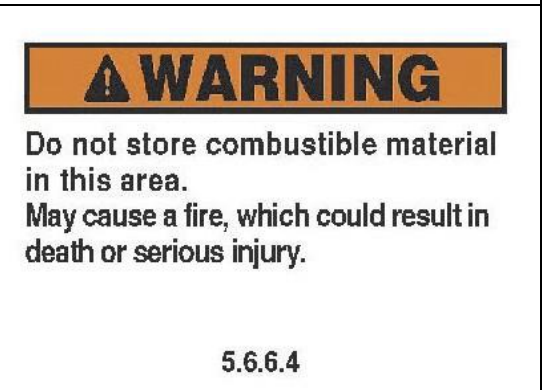
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Code Paragraph Name	Name of Label	Label Location Requirement	Label Material Requirement	Label Size Requirement	Fill In Items	Sample of Label (Not Actual Size)
551.47(R)(4)	Prewiring for Generator Label	Placed on the cover of each junction box containing incomplete circuitry	Etched, metal stamped or embossed brass, stainless steel or anodized or alclad aluminum or other suitable material	Word "WARNING" with a minimum 1/4" (6 mm) high black letters on orange background and body text with a minimum 1/8" (3 mm) high black letters on a contrasting background	Ampere rating	 551.47 (R) (4) or  551.47 (R) (4)

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Code Paragraph Name	Name of Label	Label Location Requirement	Label Material Requirement	Label Size Requirement	Fill In Items	Sample of Label (Not Actual Size)
551.47(S)(3)	Prewiring for Other Circuits	Placed on or adjacent to the junction box or device	Etched, metal stamped or embossed brass, stainless steel or anodized or alclad aluminum or other suitable material	Word "WARNING" with a minimum 1/4" (6 mm) high black letters on orange background and body text with a minimum 1/8" (3 mm) high black letters on a contrasting background	Volt and Ampere rating	
5.2.21.2(3)	High Pressure Appliance Label	Attached to the high pressure appliance or appliance compartment	Made of material that when affixed to the product cannot easily be removed and provides good color stability, symbol legibility and protection from foreseeable damage, fading, or visual obstruction caused by abrasion, ultraviolet radiation, or substances such as lubricants, chemicals, and dirt.	Word "WARNING" with a minimum 1/4" (6 mm) high black letters on orange background and body text with a minimum 1/8" (3 mm) high black letters on a contrasting background	N/A	

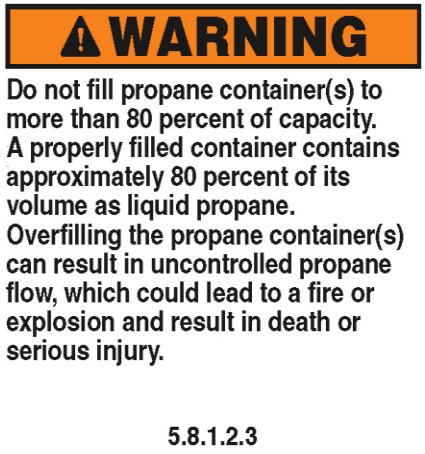
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Code Paragraph Name	Name of Label	Label Location Requirement	Label Material Requirement	Label Size Requirement	Fill In Items	Sample of Label (Not Actual Size)
5.6.5.2	Warning Label for Securing Privacy Curtain	Visible location adjacent to the applicable appliance(s)	Made of material that when affixed to the product cannot easily be removed and provides good color stability, symbol legibility and protection from foreseeable damage, fading, or visual obstruction caused by abrasion, ultraviolet radiation, or substances such as lubricants, chemicals, and dirt.	Word "WARNING" with a minimum 1/4" (6 mm) high black letters on orange background and body text with a minimum 1/8" (3 mm) high black letters on a contrasting background	N/A	
5.6.6.4	Do Not Store Combustible Material	Visible location adjacent to the applicable appliance(s)	Made of material that when affixed to the product cannot easily be removed and provides good color stability, symbol legibility and protection from foreseeable damage, fading, or visual obstruction caused by abrasion, ultraviolet radiation, or substances such as lubricants, chemicals, and dirt.	Word "WARNING" with a minimum 1/4" (6 mm) high black letters on orange background and body text with a minimum 1/8" (3 mm) high black letters on a contrasting background	N/A	

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Code Paragraph Name	Name of Label	Label Location Requirement	Label Material Requirement	Label Size Requirement	Fill In Items	Sample of Label (Not Actual Size)
5.8.2.1	Identification of Propane Supply Connection	Visible location at or near each propane supply connection, or at the end of the piping	Made of material that when affixed to the product cannot easily be removed and provides good color stability, symbol legibility and protection from foreseeable damage, fading, or visual obstruction caused by abrasion, ultraviolet radiation, or substances such as lubricants, chemicals, and dirt.	Word "WARNING" with minimum 1/4" (6 mm) high black letters on orange background and body text with minimum 1/ 8" (3 mm) high black letters on contrasting background	N/A	**⚠WARNING** This propane piping system is designed for use with propane only. Do not connect natural gas to this system. Securely cap inlet when not connected for use. After turning on propane, except after normal cylinder replacement, test propane piping and connections to appliances for leakage with soapy water or bubble solution. Do not use products that contain ammonia or chlorine to test for leaks. May lead to a fire or explosion, which could result in death or serious injury. 5.8.2.1 or **⚠WARNING** This gas piping system is designed for use with either propane or natural gas. Before turning on gas, be certain appliances are designed and arranged for the gas connected. (See each appliance instruction plate.) Securely cap inlet when not connected for use. After turning on gas, except after normal cylinder replacement, test gas piping and connections to appliances for leakage with soapy water or bubble solution. Do not use products that contain ammonia or chlorine to test for leaks. May lead to a fire or explosion, which could result in death or serious injury. 5.8.2.1

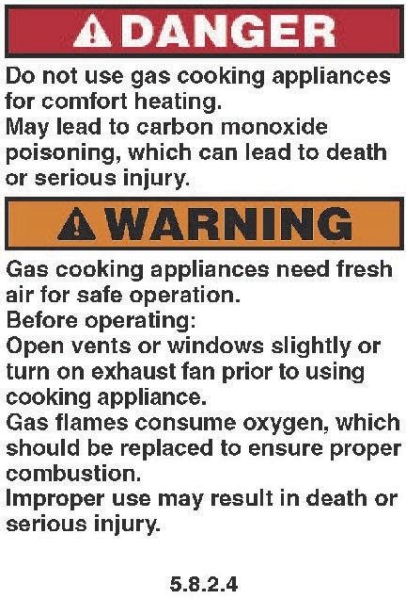
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Code Paragraph Name	Name of Label	Label Location Requirement	Label Material Requirement	Label Size Requirement	Fill In Items	Sample of Label (Not Actual Size)
5.8.1.2.3	Warning Relative to Refueling 80% Fill	Visible location adjacent to the propane container	Made of material that when affixed to the product cannot easily be removed and provides good color stability, symbol legibility and protection from foreseeable damage, fading, or visual obstruction caused by abrasion, ultraviolet radiation, or substances such as lubricants, chemicals, and dirt.	Word "WARNING" with minimum 1/4" (6 mm) high black letters on orange background and body text with minimum 1/8" (3 mm) high black letters on contrasting background	N/A	
5.8.2.2.2	Warning Relative to Refueling	On truck campers near the front on both the left and right exterior walls. On motorhomes by the gasoline fill- er spout and the propane container	Made of material that when affixed to the product cannot easily be removed and provides good color stability, symbol legibility and protection from foreseeable damage, fading, or visual obstruction caused by abrasion, ultraviolet radiation, or substances such as lubricants, chemicals, and dirt.	Word "DANGER" with minimum 1/4" (6 mm) high white letters on red background and body text with minimum 1/8" (3 mm) high black letters on contrasting background	N/A	

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Code Paragraph Name	Name of Label	Label Location Requirement	Label Material Requirement	Label Size Requirement	Fill In Items	Sample of Label (Not Actual Size)
5.8.2.3	Warning If Propane Odor Is Detected	In a noticeable location near the range	Made of material that when affixed to the product cannot easily be removed and provides good color stability, symbol legibility and protection from foreseeable damage, fading, or visual obstruction caused by abrasion, ultraviolet radiation, or substances such as lubricants, chemicals, and dirt.	Word "DANGER" with minimum 1/4" (6 mm) high white letters on red background and body text with minimum 1/8" (3 mm) high black letters on contrasting background	N/A	**⚠ DANGER** IF YOU SMELL PROPANE 1. Extinguish any open flames and all smoking materials. 2. Shut off the propane supply at the container valve(s) or propane supply connection. 3. Do not touch electrical switches. 4. Open doors and other ventilating openings. 5. Leave the area until the odor clears. 6. Have the propane system checked and leakage source corrected before using again. Ignition of flammable vapors could lead to a fire or explosion and result in death or serious injury. 5.8.2.3

Because of the possibility of human or mechanical errors, RVIA does not guarantee the accuracy, adequacy, or completeness of any information in the chart and is not responsible for any errors or omissions. 01/21

Code Paragraph Name	Name of Label	Label Location Requirement	Label Material Requirement	Label Size Requirement	Fill In Items	Sample of Label (Not Actual Size)
5.8.2.4	Warning Label for Cooking Appliances	Visible location adjacent to fuel burning ranges	Made of material that when affixed to the product cannot easily be removed and provides good color stability, symbol legibility and protection from foreseeable damage, fading, or visual obstruction caused by abrasion, ultraviolet radiation, or substances such as lubricants, chemicals, and dirt.	Word "DANGER" with minimum 1/4" (6 mm) high white letters on red background in addition to the word "WARNING" with minimum 1/4" (6 mm) high black letters on orange background and body text with minimum 1/8" (3 mm) high letters on contrasting background	N/A	

Because of the possibility of human or mechanical errors, RVIA does not guarantee the accuracy, adequacy, or completeness of any information in the chart and is not responsible for any errors or omissions. 01/21

Code Paragraph Name	Name of Label	Label Location Requirement	Label Material Requirement	Label Size Requirement	Fill In Items	Sample of Label (Not Actual Size)
5.8.2.5	Outside Cooking Warning Label	Visible location near the exterior cooking area.	Made of material that when affixed to the product cannot be easily removed and provides good color stability, symbol legibility and protection from foreseeable damage, fading, or visual obstruction caused by abrasion, ultraviolet radiation, or substances such as cooking grease, water or cleaning agents.	Word **"DANGER"** with minimum ¼" (6 mm) high letters and body of text with a minimum 1/8th (3 mm) high letters on a contrasting background. Word **"WARNING"** with minimum ¼" (6 mm) high letters and body of text with a minimum 1/8th (3 mm) high letters on a contrasting background.	N/A	
5.9.7.4	Fuel Type in This Storage Tank	On or near the filler cap	Made of material that when affixed to the product cannot easily be removed and provides good color stability, symbol legibility and protection from foreseeable damage, fading, or visual obstruction caused by abrasion, ultraviolet radiation, or substances such as lubricants, chemicals, and dirt. Permanent label made of material that does not deteriorate when in contact with petroleum- based products.	No size requirement	N/A	DIESEL FUEL ONLY

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Code Paragraph Name	Name of Label	Label Location Requirement	Label Material Requirement	Label Size Requirement	Fill In Items	Sample of Label (Not Actual Size)
5.9.9.3	Fuel Dispensing Shutoff Switch	Adjacent to shutoff valve	Made of material that when affixed to the product cannot easily be removed and provides good color stability, symbol legibility and protection from foreseeable damage, fading, or visual obstruction caused by abrasion, ultraviolet radiation, or substances such as lubricants, chemicals, and dirt. Permanent label made of material that does not deteriorate when in contact with petroleum- based products.	Minimum 1/4" (6 mm) high red block letters on contrasting background	N/A	FUEL DISPENSING SYSTEM EMERGENCY SHUTOFF SWITCH 5.9.9.3
5.9.11.15	Before Dispensing Fuel Warning	Visible to the operator during dispensing of fuel from the recreational vehicle	Permanent label made of material that will not deteriorate when in contact with petroleum based products	Word "DANGER" in minimum 5/8" (16 mm) high white block letters on red background and body in minimum 3/8" (10 mm) high black block letters on a contrasting background	N/A	⚠ DANGER NO SMOKING Before dispensing fuel, turn off all engines, fuel-burning appliances, and their igniters (see operating instructions) Do not dispense fuel within 20 ft (6.1m) of an ignition source. May cause ignition of flammable vapors, which can lead to a fire or explosion and result in death or serious injury. 5.9.11.15

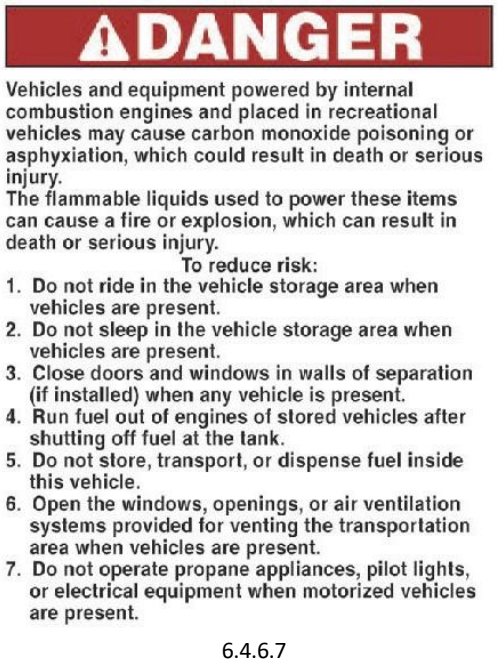
Because of the possibility of human or mechanical errors, RVIA does not guarantee the accuracy, adequacy, or completeness of any information in the chart and is not responsible for any errors or omissions. 01/21

Code Paragraph Name	Name of Label	Label Location Requirement	Label Material Requirement	Label Size Requirement	Fill In Items	Sample of Label (Not Actual Size)
6.2.1.5	Do Not Utilize RV	On interior next to primary means of escape	Made of material that when affixed to the product cannot easily be removed and provides good color stability, symbol legibility and protection from foreseeable damage, fading, or visual obstruction caused by abrasion, ultraviolet radiation, or substances such as lubricants, chemicals, and dirt.	Word "WARNING" with minimum 3/4" (19 mm) high black letters on orange background and body text with minimum 1/4" (6 mm) high black letters on a contrasting background	N/A	
6.2.3.1	Secondary Means of Escape	Placed on interior wall surface above or below the exit or on interior ceiling surface within 8" (203 mm) of the opening or on the window in an unobscured vis- ible location	Made of material that when affixed to the product cannot easily be removed and provides good color stability, symbol legibility and protection from foreseeable damage, fading, or visual obstruction caused by abrasion, ultraviolet radiation, or substances such as lubricants, chemicals, and dirt.	Red letters one inch minimum height on contrasting background	N/A	EXIT

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Code Paragraph Name	Name of Label	Label Location Requirement	Label Material Requirement	Label Size Requirement	Fill In Items	Sample of Label (Not Actual Size)
6.3.1.5	Smoke Alarm Warning Label	Visible location on or within 24" (610 mm) of the smoke alarm	Made of material that when affixed to the product cannot easily be removed and provides good color stability, symbol legibility and protection from foreseeable damage, fading, or visual obstruction caused by abrasion, ultraviolet radiation, or substances such as lubricants, chemicals, and dirt.	Word "WARNING" with minimum 1/4" (6 mm) high black letters on orange background and body text with minimum 1/8" (3 mm) high black letters on a contrasting background	N/A	**⚠ WARNING** **Test smoke alarm operation after vehicle has been in storage, before each trip, and at least once per week during use. Failure to do so may result in death or serious injury.** 6.3.1.5

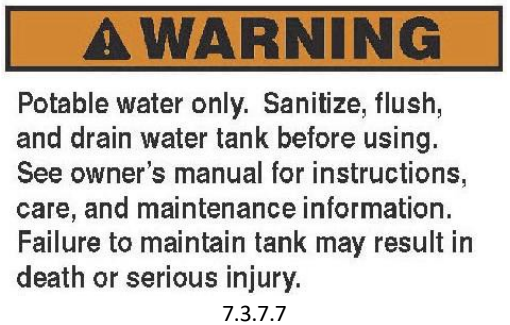
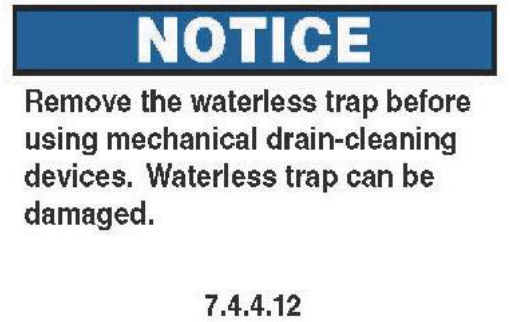
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Code Paragraph Name	Name of Label	Label Location Requirement	Label Material Requirement	Label Size Requirement	Fill In Items	Sample of Label (Not Actual Size)
6.4.6.7	Storage of Motorized Equipment in Transport Area	Inside the RV adjacent to each entry and visible to anyone entering the RV	Made of material that when affixed to the product cannot easily be removed and provides good color stability, symbol legibility and protection from foreseeable damage, fading, or visual obstruction caused by abrasion, ultraviolet radiation, or substances such as lubricants, chemicals, and dirt.	Word "DANGER" with minimum 3/4" (19 mm) high white letters on red background and body text with minimum 1/4" (6 mm) high black letters on a contrasting background	N/A	

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Code Paragraph Name	Name of Label	Label Location Requirement	Label Material Requirement	Label Size Requirement	Fill In Items	Sample of Label (Not Actual Size)
6.4.6.8	Do Not Sleep In This Area	Visible to anyone entering the special transportation area	Made of material that when affixed to the product cannot easily be removed and provides good color stability, symbol legibility and protection from foreseeable damage, fading, or visual obstruction caused by abrasion, ultraviolet radiation, or substances such as lubricants, chemicals, and dirt.	Word "WARNING" with minimum 5/8" (16 mm) high black letters on orange background and body text with minimum 3/8" (10 mm) high black letters on a contrasting background.	N/A	
6.4.6.10	Proper Weight Distribution	Interior of Vehicle	Made of material that when affixed to the product cannot easily be removed and provides good color stability, symbol legibility and protection from foreseeable damage, fading, or visual obstruction caused by abrasion, ultraviolet radiation, or substances such as lubricants, chemicals, and dirt.	Word "WARNING" with minimum 1/4" (6 mm) high text and minimum 1/8" (3 mm) body text	N/A	Manufacturer must also develop a statement in the owner's manual explaining the proper weight distribution for the transportation of internal combustion engine vehicles.

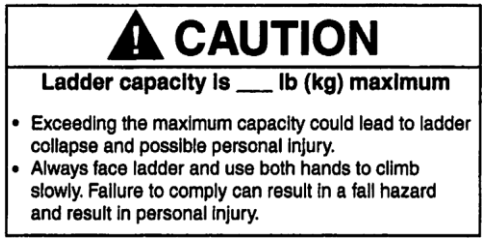
Because of the possibility of human or mechanical errors, RVIA does not guarantee the accuracy, adequacy, or completeness of any information in the chart and is not responsible for any errors or omissions. 01/21

Code Paragraph Name	Name of Label	Label Location Requirement	Label Material Requirement	Label Size Requirement	Fill In Items	Sample of Label (Not Actual Size)
7.3.7.7	Labeling of Potable Water Tank Inlets	At each inlet to a potable water tank	Made of material that when affixed to the product cannot easily be removed and provides good color stability, symbol legibility and protection from foreseeable damage, fading, or visual obstruction caused by abrasion, ultraviolet radiation, or substances such as lubricants, chemicals, and dirt.	Word "WARNING" with minimum 1/4" (6 mm) high black letters on orange background and body text with minimum 1/8" (3 mm) high black letters on a contrasting background	N/A	
7.4.4.12	Waterless Trap	N/A	Made of material that when affixed to the product cannot easily be removed and provides good color stability, symbol legibility and protection from foreseeable damage, fading, or visual obstruction caused by abrasion, ultraviolet radiation, or substances such as lubricants, chemicals, and dirt.	Word "NOTICE" with minimum 1/4" (6 mm) high white letters on blue background and body text with minimum 1/8" (3 mm) high black letters on contrasting background	N/A	

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Code Paragraph Name	Name of Label	Label Location Requirement	Label Material Requirement	Label Size Requirement	Fill In Items	Sample of Label (Not Actual Size)
7.4.7.1.1	Drain Valve	N/A	Made of material that when affixed to the product cannot easily be removed and provides good color stability, symbol legibility and protection from foreseeable damage, fading, or visual obstruction caused by abrasion, ultraviolet radiation, or substances such as lubricants, chemicals, and dirt.	Word "CAUTION" with minimum 1/4" (6 mm) high black letters on yellow background and body text with minimum 1/8" (3 mm) high black letters on a contrasting background	Side Vented System	**⚠ CAUTION** **Keep drain valve closed to minimize the presence of sewer gases. Sewer gases can be present when RV is connected to campground sewage hookup. May lead to illness or personal injury.** **7.4.7.1.1**
7.5.3.7	Tank Flush Label	Adjacent to tank flush valve inlet	Made of material that when affixed to the product cannot easily be removed and provides good color stability, symbol legibility and protection from foreseeable damage, fading, or visual obstruction caused by abrasion, ultraviolet radiation, or substances such as lubricants, chemicals, and dirt.	Word "CAUTION" with minimum 1/4" (6 mm) high black letters on yellow background and body text with minimum 1/8'' (3 mm) high black letters on a contrasting background		**⚠ CAUTION** **Do not use the tank flush valve unless the fullway termination valve is in the open position.** **May result in an unsanitary condition leading to illness or personal injury.** **7.5.3.7**

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Code Paragraph Name	Name of Label	Label Location Requirement	Label Material Requirement	Label Size Requirement	Fill In Items	Sample of Label (Not Actual Size)
8.8.1.3	Ladder Capacity	Visible location adjacent to an exterior ladder		Word "CAUTION" with minimum 1/4" (6 mm) high black letters on yellow background and body text with minimum 1/8" (3 mm) high black letters on a contrasting background		

Because of the possibility of human or mechanical errors, RVIA does not guarantee the accuracy, adequacy, or completeness of any information in the chart and is not responsible for

Required Test Procedures

NFPA 1192, ANSI/RVIA LV & NEC Test Procedures

The test procedures contained in this document have been developed with the assistance, advice and contributions of recognized authorities experienced in addressing the issues addressed herein. RVIA does not represent that every possible test consideration or potential methodology that may exist have been proposed or is included in this document. The NFPA 1192 Standard is a performance standard. Therefore, additional tests or testing methodologies may exist that will enable manufacturers to accurately verify their compliance with NFPA 1192 provisions. RVIA assumes no responsibility for errors and omissions, nor is any liability assumed for damages resulting from the use of the information contained herein.

Pre-Appliance Propane Test
Code Reference NFPA 1192 2021 Edition Paragraph 5.3.19.6 (1) & (2)

A test must be performed on all propane piping up to but not including the appliance connection fitting. There are two methods of testing [(1) & (2)] permitted by the standard.

(I) **PRESSURE DROP TEST:**

STEP 1:

Ensure the entire propane piping system is fully assembled and complete up to the appliance connection. The appliances should NOT be connected. Ensure a uniform temperature of air and piping throughout the test period.

STEP 2:

Cap the copper risers or hose at the appliance connection fittings. This can be accomplished by using threaded plugs at each flared fitting where an appliance will connect. Other methods of capping or plugging the tubing at the appliance connection point are permitted as long as a substantial seal can be obtained.

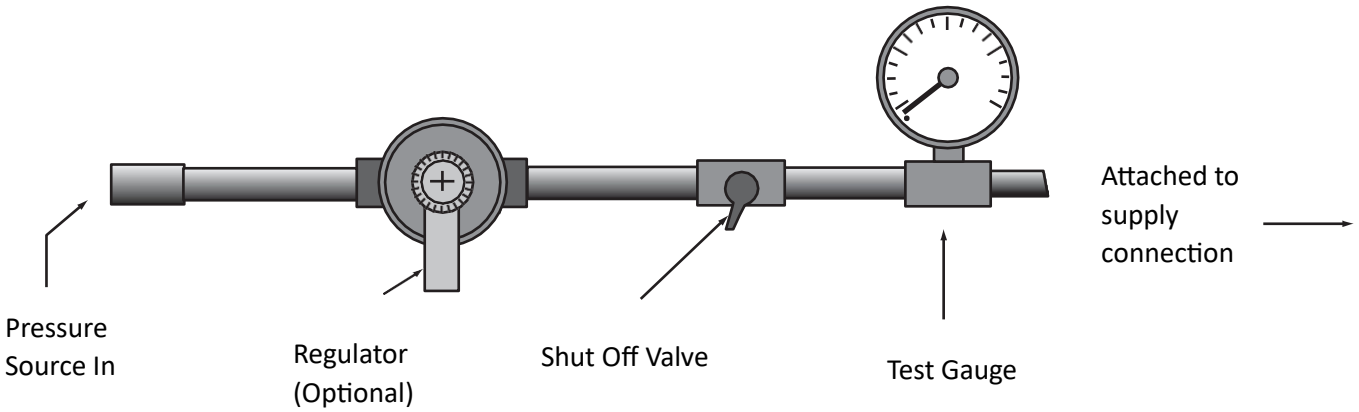
STEP 3:

Pressurize the piping system to a minimum of 3 psi or 48 oz. per square inch throughout. Disconnect the pressure source and monitor the gauge for a minimum test period of 10 minutes. Gauges used in test equipment must be in good working condition (i.e., returning to 0, cover in place, and straight needles). Gauges used must also be calibrated in increments no larger than 1/10 psi. Common gauges used for this test are 0-5 psi with 1/10 psi increments and 0-60 oz. with 1 oz. increments (1 oz. = 1/16 psi) A successful test will show no drop in pressure. If a pressure drop is noted, the leak must be located and repaired and a retest performed until no evidence of pressure drop is noted.

STEP 4:

After a successful test has been performed, the QC check list shall be signed (full signature) by the test personnel.

The following is one acceptable method of assembling the pre-appliance test equipment.



(2) BUBBLE-TYPE LEAK DETECTOR:

STEP 1:

Ensure the entire propane piping system is fully assembled and complete up to the appliance connection. The appliances should NOT be connected. Ensure a uniform temperature of air and piping throughout the test period.

STEP 2:

Cap the copper risers at the appliance connection fittings. This can be accomplished by using threaded plugs at each flared fitting where an appliance will connect. Other methods of capping or plugging the tubing at the appliance connection point are permitted as long as a substantial seal can be obtained.

STEP 3:

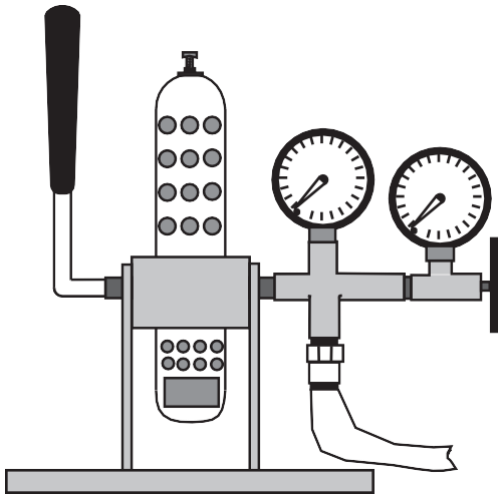
Attach a bubble-type leak detector apparatus between the piping system and a source of air pressure. A bubble-type leak detector is a special test apparatus that indicates leaks by the presence of any bubbling in its special chamber. One common brand of this device is called the Seek-A-Leak®.

STEP 4:

Pressurize the piping system to a minimum of 3 psi or 48 oz. Allow the system to sit for 10 minutes, then monitor the special chamber on the bubble-type leak detector for one full minute. A successful test will show no bubbling in the chamber over the one-minute period. If a leak is detected, it must be repaired and a retest performed until no bubbling occurs in the test chamber of the bubble-type leak detector device.

STEP 5:

After a successful test has been performed, the QC check list shall be signed (full signature) by the test personnel.



Final Propane System Test

Code Reference NFPA 1192 2021 Edition Paragraph 5.3.20

This test is designed to test the fittings not tested in the pre-appliance test. This test is performed with all connections in the piping system completed including the attachment to the appliances. There are three acceptable test methods as follows:

(I) **PRESSURE DROP TEST:**

This test method is often referred to as the "alternate test method" or "pressure drop test." Two common methods (see below) are prevalent for performing this test. One test method uses a gauge installed at the range, while the other uses a gauge built into a test apparatus installed at the source of pressure.

TEST METHOD 1: TESTING WITH A GAUGE INSTALLED AT THE RANGE STEP 1:

Attach a test gauge to a range spud. This is usually accomplished by removing a range burner and using a gauge with a connection tube that pushes on to the spud fitting where the burner was removed. The gauge must be calibrated in minimum increments of 1/2 oz. or 1 in. of water column. Proper test equipment is essential to performing an accurate test. A test equipment gauge must be in good condition (i.e., returning to 0, cover in place and straight needles).

STEP 2:

Pressurize the entire system to 8-14 in. water column (6-8 oz./sq. in.) and be sure it has equalized throughout the system. Shut off the source of pressure to the system.

STEP 3:

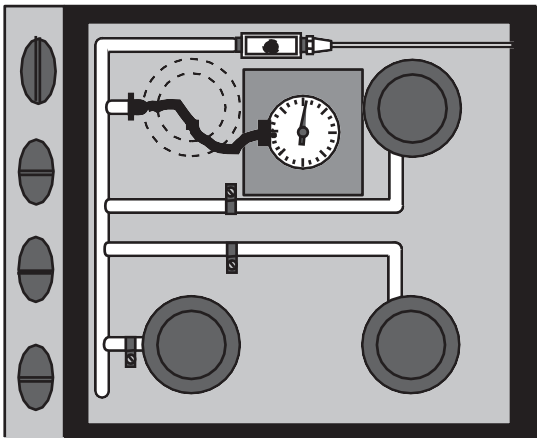
While carefully monitoring the gauge at the range, open a range burner and reduce the pressure in the system to 8" water column (+ or - 0.5 in.). This prevents the appliance regulator from becoming a factor in the test.

STEP 4:

Monitor the test for a minimum test period of 3 minutes, no pressure drop should be detected. If a pressure drop is noted, locate and repair the leak and retest until a successful test is obtained.

STEP 5:

After a successful test has been performed, the QC check list shall be signed (full signature) by the test personnel.



TEST METHOD 2: USING TEST EQUIPMENT AT THE PRESSURE

SOURCE

STEP 1:

Disconnect the flexible hose from the RV regulator and connect a test apparatus similar to the one shown below and reattach to the system.

STEP 2:

Pressurize the system to 8-14 in. water column (6-8 oz./sq. in.) and be sure the pressure is equalized within the entire system.

STEP 3:

Shut off the pressure source by closing the shutoff valve on the test apparatus that is down- stream of the test apparatus regulator.

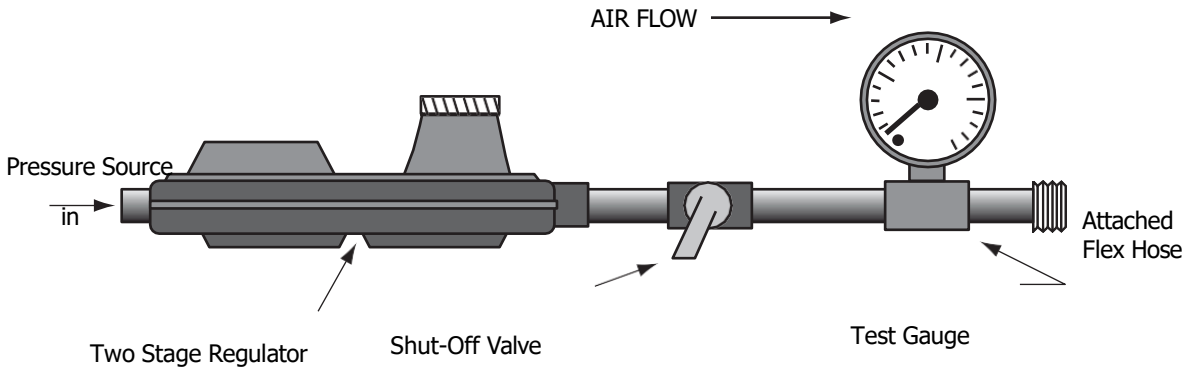
STEP 4:

Monitor the test for a minimum test period of three minutes, no pressure drop should be detected. The gauge used must be calibrated in minimum of 1/2 ounce or 1 in. water column increments, and must be in good condition (i.e., needle returns to zero, cover in place and needle straight).

STEP 5:

After a successful test has been performed, the QC check list shall be signed (full signature) by the test personnel.

Equipment such as that shown below may be used for this test:



(2) BUBBLE SOLUTION TEST

STEP 1:

Ensure all appliances are fully installed and tubing connections are tight.

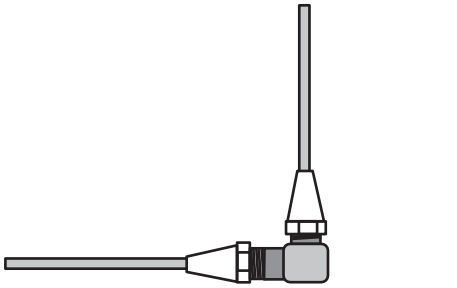
STEP 2:

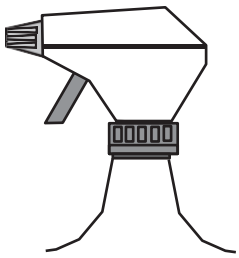
Pressurize the entire system to 10 to 14 in. water column (6-8 oz./sq. in.). Do not disconnect the pressure source. Since the test pressure is required to be maintained, an adequate monitor or test gauge shall be employed to ensure proper test pressure. Pressures over 14 in. water column (8 oz./sq. in.) may potentially damage appliance components or valves within the piping system and are not permitted.

STEP 3:

Spray each appliance connection fitting with a soapy water or leak detector bubble solution. Do not use any product containing either ammonia or chlorine. If a leak is present, the soapy water or bubble solution will "bubble" at the leakage point. Repair if a leak is present and retest until a successful test has been performed.

STEP 4:
After a successful test has been performed, the QC check list shall be signed (full signature) by the test personnel.





Regulated High Pressure Propane Piping System Tests
Code Reference NFPA 1192 2021 Edition Paragraph 5.3.21 and 5.3.22

Two tests must be performed on the regulated high pressure piping system. These tests would include all piping between the two regulators in split cylinder systems. If the entire piping system between the two regulators is a listed flexible hose assembly, the first test is not required. An acceptable procedure for each test is outlined below:

(I) **PRESSURE TESTING THE REGULATED HIGH PRESSURE PIPING SYSTEM**

STEP 1:
Ensure the entire regulated high pressure propane piping system is fully assembled and complete up to the regulator connection(s). The regulators should NOT be connected. Ensure a uniform temperature of air and piping throughout the test period.

STEP 2:
Cap one end of the piping system and attach a test gauge and means to supply pressure to the other end of the piping system.

STEP 3:
Pressurize the piping system to a minimum of 1.5 times the operating pressure. Disconnect the pressure source and monitor the gauge for a minimum test period

of 10 minutes. Gauges used in test equipment must be in good working condition (i.e., returning to 0, cover in place, and straight needles.) Gauges used must also be calibrated in increments no larger than 2 psi. A typical gauge used for this test has a range of 0-100 psi with 2 psi increments. A successful test will show no drop in pressure. If a pressure drop is noted, the leak must be located and repaired and a retest performed until no evidence of pressure drop is noted.

STEP 4:

After a successful test has been performed, the QC check list shall be signed (full signature) by the test personnel.

(2) LEAK TESTING THE REGULATED HIGH PRESSURE PIPING SYSTEM

STEP 1:

Ensure the entire regulated high pressure propane piping system is fully assembled and complete including connection to both of the regulators. Ensure a uniform temperature of air and piping throughout the test period.

STEP 2:

Connect a source of pressure to the high-pressure regulator so the high-pressure piping system is at system pressure allowed by this regulator.

STEP 3:

Spray the connection of the regulated high pressure piping system to each regulator with soapy water or leak detector bubble solution. Do not use any product containing either ammonia or chlorine. If a leak is present, the soapy water or bubble solution will "bubble" at the leakage point. Repair if a leak is present and retest until a successful test has been performed.

STEP 4:

After a successful test has been performed, the QC check list shall be signed (full signature) by the test personnel.

Fuel Distribution and/or Dispensing System Leakage Test
Code Reference NFPA 1192 2021 Edition Paragraph 5.9.12

A pressure test of the fuel distribution and/or dispensing system must be performed prior to fuel being introduced. This test includes all fuel piping for the fuel transfer/dispensing system, as well as the piping system to a generator or generator prep. Two acceptable procedures for performing the test are outlined below.

(1) AIR PRESSURE TEST

STEP 1:

Ensure the entire fuel distribution and/or dispensing system is fully assembled and complete including the fuel dispensing pump and nozzle assembly. If fuel piping for

a generator is present the generator should not be connected to the piping. Ensure a uniform temperature of air and piping throughout the test period.

STEP 2:

Cap or pinch closed the end of the hose attached to the rollover vent valve, and the end of the fuel distribution hose that would attach to the generator if applicable.

STEP 3:

Pressurize the entire fuel piping system and tank to a minimum of 1 psi. Disconnect the pressure source and monitor the gauge for a minimum test period of 10 minutes. Gauges used in test equipment must be in good working condition (i.e., returning to 0, cover in place, and straight needles.) Gauges used must also be calibrated in increments no larger than 1/10 psi. A common gauge used for this test is 0-5 psi with 1/10 psi increments. A successful test will show no drop in pressure. If a pressure drop is noted, the leak must be located and repaired and a retest performed until no evidence of pressure drop is noted.

STEP 4:

After a successful test has been performed, the QC check list shall be signed (full signature) by the test personnel.

(2) BUBBLE-TYPE LEAK DETECTOR

STEP 1:

Ensure the entire fuel distribution and/or dispensing system is fully assembled and complete including the fuel dispensing pump and nozzle assembly. If fuel piping for a generator is present the generator should not be connected to the piping. Ensure a uniform temperature of air and piping throughout the test period.

STEP 2:

Cap or pinch closed the end of the hose attached to the rollover vent valve, and the end of the fuel distribution hose that would attach to the generator if applicable.

STEP 3:

Attach a bubble-type leak detector apparatus between the fuel piping system and a source of air pressure. A bubble-type leak detector is a special test apparatus that indicates leaks by the presence of any bubbling or bubble movement in its special chamber.

STEP 4:

Pressurize the piping system to a minimum of 1 psi. Allow the system to sit 10 minutes for equalization, then monitor the special chamber on the bubble-type leak detector for one full minute. A successful test will show no bubbling or bubble movement in the chamber over the one-minute period. If a leak is detected, it must be repaired and a retest performed until no bubbling or bubble movement occurs in the test chamber of the bubble-type leak detector device.

STEP 5:

After a successful test has been performed, the QC check list shall be signed (full signature) by the test personnel.

LV Operational Test
Code Reference ANSI/RVIA 2020 Edition LV Standard Section 8-1

This paragraph requires that an operational test of all low voltage circuits be conducted to demonstrate that all equipment is connected and in electrical working order.

This test is to be conducted after all production activities that may damage conductors, such as installation of fasteners or hole cutting have been completed.

120- OR 120/240-Volt Dielectric Testing Code Reference NEC 2020 Edition Paragraph 551.60

This test will usually need to be performed prior to the first time the RV is plugged in during production and during the final stages of production after any activities that could damage conductors such as fastener installation or hole cutting have been performed. Only one test would be needed if this test is performed in the final stage of production and the RV is never plugged in until this time.

STEP 1:

Disconnect all fixtures and appliances, especially those containing motors. Turn all 120V wall switches to the "ON" position and all circuit breakers to the "ON" position. Remove the GFCI receptacle, if installed, and complete the circuit by connecting the appropriate wires together (white to white, black to black and ground to ground). Remove the GFCI breaker if installed. You have to test this circuit at the panelboard.

STEP 2:

Set the dielectric tester to the required setting. Test the dielectric tester to ensure good working condition. Make sure the buzzer sounds and the test light functions so a breakdown can be identified. The dielectric tester shall be calibrated annually or as required by the equipment manufacturer, whichever is less. The test prongs shall be in good condition, and lights and buzzers shall be working.

TEST SETTINGS
A MINIMUM OF 1 MINUTE at 900 VOLTS AC or 1280 VOLT DC
A MINIMUM OF 1 SECOND at 1080 VOLTS AC or 1530 VOLT DC

NOTE:
DO NOT EXCEED 1250 VOLTS WHEN CONDUCTING THE 1 SECOND TEST USING AC

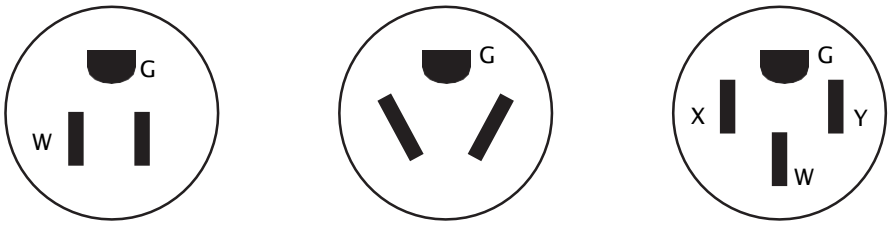
DIELECTRIC TESTER

Before performing the dielectric test, make all surrounding employees aware that a test is about to be performed and keep them clear until the test is completed.

STEP 3:

Apply the test voltage between the grounding conductor and the current carrying conductors. This can be performed at the power cord or at the panelboard. Also remember, 120-volt wiring installed, which supplies current from the generator or inverter to RV circuits, must be dielectric tested. When testing, the generator or inverter needs to be disconnected from the system. Generator and air conditioner prep circuits must also be tested.

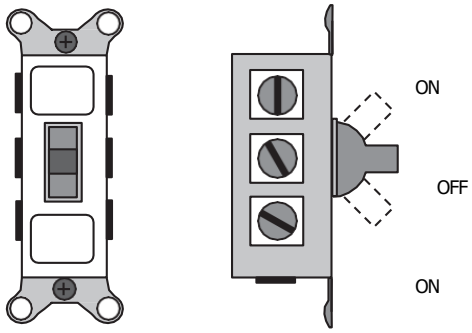
The diagram below shows where to apply the test voltage to common power cord configurations:



Apply voltage between each blade and the ground blade (G).

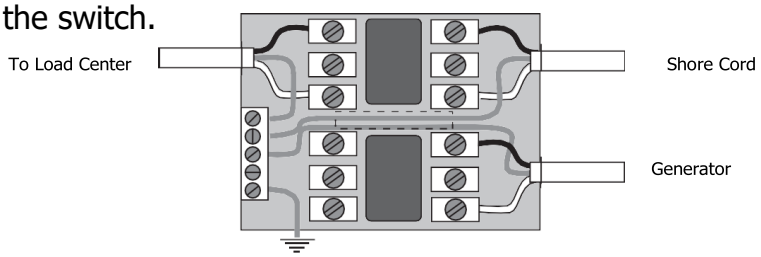
STEP 4:

In systems which contain selector switches, typically allowing the selection of appliances to be used, the circuit used to power the switch shall be tested in both "ON" positions.



STEP 5:

If a generator/shore power transfer switch is included in the system the test must be performed to assure conductors on both sides of the transfer switch are tested. This can be accomplished at the transfer switch by testing the conductors on each side of the switch.



STEP 6:

After a successful test has been performed, the QC checklist shall be signed (full signature) by the test personnel.

Continuity Test
Code Reference NEC 2020 Edition Paragraph 551.60(1)

To ensure all metallic parts that could become energized are bonded, a continuity tester is the most common tool used to perform this test.

STEP 1:

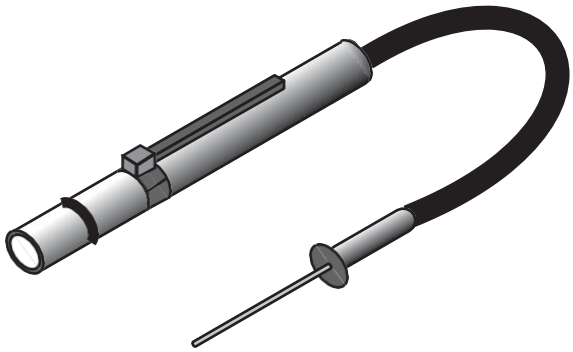
Place one end of the tester in the "GROUND" hole of a receptacle or to the vehicle chassis and touch the other end to the metallic part that is being tested (example: range connected with metal propane piping). The light will illuminate if continuity is achieved. The continuity tester shall be in good working condition. Good batteries and light bulb shall be working. One of the best places to perform this test is at an appliance such as a range or exterior compartment of the refrigerator.

ITEMS TO BE BONDED

- Propane system
- Vehicle chassis
- Metallic exteriors
- Furnace and metal circulating ducts
- Metallic water lines
  and
- All metallic non-current carrying parts that may become energized

STEP 2:

After a successful test has been performed, the QC check list shall be signed (full signature) by the test personnel.



Operational Test
Code Reference NEC 2020 Edition Paragraph
551.60(2)

STEP 1:

Test operation of all 120V devices including GFCI devices.

STEP 2:

After a successful test has been performed, the QC check list shall be signed (full signature) by the test personnel.

Polarity Test
Code Reference NEC 2020 Edition Paragraph 551.60(3)

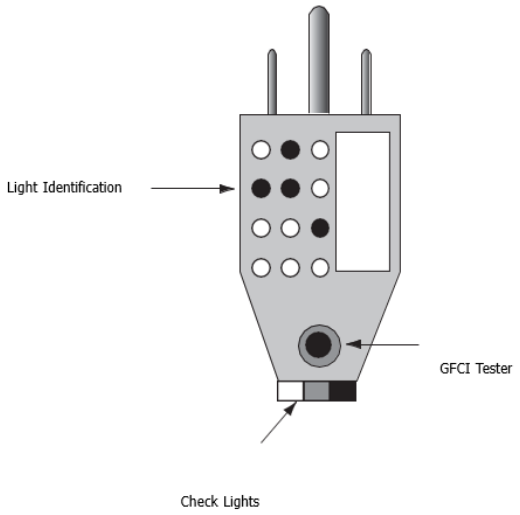
This test is usually performed with a polarity checker or circuit tester that has a button to create a fault.

STEP 1:

Insert polarity checker or circuit tester into all receptacles and observe the illuminated lights. Refer to the test devices instructions or illustrations as to how wiring has been completed. Repair if needed. Remember to ensure correct polarity of the circuit to which the RV is plugged in.

STEP 2:

After a successful test has been performed, the QC check list shall be signed (full signature) by the test personnel.



GFCI Test
Code Reference NEC 2020 Edition Paragraph 551.60(4)

This test is usually performed with a circuit tester that has a button to create a fault.

STEP 1:

Insert the circuit tester into each receptacle that is on a GFCI and push the fault button on the circuit tester. The GFCI receptacle or circuit breaker should trip. If the receptacle being tested is downstream of a GFCI receptacle, that GFCI receptacle should trip.

STEP 2:

After a successful test has been performed, the QC check list shall be signed (full signature) by the test personnel.

Water Distribution Piping Systems Pressurized Test

This test must be performed on all pressure water piping in the distribution system. This test can be performed by two different methods.

TEST METHOD 1
Code Reference NFPA 1192 2021 Edition Paragraph 7.7.2.1.1

STEP 1:

Ensure the entire water distribution system is fully assembled and complete, including the water heater.

STEP 2:

Fill the entire piping system including the water heater storage tank and the pressure potable water storage tank (if present) with water.

STEP 3:

Pressurize the piping system with 80-100 psi of air or water pressure. Disconnect the pressure source and monitor the gauge for a minimum test period of 10 minutes. The test gauge used must have minimum 2 psi increments or a needle measuring at least 1-1/2 inches from its pivot point to its end. A successful test will show no pressure drop or leak. If pressure drop is noted, repair the piping, then retest until no pressure drop is noted. (See P-88 for guidance regarding where to connect the source of pressure to the system.)

STEP 4:

After a successful test is performed, the QC check list shall be signed (full signature) by the test personnel.

TEST METHOD 2
Code Reference NFPA 1192 2021 Edition Paragraph 7.7.2.1.2

STEP 1:

Ensure the entire water distribution system is fully assembled and complete. The water heater must be by-passed as well as the pressure potable water storage tank (if present). To bypass the water heater, use the bypass valves if present. If no bypass valves are present bypass the water heater by connecting the incoming and outgoing water supply lines together. Failure to bypass the water heater and storage tank can result in damage to the appliances and possible bodily injury.

STEP 2:

Pressurize the piping system with 80-100 psi of air pressure. Disconnect the pressure source and monitor the test gauge for a minimum test period of 10 minutes. The test gauge used must have minimum 2 psi increments or a needle measuring at least 1-1/2 inches from its pivot point to its end. A successful test will show no pressure drop or leak. If pressure drop is noted, repair the piping, then retest until no pressure drop is noted. (See P-88 for guidance regarding where to connect the source of pressure to the system.)

STEP 3:

Pressure the piping system with 30 psi of air pressure and water heater shall be connected to the system. The test gauge shall be the same used in Step 2. Disconnect the pressure and monitor the system for a minimum test period of 10 minutes.

STEP 4:

After a successful test is performed, the QC check list shall be signed (full signature) by the test personnel.

Tests for Drainage and Vent Systems
Code Reference NFPA 1192 2021 Edition Paragraphs 7.7.3, 7.7.3.1, 7.7.3.2

These tests must be performed on all drainage piping within the RV.

FLOOD AND FLOW TEST:

STEP 1:

Ensure all plumbing fixtures are connected and fully assembled. Be sure ABS sealant has had sufficient time to setup. Ensure the RV is level.

STEP 2:

Secure the cap on the main drain and close all fullway valves. (If the system is arranged for liquid waste to bypass a holding tank, then the fullway valve, if any, must be open and the main drain cap in place to permit filling of the entire system up to the toilet flood level.)

STEP 3:

Fill the drainage system connected to the body waste holding tank to the flood level of the toilet bowl. If a tub or shower is on this drainage system, it must have the drain plugged. Fill the drainage system connected to the liquid waste holding tank to the level of the lowest connected trap arm (usually the tub or shower).

STEP 4:

Monitor the test for a minimum of 15 minutes. Observe all drain piping, visually checking for any leakage. If leaks are noted, repair and retest until no leakage is noted.

STEP 5:

Fill all the fixtures in the RV with water (it is not necessary to completely fill the tub). Release the water from all the fixtures simultaneously. Check visually for leaks and retarded flow. Repair and retest if necessary.

STEP 6:

After a successful test has been performed the QC check list shall be signed (full signature) by the test personnel.

Laboratory Test Procedure for Testing Piping Size of Propane Systems in or on Recreational Vehicles.

NFPA 1192 Chapter 5 Fuel Systems and Equipment Section 5.3.4.1 require Propane systems to be sized so that the pressure drop to any appliance inlet connection from the propane supply connection or connections, when all appliances are in operation at maximum capacity, is not more than 0.5 in. water column (0.12 kPa).

Compliance can be demonstrated by the tables in the body of the standard or by testing the system or representative system.

NOTE: The term piping includes pipe, tubing, and hose while the term pipe describes only (iron pipe).

Test Procedure

- The system needs to be fully assembled, and all system available appliances are to be connected completely connected so appliances are operational.
- If the system has optional appliances or equipment available, the appliance of equipment with the higher BTU/hr rating is to be connected.
- Connect a pressure gauge or manometer as follows.
- In-line directly at the system regulator outlet and the main system supply-piping inlet.
- Connect a pressure gauge or manometer, in-line, at each appliance directly between the appliance and branch supply tubing or hose.
- The ambient air and the piping system temperature needs to be as equal as practicable
- Testing with unequal temperatures will likely affect pressure that may indicate a false negative.
- Also, avoid sudden temperature changes during testing.
- If a sudden temperature change should occur during testing, it is notable "rubber" hose can be adversely affected faster and will take much longer to recover
- The system should be tested to ensure the system is leak free.
- Pressurize the system.
- Ensure all gauges and manometers all read equal pressure.
- When the system is charged with propane, the system will need to be purged of air.
- Purging air is accomplished by lighting one or two appliances and operating for a brief period.
- Light each appliance so each is operating simultaneously at its maximum input capacity.
- If lighting an appliance is difficult, air pocket of air may yet be in the system - bleed the system again to ensure all air has been purged.
- **⚠ CAUTION** If the water heater will be operating for an extended time, the water heater should be filled with water. It is detrimental to the water heater tank to operate it dry.
- If the system includes a propane operated auxiliary generator it will be required; to be connected.

- Have an electrical load to have the generator attain its maximum propane consumption.
- For cooking appliances with top cooking and an oven, all top burners and oven burner are to be lit.
- Allow the system to operate for a brief period to ensure the propane flow is equalized through the entire system.
- Observe and record the pressure at each gauge.
- The gauge at the regulator is the benchmark of the system.
- The pressure at each of the gauges connected the appliances is to be no more than 0.5-inch water column (0.29 oz/in2) (0.12 kPa).

Test Reports

- Each system tested shall be supported with a written report that contains the minimum information and data.
    - A layout drawing of the system as tested.
        - Include details of pipe, tubing and hose sizes (I.D. X length)
        - Include details of all system fittings.
        - Brass TEES's
        - Brass Elbows
        - Brass 4-way TEE'S (cross)
        - Iron pipe TEE'S
        - Iron pipe elbows
        - Iron pipe couplers
        - Quick connect fittings
    - Identification of all appliances
        - Make
        - Model Number
        - BTU/h rating - as listed on the appliance rating plate.
    - Location and pressure reading of each gauge or manometer.
        - As equalized before the test.
        - During the test.

- Subsequent or subordinate system designs
- Representative testing of a "worst case" system to establish conformity of subsequent systems may be conducted.
    - It is essential to carefully evaluate individual systems to ensure all relative parameters are met and can be correctly extrapolated from systems tested compared to subsequent designs.
    - Worst case can have highest demand appliances located the furthest piping distance from the main supply source
        - At this configuration, the lower demand appliances may take enough of the available piping supply thereby not enough propane is available to meet the higher rated appliance demands at or near the system end.
    - At the front closest to the main supply

    - At this configuration, the higher demand appliances may take larger portion of available piping supply thereby starving lower rated appliance at or near the system end.
- Written test reports must be available,
    - Upon request, for review by any codes and standards staff field inspector.
    - Be included as a required element of any model plan submittal package to any state oversight division in accordance to the current edition of ANSI/RVIA Uniform Plan Approval, ANSI/UPA-1
    - Canadian third-party agencies.

Weight Label Program Requirements

Federal Weight Label Requirements for RVs

For years, RVIA maintained a program requirement to have a weight label in place, as a condition of membership. However, in 2008, NHTSA established Federal weight label regulations, and it was determined that the RVIA weight label and the Federal weight label, if both used on the same RV, could cause confusion for the consumer. Therefore, the RVIA Board of Directors rescinded the RVIA weight label requirement effective June 2, 2008.

PLEASE NOTE: Several types of RVs were excluded from the Federal weight label requirements by NHTSA. However, the RVIA BOD believed that all RVs should have weight label information to better assist the consumer in making a RV purchasing decision. Therefore, the BOD voted that, as a condition of membership, all RVs would need to use the Federal RV weight label whether mandated by NHTSA or not. The specific March 2008 motion of the RVIA BOD reads as follows:

FURTHER RESOLVED, that RVIA require those RV types not covered by the Federal weight label requirements of FMVSS 110 or 120 to comply with the applicable FMVSS (110 or 120) as a condition of RVIA membership effective June 2, 2008. This will not apply to truck campers as they are subject to other Federal weight requirements.

The requirements for the weight labels were posted in the Federal Register (DOT-NHTSA-FMVSS Final Rule on Cargo Carry Capacity - 49 CFR Part 571 - DOT Docket No. NHTSA-2007-0040, Federal Register/Vol. 72, No. 232/Tuesday, December 4, 2007, Pages 68442-68466). The specific requirements are separated between RVs that have a gross vehicle weight rating (GVWR) above and below 10, 000 pounds GVWR. The requirements are essentially the same, but for RVs over 10, 000 pounds the requirements are located in FMVSS 120, and for those below 10, 000 pounds the requirements are located in FMVSS 110. See following pages for an "exception" from 49-CFR part 571 relating to the motorhome and trailer labeling requirements.

One requirement contained within the new Federal Standards is that the weights required to be provided by the RV manufacturer must be accurate. NHTSA does not tell manufacturers how to accomplish this, but states accuracy is a mandated requirement. NHTSA also stated there are no provisions to allow for material variances, i.e. added weight caused by moisture absorption of wood, steel thickness, etc. When checking with NHTSA, they said, unofficially, that they deter- mine accuracy to be within 1%.

(RVIA SNB 1108)

Motor home cargo carrying capacity labels

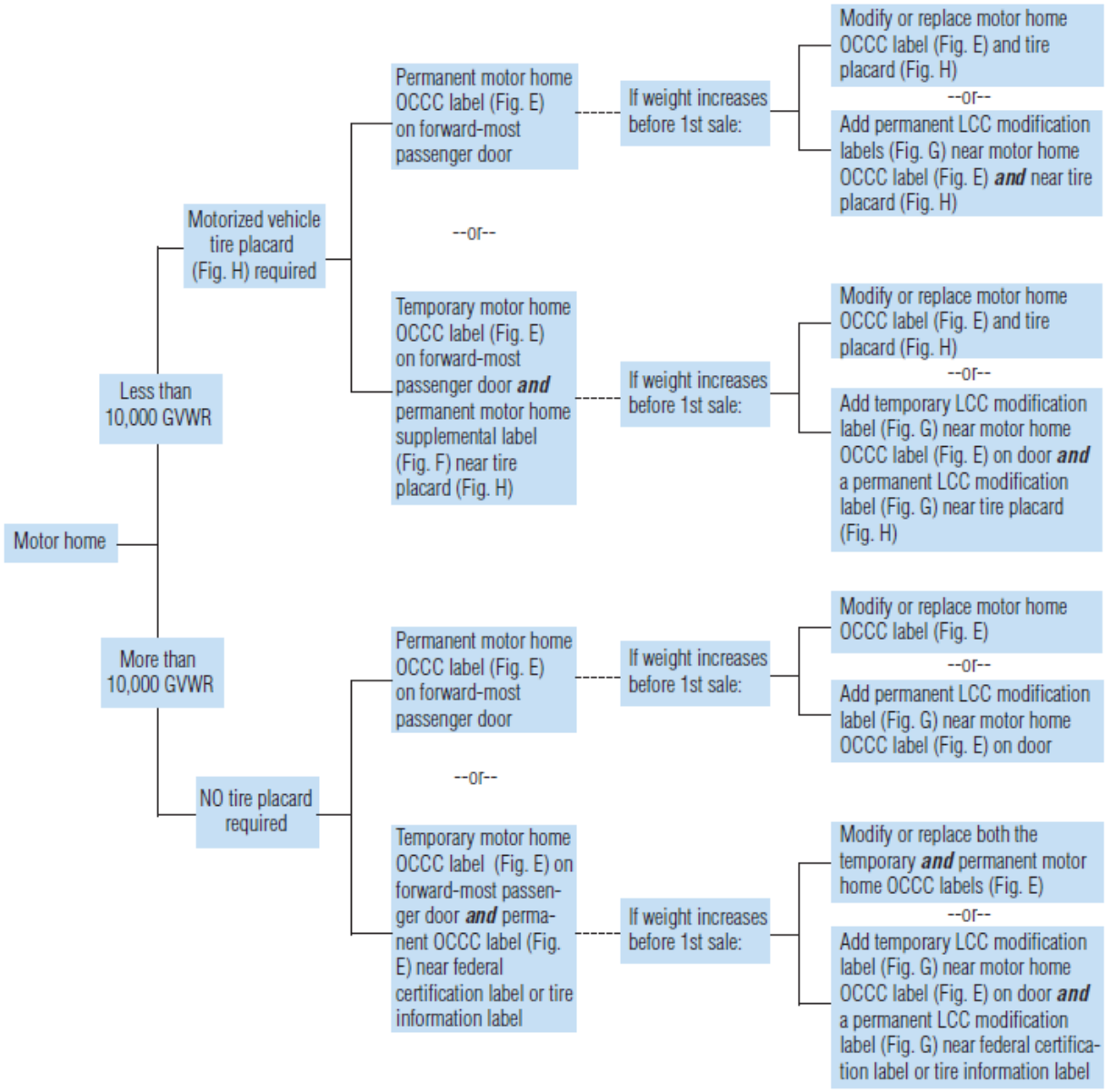


Figure E: Text Required For Motor Home Occupant & Cargo Carrying Capacity (OCCC) Label

MOTOR HOME OCCUPANT AND CARGO CARRYING CAPACITY VIN: ##################
THE COMBINED WEIGHT OF OCCUPANTS AND CARGO SHOULD NEVER EXCEED

XXX kg or XXX lbs

Safety belt equipped seating capacity: XXX
CAUTION:

Figure F: Text Required For Motor Home Supplemental Label

CAUTION:

A full load of water equals XXX kg or XXX lbs of cargo @1 kg/L (8.3 lb/gal)

Figure G: Text Required For Load Carrying Capacity (LCC) Modification Label

CAUTION: LOAD CARRYING CAPACITY REDUCED

Modifications to this vehicle have reduced the original load carrying capacity by

Figure H: Tire Placard for Motorized Vehicles

TIRE AND LOADING INFORMATION

SEATING CAPACITY	TOTAL XX	FRONT X	REAR X

TIRE	SIZE	COLD TIRE PRESSURE	
FRONT	XXXXXXXXXXXXX	XXXXXXXXXXX	SEE OWNER'S MANUAL FOR ADDITIONAL INFORMATION
REAR	XXXXXXXXXXXXX	XXXXXXXXXXXX	
		XXXXXXXXXXX	

Recreational vehicle trailer cargo carrying capacity labels

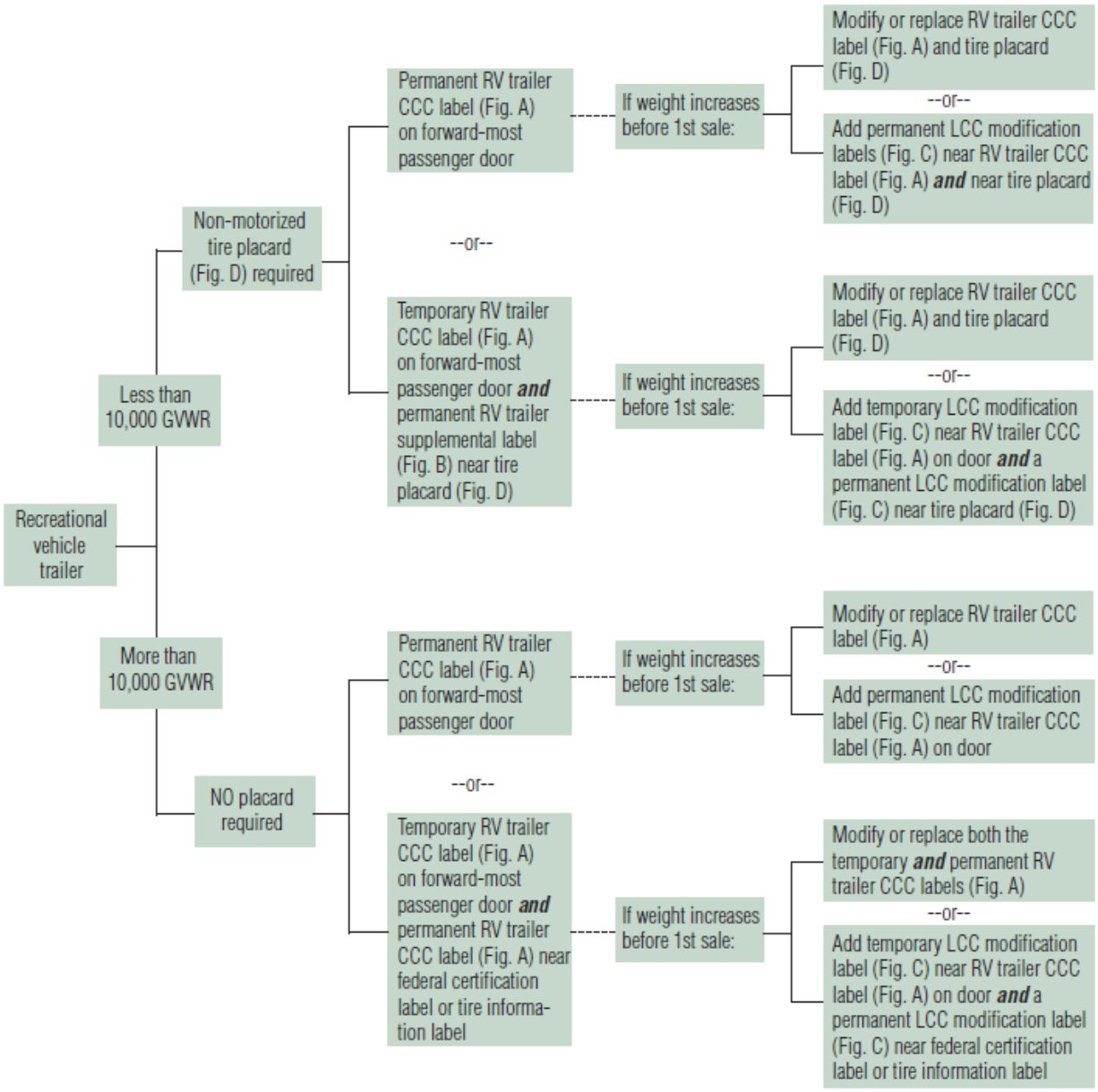


Figure A: Text Required For RV Trailer Cargo Carrying Capacity (CCC) Label

RECREATION VEHICLE TRAILER CARGO CARRYING CAPACITY VIN: ##################
THE WEIGHT OF CARGO SHOULD NEVER EXCEED

XXX kg or XXX lbs
CAUTION:

Figure B: Text Required For RV Trailer Supplemental Label

CAUTION:

CAUTION: LOAD CARRYING CAPACITY REDUCED

Modifications to this vehicle have reduced the original load carrying capacity by

Figure C: Text Required For Load Carrying Capacity (LCC) Modification Label

Figure D: Tire Placard for Non-Motorized Vehicles

TIRE AND LOADING INFORMATION

The weight of cargo should never exceed

TIRE	SIZE	COLD TIRE PRESSURE	
FRONT	XXXXXXXXXXXXX	XXXXXXXXXXX	SEE OWNER'S MANUAL FOR ADDITIONAL INFORMATION
REAR	XXXXXXXXXXXXX	XXXXXXXXXXX	
		XXXXXXXXXXX	

XXXXXXXXXXXX

Code Updating Process for NFPA 1192, NEC, and ANSI LV Standard

NFPA 1192 Standard for RVs, National Electrical Code, and ANSI/RVIA LV Standard for Low Volt- age Systems in Conversion and RVs are consensus standards developed under the guidelines adopted and published by the American National Standards Institute. Their rules for a consensus standard to become "ANSI approved" mandate an opportunity for:

1. Anyone to recommend proposals or comments to update or modify the requirements of the standards;

2. Public review of the committee's actions regarding the acceptance or rejections of a proposal or comment; and

3. Letter ballots from the committee, made up of various interest groups (i.e., users, manufacturers, enforcement officials, third party testing agencies, insurance officials, etc.) wherein no one interest group can comprise more than one-third of the committee membership, agreeing in writing the standard is indeed a "consensus document."

The RV standards are currently on a three-year cycle meaning the requirements are reviewed for accuracy and completeness and revised accordingly every three years. The maximum cycle for an ANSI standard is five years.

Every code cycle, a schedule is established for updating of the standards. Anyone wishing to recommend a change to the standard, including additions, deletions, or modifications of existing language, can submit his recommendation to the appropriate committee as a proposal to change the standard. There is always a proposal closing date to help control the workload of the committee and to define the extent of the work the committee needs to address during a cycle revision. Once the proposals are in, a balanced committee, approved by ANSI, meets to review and act on the proposals. Any proposals received prior to the proposal closing date must be accepted, accepted in part or principle, rejected or held for further study. All committee actions, other than accept must have the committee's written reason for the action taken along with any committee recommended change to the proposal and why.

The committee work on the proposals are then made available for public review by any interested party. If any individual, state or other organization disagrees with the committee's action on a proposal, a comment can be submitted to the committee outlining the objection, reason for the objection and a recommendation for the committee to consider. All comments must be received by the comment closing date. The committee again meets to review and act on all comments. Substantive changes must again be made available for public review with an action for additional comment. No new proposals are allowed and if comments cannot be resolved, they are held for further study and resolution during the next code cycle. Upon completion of the

committee work, the revised standard is approved by NFPA and then finally published.

Current Editions of the Standards – RVIA Effective and Enforcement Date

NFPA-1192 Standard for Recreational Vehicles 2021-Purchase from RVIA.org/store

NFPA-1192 Recreational Vehicles Standards Handbook 2021- Purchase from RVIA.org/store

ANSI/RVIA- Standard for Low Voltage Systems in Conversion and Recreational Vehicles 2020-Purchase from RVIA.org/store

NFPA 70 National Electrical Code-2023- This publication must be purchased directly from www.nfpa.org

RVIA Handbook Process

The RV Handbook has been assembled in a cooperative effort between those states that have RV enforcement programs and the RV industry. It expands upon the standards and safety requirements of the ANSI/RVIA LV Standard for Low Voltage Systems in Conversion and RVs, National Electrical Code and the NFPA 1192 Standard for RVs.

The primary reason for developing this document is to establish a tool that can be used by all interested parties in an effort to obtain uniformity to the maximum degree possible in enforcement positions. Not every situation is outlined within the RV Handbook and it is understood that other situations will arise that will require resolution. This document is also intended as a service to interested parties to identify any areas where enforcement uniformity does not exist.

All proposed enforcement positions received from the manufacturers, inspectors, suppliers, testing and third-party listing agencies and the RV code states are processed by RVIA. All proposed changes are reviewed by industry established technical committees, which the RV code states are invited to attend, and modified as necessary prior to distribution to the RV code states for their review and written approval. RVIA has made an agreement with the states that no change will be made to the RV Handbook without their approval. If a topic cannot be resolved, the differing positions of the state is published at the bottom of the page in the RV Handbook. This way everyone with an interest can review the enforcement position in use and if deficiencies exist, corrections can be made.

In addition, because the RV standards (NFPA 1192/NEC/ANSI-RVIA LV) are updated every three years to keep the industry current on new safety considerations, the code states have been working together to agree on enforcement positions, transition timing and other similar activities to assist the industry.

The entire content of the RV Handbook is comprised of opinions based on the

experiences of those participating in its development. It is not intended to be represented as a RV Handbook of official interpretations either of the National Fire Protection Association (NFPA) or the American National Standards Institute (ANSI). Furthermore, this RV Handbook was not developed nor intended to be used as a design specification or an instruction manual for untrained persons. Finally, in the event it is subsequently determined that there is a conflict between the NFPA 1192 Standard, NEC, or ANSI/RVIA LV Standard and this RV Handbook, the NFPA 1192 Standard, NEC, or ANSI/RVIA LV Standard shall control.

Component Listing Requirements and Applicable Listing Standard Reference Guide

Rev. 09/22

Overview: RVIA does not allow the use of a component that only bears a "CE" mark, as that is a self-certification by the component manufacturer. RVIA only allows components to be used that have been properly listed by one of our approved third-party listing agencies. A list of our approved third-party listing agencies that also contains contact information for each respective agency can be found on our website at rvia.org and is updated every three years accordingly. Listing standards for specific components are defined below, when applicable.

I. Low Voltage System

- All conductors sized 6-18 AWG must be listed to UL and shall be appropriately marked as required by the listing agency. All other conductors shall conform to the requirements of SAE J1127 or J1128.
- Wire nuts, bell caps, and terminal ends shall be listed
- Low voltage fixtures must be listed to UL 234 or CSA C22.2 No. 250 (except sections 9-12). These fixtures but cannot be installed within 18" directly above a mattress unless permitted by the listing OR is provided with direct contact shielding if the fixture is over 4 watts.
- Rechargeable (lithium-ion) battery systems must be listed as a battery or system. Lithium battery listings must be listed to UL 1973 (Batteries for use in Stationary and Motive Auxiliary Power Applications) or UL 2054 (Household and Commercial Batteries).
- DWV UV air purifier systems must be listed to TEi SFE-P004.
- Electric ventilation fans must be listed to UL 507 (except sections 52-55, 65-89, 108-178) or CSA C22.2 No. 113 (except sections 8-10).

- Specialty electric heaters must be listed to UL 1278 or CSA C22.2 No. 46 (except sections 5, 13,5.16, 7.6.6, and 8).
- Subfloor heating panels must be listed to UL 1693 or CSA C22.2 No. 130.

II. 120-volt System

- Converters must be listed to UL 458.
- Alternate sources of AC power shall be listed for RV or land vehicle use. Generators must be listed to ANSI EGS-1
- All 120v electrical devices must be listed. (Including witches, boxes, enclosures, amp connectors, etc.)
- Panelboards must be listed to UL 67.
- Power supply assemblies must be listed for RV use.
- Exterior flexible cords (SJO cable) to slide out rooms must be listed for hard usage.
- Terminals must be listed for the type of wire that's being used. (Stranded, solid, or both)
- All conductors must be listed.
- Outdoor fixtures and other equipment must be listed for such use.
- Ground screws, clips, or terminals must be listed.
- Means of bonding metal gas piping, water piping, siding, roofing, and all other non-current carrying metal parts shall be listed.
- Boxes that are mounted to paneling must be listed for such use.
- Nonmetallic cable routed outdoors or under chassis and exposed to moisture or physical damage shall be protected by conduit listed for direct burial.
- All concealed electrical fittings or connections must be listed for the purpose.
- Automatic transfer switches used with an inverter system must be listed for use in emergency systems or optional standby systems.
- Flexible cord entering a wall must be installed in a listed nonflexible conduit or tubing from the outlet box inside the vehicle to a strain relief connector listed for wet locations located on the underside of the vehicle.
- Terminals must be listed for multiple conductors for multiple conductors to be present under the same terminal.
- Motor base receptacles for detachable power cords must be listed for wet location.
- Receptacles in plumbing service areas with hose sprayer or city water fill must have a cover that is listed for wet locations.
- Fans and ventilators must be listed to CSA C22.2 No. 113-15 or UL 507.
- Room air conditioners must be listed to UL 484 or CSA C22.2 No. 117.
- Electric clothes dryers must be listed to CSA C22.2 No.112-21 or UL 2158.
- Clothes washers must be listed to CSA C22.2 No. 169-18 or UL 2157.
- Battery chargers must be listed to UL 1236 (except sections SC-SE) or CSA C22.2 No. 107.2 (except section 9).
- Electric spas must be listed to ANSI/APSP/ICC 14, UL 1563, or CSA C22.2 No. 218.1.
- Electric water heaters must be listed to UL 174 or CSA C22.2 No. 110.

III. Heating/Propane System

- Propane container appurtenances must be listed.
- Propane containers must be equipped with a listed overfill protection device.
- All propane systems must be supplied with a two-stage regulator or an integral two-stage regulator that must be listed to UL 144 or ANSI Z21.18, or CSA 6.3.
- A listed propane excess flow valve must be provided with all ASME tanks.
- All high-pressure propane appliances must be listed for RV use.
- Flexible nonmetallic tubing or hose must be assembled using listed hose and listed fittings or be a part of a listed assembly.
- All pipe thread sealant used in the propane system must be listed for use with propane.
- Listed high pressure flexible connector listed as an assembly using ANSI/UL 569 or ANSI/UL 21 hose must be used if the propane cylinders are removeable, if the regulator is mounted on a support bracket.
- Flexible hose connectors listed to UL 569 or UL 21 must be used from the regulator to the propane piping system if the regulator is mounted on a support bracket.
- Quick disconnect devices must be listed AND listed for the specific environment in which they are being used (indoor, outdoor, or both).
- Shut-off valves must be listed for use with propane.

Fuel-Burning Appliances / Electric Heating and Cooking Appliances / Refrigeration

- All fuel-burning appliances must be listed for RV use (interior and exterior).
- Gas water heaters must be listed to CSA/ANSI Z21.10.1:19 / CSA 4.1:19 or ANSI Z21.10.3-2017 / CSA 4.3.
- Furnaces and water heaters that are installed on carpet or vinyl must be listed for that purpose.
- There are multiple product listing standards for air heaters/furnaces.
- Automatic electrical burner control systems must be listed to ANSI Z21.20-2014 / CAN/CSA-C22.2 No. 60730-2-5-14.
- Automatic electrical burner ignition controls must be listed to UL 372.
- Gas-fired central furnaces must be listed to CSA/ANSI Z21.47:21 / CSA 2.3:21.
- Vented gas-fired space heating appliances must be listed to ANSI Z21.86-2016 / CSA 2.32-2016.
- Vented gas fireplace heaters must be listed to CSA/ANSI Z21.88:19 / CSA 2.33:19.
- Electric air heaters must be listed to CSA C22.2 No. 46-13.
- Electric heating and cooling equipment must be listed to UL 1995, CSA C22.2 No. 236, or UL/CSA 60335-2-40.
- Oil-fired warm-air heating appliances must be listed to CSA B140.10:06.
- Electrical heat pumps, air conditioners, and dehumidifiers must be listed to UL 60335-2-40.
- Liquid fuel-burning heating appliances used in manufactured homes and RV's must be listed to UL 307A.
- Gas-burning heating appliances used in manufactured homes and RV's must be listed to UL 307B.
- Movable and wall or ceiling-hung electric room heaters must be listed to UL 1278.

- Fixed and location-dedicated electric room heaters must be listed to UL 2021.

- There are multiple applicable listing standards for cooking appliances used in RV's.

    - RV gas cooking appliances must be listed to ANSI Z21.57-2010 or ANSI Z21.57a-2012 (addendum to the previously mentioned listing standard).
    - Outdoor cooking gas appliances must be listed to ANSI Z21.58-2018 / CSA 1.6-2018.
    - Outdoor cooking specialty products must be listed to ANSI Z21.89-2017 / CSA 1.18-2017.
    - Propane fired cooking appliances for recreational vehicles must be listed to CAN1-1-16-M79 (R2001).
    - Household cooking and liquid-heating appliances must be listed to CSA22.2 No. 64-10.
    - Domestic gas ranges must be listed to CAN 1-1.1-M81 (R2011).
    - Gas-fired cooking appliances for RV's must be listed to UL 1075.
    - Microwave cooking appliances must be listed to UL 923.
    - Household electric cooking and food serving appliances must be listed to UL 1026.
    - Outdoor decorative gas appliances must be listed to ANSI Z21.97-2014 / CSA 2.41-2014.
    - Electric cooking ranges must be listed to UL 858 (except sections 59.3.4 – 59.3.7, 61, and 63) or CSA C22.2 No. 61.
    - Gas clothes dryers must be listed to ANSI Z21.5.1 / CSA 7.1. If the dryer is installed in a closet or alcove, it must be listed for such purpose.
    - Refrigerators must be listed to ANSI Z223.1.
    - Refrigerators using gas fuel must be listed to ANSI Z21.19 / CSA 1.4.
    - Motor-compressors in household and similar electrical appliances must be listed to UL 60335-2-34.
    - Refrigerating appliances, ice cream appliances, and ice makers must be listed to UL 60335-2-24.

- Heating system duct material must be steel, aluminum, Class 0, or Class 1 listed material.
- Nozzles used for dispensing fuel must be listed to ANSI/UL 2856.
- Fuel dispensing hose must be a hose assembly listed to ANSI/UL 330.
- Pumps used in the fuel dispensing system must have their motor section listed as explosion proof.

IV. Fire and Life Safety

- Smoke alarms must be listed to ANSI/UL 217 AND be marked as suitable for RV use.
- Each RV with fuel-burning equipment or a 120v electrical system must be equipped with a fire extinguisher with a rating of 1A: 10B:C.

- Carbon monoxide detectors must be listed to ANSI/UL 2034 or CSA 6.19 and must be installed in all RV's.
- Propane detectors must be listed to ANSI/UL 1484 and must be installed in all RV's with a propane system.

V. Plumbing System

- All components used in the plumbing system must be listed.
- Tank flushing systems must be listed as a system.
- Pressure accumulators and water filter systems must have individually listed components if it is not listed as a system.
- Plastic pipe must be listed for hot water use when used in the hot water system.
- Interior shower hose must have a listed backflow preventer or an anti-siphon device if the hose can reach within 2 inches of a fixture's flood plane.
- Drainage pipe must be standard weight, galvanized steel, galvanized wrought iron, brass, or copper tube DWV, listed DWV plastic, or other approved or listed material.
- Flexible drainage connectors must be listed DWV and used as a part of a listed flexible drainage system.
- Side-vented systems must be constructed of listed components.
- Tank and pipe heaters must be listed to UL 499 (except sections 17, 19, 20, 23, 28, 33.2-33.14, 36-38, 39.2-39.19, 43A, 49-84, SA) or CSA C22.2 No. 130.
- Macerating pumps and toilets must be listed to ASME A112.3.4 or CSA B 45.9-18.
- Ceramic plumbing fixtures must be listed to IAPMO TS 22 or ASME A112.19.2 / CSA B45.1.
- Plastic plumbing fixtures must be listed to IAPMO TS 11 or ANSI Z124 / CSA B45.5.
- Stainless steel plumbing fixtures must be listed to IAPMO TS 20 or ASME A112.19.3 / CSA B45.4.

Water Distribution Systems

- Backflow preventers / vacuum breakers must be listed to ASSE 1001 or IAPMO TS 8 (US and Canada).
- Distribution system winterizing valves must be listed to IAPMO Z1157 or ASME A112.18.1 / CSA B125.1.
- Drinking water system components must be listed to NSF 61 (except section 7).
- Electrical pressure (water) pumps must be listed to ANSI/UL 778 (except sections 58-64) (Motor-Operated Water Pumps), CSA C22.2 No. 108-14 (except sections 7-9 and 11) (Liquid Pumps), or IAPMO TS 14.
- Flexible PVC hoses and tubing must be listed to IAPMO TS 25 or IAPMO Z1033.
- Miscellaneous plumbing fittings must be listed to NSF 24 / Sections 3 and 4.
- Plumbing supply fittings must be listed to ASME A112.18.1 / CSA B125.1.
- Potable water storage tanks must be listed to IAPMO TS 4 (US and Canada).
- Rigid plastic hoses and tubing must be listed to NSF 14 or CSA B137.

- Water fill inlets must be listed to IAPMO TS 13 (US and Canada).

Drainage Systems

- ABS drainage fittings must be listed to ASTM D2661, ASTM D3311, or CSA B181.1.
- Anti-siphon trap vent devices (pop vents) must be listed to ASSE 1051 or NSF 24 / Section 19 (US and Canada).
- Connector couplings must be listed to NSF 24 / Section 5 (US and Canada).
- Drainage sump systems must be listed to TEi SFE P002.
- Electrically operated termination valves must be listed to IAPMO TS 30, UL 429 (Class 2 non-hazardous liquid), or CSA C22.2 No. 139 (Class 2 non-hazardous liquid).
- Flexible drain systems must be listed to NSF 24 / Section 18 or CSA Z240.3.2.
- Flexible drainage connectors must be listed to IAPMO TS 35 or CSA Z240.3.2.
- Plastic drainage piping must be listed to IAPMO TS 19, CSA B181.1 (ABS), or CSA B181.2 (PVC).
- Plumbing waste fittings must be listed to ASME A112.18.1.2 / CSA B125.2.
- PVC drainage fittings must be listed to ASTM D2665, ASTM D3311, or CSA B181.2.
- Termination valves must be listed to IAPMO TS 30 or CSA Z240.3.2.
- Waste holding tanks must be listed to IAPMO TS 2 or CSA B45.6 (except sections 4-6).

Water Treatment Systems

- Drinking water treatment units must be listed to NSF 42 (aesthetic effects) or NSF 53 (health effects).
- Water softeners or deionizing systems must be listed to TEi SFE-P003.

RV INDUSTRY ASSOCIATION

STANDARDS NEWS BULLETIN

June 29
SNB - 09/20

RV Industry Association Board of Directors Approves Requirement to Add Vehicle Length Labels to All Manufactured Units

At the recent RV Industry Association's Board of Directors meeting, the following two motions were passed regarding RV length and labeling which will go into effect on January 1, 2021.

RESOLVED

The Board of Directors hereby approves the adoption of a Program Requirement requiring trailer length information to be affixed to each unit per the application details as included below.

Recreational Vehicle Overall Length Application Details
As a condition of RV Industry Association membership, each recreation vehicle shall be labeled with the unit's overall length in accordance with the following, effective 01/01/2021:

Labeling Requirements
The overall length of recreational vehicles shall be printed in the English language with a minimum font size of 3/32 in. (2.4 millimeters) high and be printed in black print on a contrasting background and shall be affixed immediately adjacent to the FMVSS §571.110 or §571.120 Cargo Carrying Capacity (CCC) or the Occupant and Cargo Carrying Capacity (OCCC) labels. The statement of the RV overall length shall read as follows.

Recreational vehicle overall length _____ as manufactured.

Travel Trailers. The length as measured from the leading front edge of the hitch coupler to the rear most extremity of the trailer, bumper or rear wall/rear cap if not equipped or installed with a bumper.

Fifth Wheel Trailers. The length as measured from the leading front edge of the pin box or extreme front of the front profile, whichever is further forward, to the rear most

extremity of the trailer, bumper or rear wall/ rear cap if not equipped or installed with a bumper.

Motorhomes. The length as measured from the extreme front profile to the extreme rear of the vehicle bumper or rear wall profile, if not equipped or installed with a bumper.

Recreational vehicle overall length shall exclude RV appurtenances as defined by the RV Manufacturer including but not limited to:

- Safety-related equipment, (e.g., signal lamps, clearance lamps, identification lamps, warning lights, appliance vents and vent hoods).
- Door latches and hinges.
- Entry and exit handholds.
- Exterior ladders.
- Spare tires and spare tire brackets/ carriers.
- Bumper mount outside cooking appliances.
- Combustion engine exhaust pipe termination(s)
- Hitch or cargo accessory receivers and
- Equipment used to secure cargo.

Recreational vehicle manufacturers are individually responsible for conformance to various state road use laws for vehicle size to determine dimensional requirements of the applicable jurisdiction(s) where recreational vehicles will be shipped to the first point of delivery.

FURTHER RESOLVED

The Board of Directors hereby approves that the measurement of overall vehicle length be incorporated into the inspection process and treated for purposes of the standards program as a Type "B" deviation.

PLEASE NOTE: It is up to the discretion of the member company to decide how best to provide length information for the consumer, whether it is in inches, feet, or a combination of the two. The member company may also use their discretion in deciding whether to include a metric equivalent. This membership requirement goes into effect January 1, 2021. However, if a member begins to place the length label on their units prior to the effective date, the RV Industry Association inspection staff will be verifying compliance.

RVIA Standards Department – Educational YouTube Videos

The following free online Educational YouTube training videos and webinars can be found on the "RVIACommunications" YouTube channel.

- Plumbing Drain Traps and Trap Arms (9:21)
- Proper Installation of Wet Location J-Boxes (10:21)
- Proper Installation of a Flexible Propane Hose (13:30)
- Grounding of Metal J-Boxes (10:38)
- Electrical Box Sizing (3:50)
- Low Voltage Overcurrent Protection (18:13)
- Cable Protection and Securement (18:02)
- Plumbing Drains: Long and Short Turn Fittings (3:47)
- Electrical Ground Continuity (3:32)
- Plumbing Drains: Sanitary Tee Fittings (3:19)
- Auxiliary Battery Installations (12:58)
- Connections and Terminals in the 12-Volt System (13:02)
- NHTSA Mandatory Reporting Requirements Part 7 (34:46)
- 120-Volt Wire Protection in Storage Areas (5:40)
- Distribution Panelboard Basics (9:50)
- ANSI A119.5 Park Model RV Changes for 2020 (21:00)
- 2021 NFPA 1192 RV Code Changes Training Video (57:38)
- Propane Piping Securement (10:14)
- Bonding of the Propane Piping System (7:07)
- Electrical Ground Continuity (3:32)
- Cross-over Connectors (Molex Connectors) (2:35)
- Introduction to Hi-Pot Testing (5:35)

RVIA Standards Department- Educational Series Documents

The Following Educational Series Documents can be found for free, after logging in, on RVIA.org under "Standards & Regulations" then "Standards Education".

- 120V Connection Buss Bar (5 pages)
- Auxiliary Battery Installations (9 pages)
- Fuel Distribution Systems (14 pages)
- Gas Piping Support and Anchoring (10 pages)
- Grounding continuity NEC 551.55(E) & NEC 552.56(E) (5 pages)
- Installation of Connectors and Terminals in Low Voltage Wiring (18 pages)
- Installation of Smoke Alarms (12 pages)
- Interior Flame Spread Limitations (12 pages)
- Mounting Wall and Ceiling Boxes (4 Pages)
- NFPA 1192 Special Transportation Provisions (15 pages)
- Non Metallic Cable Support NEC 551.47 &551.48 (9 pages)
- Number of conductors in Outlet (15 pages)
- Plumbing Elbows and Cleanouts (18 pages)
- Portable Fire Extinguishers (8 pages)
- Proper use of a Digital Clamp Ohm/Voltmeter (7 pages)
- Protection of Non-Metallic Sheath Cable from Physical Damage (5 pages)
- Protection of Non-Metallic Sheath Cable (19 pages)
- Protection of Slide out 120V and 12V Conductors (8 pages)
- Protection of Slide out Propane Lines (10 pages)
- Range clearance Requirements (16 pages)
- Required NFPA 1192 AND NEC Labels (19 pages)
- Tire & Axle Weight Rating (9 pages)
- Use of GO NO GO gauge to test copper (5 pages)
- Wet Location Junction Box Installation (10 pages)