

**A12.4. Package Batteries, Wet, Filled with Acid; Batteries, Wet, Filled with Alkali; or Batteries, Wet, Non-spillable** as follows:

A12.4.1. Package to prevent a dangerous evolution of heat (e.g., an amount of heat sufficient to be dangerous to packaging or personal safety to include charring of packaging, melting of packaging, scorching of packaging, or other evidence) and:

A12.4.1.1. Completely protect against short circuit with electrically nonconductive material and securely cushion electric storage batteries containing electrolyte acid or alkali corrosive battery fluid within the outer container,

A12.4.1.2. Separate batteries and battery-powered devices in a manner to prevent contact with other batteries or devices with electrically conductive materials,

A12.4.1.3. Place batteries inside an acid or alkali-proof liner (not mandatory for non-spillable batteries), adequately sealed to prevent leakage in the event of a spill, within the outer container as follows:

A12.4.1.4. Pack batteries so that the fill openings or vents, if any, are upward.

A12.4.1.5. Do not pack with other articles unless authorized by a specific packaging paragraph.

A12.4.1.6. However, batteries may be packed with portable searchlights, battery parts, or hydrometers, if properly cushioned and securely packed in a separate container.

A12.4.2. Pack batteries packed without other materials in boxes, drums, or jerricans as follows:

Inner packaging	Outer packaging
Not required	<b>Boxes:</b> wooden (4C1, 4C2, 4D, 4F), fiberboard (4G), or solid plastic (4H2) <b>or</b> <b>Drums:</b> plywood (1D), fiber (1G), or plastic (1H2) <b>or</b> <b>Jerrican:</b> plastic (3H2) <b>Note:</b> All outer packagings must meet PG II performance standards.

A12.4.3. Non-Spillable Batteries. Pack in strong outer packagings. To consider a battery non-spillable, it must withstand without leakage the vibration and pressure differential tests specified in 49 CFR Paragraph 173.159(f). **(T-0)**. Batteries meeting the additional requirement of Special Provision A67 are considered dry, and are not subject to any other requirements of this manual.

A12.4.4. Electrolyte, Acid, or Alkali Corrosive Battery Fluid, Packed with Storage Batteries Wet or Dry. Package as described below.

A12.4.4.1. Package in boxes with glass inner receptacles as follows:

Inner packaging	Outer packaging
Glass receptacles <b>Note:</b> Not over 4.0 L (1 gallon) capacity each.	<b>Boxes:</b> wooden box (4C1, 4C2, 4D, 4F) <b>Note:</b> Maximum quantity is 8.0 L (2 gallons) each. Cushion and separate the inside containers from batteries by a strong solid wooden partition.

A12.4.4.2. Package in boxes with plastic inner bottles as follows:

Inner packaging	Outer packaging
Plastic bottles <b>Note:</b> Not over 1 L (1 quart) capacity each.	<b>Boxes:</b> wooden box (4C1, 4C2, 4D, 4F) <b>Note:</b> Pack no more than 24 bottles, securely separated from storage batteries and filling kits in each package.

A12.4.4.3. Package dry storage batteries or battery charger devices in fiberboard boxes (4G) with inner receptacles containing battery fluid. Ensure complete package conforms to PG III requirements. Pack no more than 12 inner receptacles in one outer box. Maximum authorized gross weight is 34 kg (75 pounds).

A12.4.5. Batteries Packed without other materials (Domestic Shipments Only). The following nonspecification packagings are authorized for domestic only shipments of batteries packed without other materials:

A12.4.5.1. One to three batteries of not over 11.3 kg (25 pounds) each, packed in an outside box. Gross weight may not exceed 34 kg (75 pounds).

A12.4.5.2. A maximum of four batteries not over 7 kg (15 pounds) each may be packed in strong outside fiberboard or wooden boxes. Cushion and pack to prevent short circuits. Gross weight may not be over 30 kg (65 pounds).

A12.4.5.3. A maximum of five batteries not over 4.5 kg (10 pounds) each may be packed in an outside fiberboard or wooden box. Securely cushion and pack to prevent short circuits. Gross weight may not exceed 30 kg (65 pounds).

A12.4.5.4. Single batteries not over 34 kg (75 pounds) each, packed in five-sided slipcovers or in completely closed fiberboard boxes. Ensure slipcovers and boxes are of single or double-faced corrugated fiberboard of at least 91 kg (200 pounds) test strength. Fit the slipcover or the fiberboard box snugly and provide an inside top clearance of at least 1.3 cm (one-half inch) above battery terminals and filler caps with reinforcements in place. When assembled for shipment, the bottom edges of the slipcover may extend to the base of the battery and may not expose more than 25.4 mm (1 inch). Ensure the completed package (battery and box or slipcover) is capable of withstanding a top-to-bottom compression test without damage to the battery terminals, cell covers, or filler caps.

A12.4.5.5. Single batteries exceeding 34 kg (75 pounds) each may be packed in completely closed fiberboard boxes. Use double-wall corrugated fiberboard boxes of at least 181 kg (400 pounds) test, or solid fiberboard testing at least 181 kg (400 pounds). A box may have holes in its ends provided that the handholes will not materially weaken the box. Sides and ends of the box may not be less than 1.3 cm (0.5 inch); and use excelsior pads, corrugated fiberboard, or other suitable cushioning material. Protect the bottom of the battery by a minimum of one excelsior or double-wall corrugated fiberboard pad. Protect the top of the battery by a wood frame, corrugated trays or scored sheets of corrugated fiberboard having minimum test of 91 kg (200 pounds), or other equally effective cushioning material. Ensure the top protection bears evenly on connectors and/or edges of the battery cover to facilitate stacking of batteries. No more than one battery may be placed in one box. The maximum authorized gross weight is 91 kg (200 pounds).

A12.4.5.6. Large electric storage batteries protected against short circuit and firmly secured to skids or pallets capable of withstanding the shocks normally incident to transportation. The height of the completed unit may not be greater than 1.5 times the width of the skid or pallet. Ensure the unit is capable of withstanding, without damage, a superimposed weight equal to two times the weight of the unit. If the weight of the unit is greater than 907 kg (2,000 pounds), ensure it withstands, without damage, a superimposed weight of 1814 kg (4,000 pounds). Do not rely on battery terminals to support any part of the superimposed weight and ensure terminals do not short out if an electrically conductive material is placed in direct contact with them. Mark and label each skid or pallet as required by Attachment 14 and Attachment 15.