§ 229.31 Main reservoir tests.

(a) Before it is placed in service, each main reservoir other than an aluminum reservoir shall be subjected to a pneumatic or hydrostatic pressure of at least 25 percent more than the maximum working pressure fixed by the chief mechanical officer. The test date, place, and pressure shall be recorded on Form FRA F 6180–49A, block eighteen. Except as provided in paragraph (c) of this section, at intervals that do not exceed 736 calendar days, each main reservoir shall be subjected to a hydrostatic pressure of at least 25 percent more than the maximum working pressure fixed by the chief mechanical officer. The test date, place, and pressure shall be recorded on Form FRA F 6180–49A, and the person performing the test and that person’s supervisor shall sign the form.

(b) Except as provided in paragraph (c) of this section, each main reservoir other than an aluminum reservoir shall be hammer tested over its entire surface while the reservoir is empty at intervals that do not exceed 736 calendar days. The test date and place shall be recorded on Form FRA F 6180–49A, and the person performing the test and that person’s supervisor shall sign the form.

(c) Each welded main reservoir originally constructed to withstand at least five times the maximum working pressure fixed by the chief mechanical officer may be drilled over its entire surface with telltale holes that are three-sixteenths of an inch in diameter. The holes shall be spaced not more than 12 inches apart, measured both longitudinally and circumferentially, and drilled from the outer surface to an extreme depth determined by the formula—

\[
D = \left(\frac{.6PR}{S} - 0.6P\right)
\]

Where:

- \(D\) = extreme depth of telltale holes in inches but in no case less than one-sixteenth inch;
- \(P\) = certified working pressure in pounds per square inch;
- \(S\) = one-fifth of the minimum specified tensile strength of the material in pounds per square inch; and
- \(R\) = inside radius of the reservoir in inches.

One row of holes shall be drilled lengthwise of the reservoir on a line intersecting the drain opening. A reservoir so drilled does not have to meet the requirements of paragraphs (a) and (b) of this section, except the requirement for a pneumatic or hydrostatic test before it is placed in use. Whenever any such telltale hole shall have penetrated the interior of any reservoir, the reservoir shall be permanently withdrawn from service. A reservoir now in use may be drilled in lieu of the tests provided for by paragraphs...
§ 229.46 Brakes: general.

(a) Before each trip, the railroad shall know the following:

(1) The locomotive brakes and devices for regulating pressures, including but not limited to the automatic and independent brake control systems, operate as intended; and

(2) The water and oil have been drained from the air brake system of all locomotives in the consist.

(b) A locomotive with an inoperative or ineffective automatic or independent brake control system will be considered to be operating as intended.