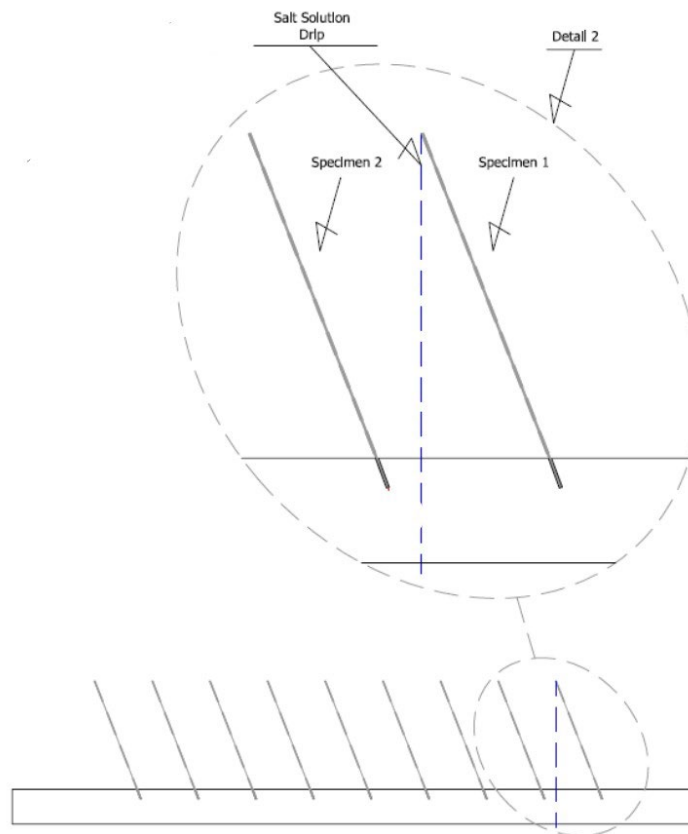


Bulletin: ASTM B117 – ISO 9227 – JIS Z2371

The Salt Spray test is a comparative test, your test result must be compatible with that of your supplier or customer. It is very important that the chamber design must meet all the requirements mentioned in ASTM B117 (FIG. X1.1 Typical Salt Spray Cabinet page 8).

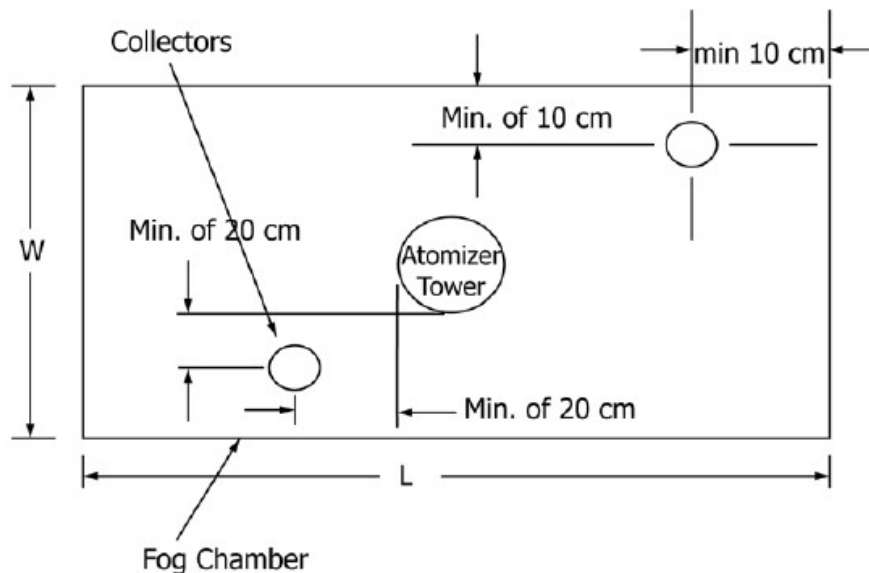
- 1) Construction material of the internal cabinet must be **inert**, that is, in a way that does not have distortions in the final test result. It is very important that there is **no metal** inside the test cabinet, such as heaters, rack for sample, etc. (ASTM B117, item 4.4 page)
- 2) During the test, drops accumulate on the ceiling, the "V" design and completely smooth, ensures that drops stick to the water seal of the lid. No dripping of the samples and possible distortions in the results. (ASTM B117, item 4.2 page 2)
- 3) Support of specimens (test panels) shall be supported or suspended with the surface of interest at an angle between 15° and 30° from the vertical. It is recommended:
 - The specimens shall not contact each other or any metallic material.
 - Each specimen shall be placed to permit unencumbered exposure to the fog.
 - Salt solution from one specimen shall not drip on any other specimen.



4) Corrosive agents and test solution must meet impurity limits / Fog Collect:

The salt solution shall be prepared by dissolving 5 parts by mass of sodium chloride (NaCl) in 95 parts of water. The pH of the salt solution shall be such that when atomized at 35 °C (95 °F) the collected solution will be in the pH range from 6.5 to 7.2.

- **Water quality specification:** ASTM D1193 Type IV
- Electrical conductivity at 25°C.= 5µS/cm
- Electrical resistivity at 25°C. = 0.2MΩ.cm,
- pH 5.0 to 8.0,
- Sodium µg/L (max) = 50,
- Chloride µg/L (max) = 50.
- **Salt specification (Sodium Chloride):** We recommend our EQCORRO_SALT.
- The salt used shall be sodium chloride with not more than 0.3 % by mass of total impurities
- Halides (Bromide, Fluoride, and Iodide) other than Chloride shall constitute less than 0.1 % by mass of the salt content.
- Copper content shall be less than 0.3 ppm by mass.
- Sodium chloride that has had anti-caking agents added shall not be used because such agents may act as corrosion inhibitors.
- **To measure the concentration of salt in the collected solution:** You must use a density meter and a thermometer. Special fog collectors must be added at strategic positions to collect and measure the atomized salt concentration of the solution. Below are suggestions for positioning fog traps per ASTM B117.



- Place at least two clean **fog collectors** as shown in the figure above within the exposure zone so that no drops of solution are collected from test samples or any other source. Position the collectors close to the specimens, one closer to any nozzle and the other further away from all nozzles. A typical arrangement is shown in the figure above. The fog should be such that for every 80

cm² (12.4 in.²) of horizontal collection area, there will be **1.0 mL to 2.0 mL** of solution collected per hour based on an **average continuous run of at least 16 h**

5) Compressed air Quality:

- Free of grease, oil, and dirt.
- Compressed air should be maintained at a sufficient pressure at the base of the Air Bubble Tower (Humidifying tower) to meet the suggested pressures of at the top of the Air Saturator Tower.
- The compressed air supply to the atomizing nozzle(s) must be conditioned by introducing it to the bottom of a Bubble Tower or Humidifying tower with heated water. The water level must be automatically maintained to ensure proper humidification. It is common practice to maintain the temperature in this tower between 46 °C and 49 °C (114 °F and 121 °F) to compensate for the cooling effect of expansion to atmosphere pressure during the atomization process (venturi principle). **Note: No peristaltic pump.**

6) The atomization system (fog) must be designed not to create drops of solution, but a fog of small particles (venturi principle) of solution evenly distributed. Drops are undesirable as they can distort the final test result. A dispersion tower and a deflector (cone) are recommended so that possible drops do not reach the samples, guaranteeing an optimal final test result. Awaiting a complete understanding of the effects of air pressure, and so on, it is important that the selected nozzle produces the condition when operated at the selected air pressure. Atomizing nozzles for chamber volumes up to 2,000 liters we recommend in the center of the test cabinet and can also be directed vertically upwards through a fog dispersion tower, this ensures uniform fog collection.

7) Chamber Temperature: The exposure zone of the salt spray chamber shall be maintained at 35 °C +/- 2 °C (95 °F +/- 3 °F). Each set point and its tolerance represent an operational control point for equilibrium conditions at a single location in the cabinet which may **not necessarily represent the uniformity** of conditions throughout the cabinet.

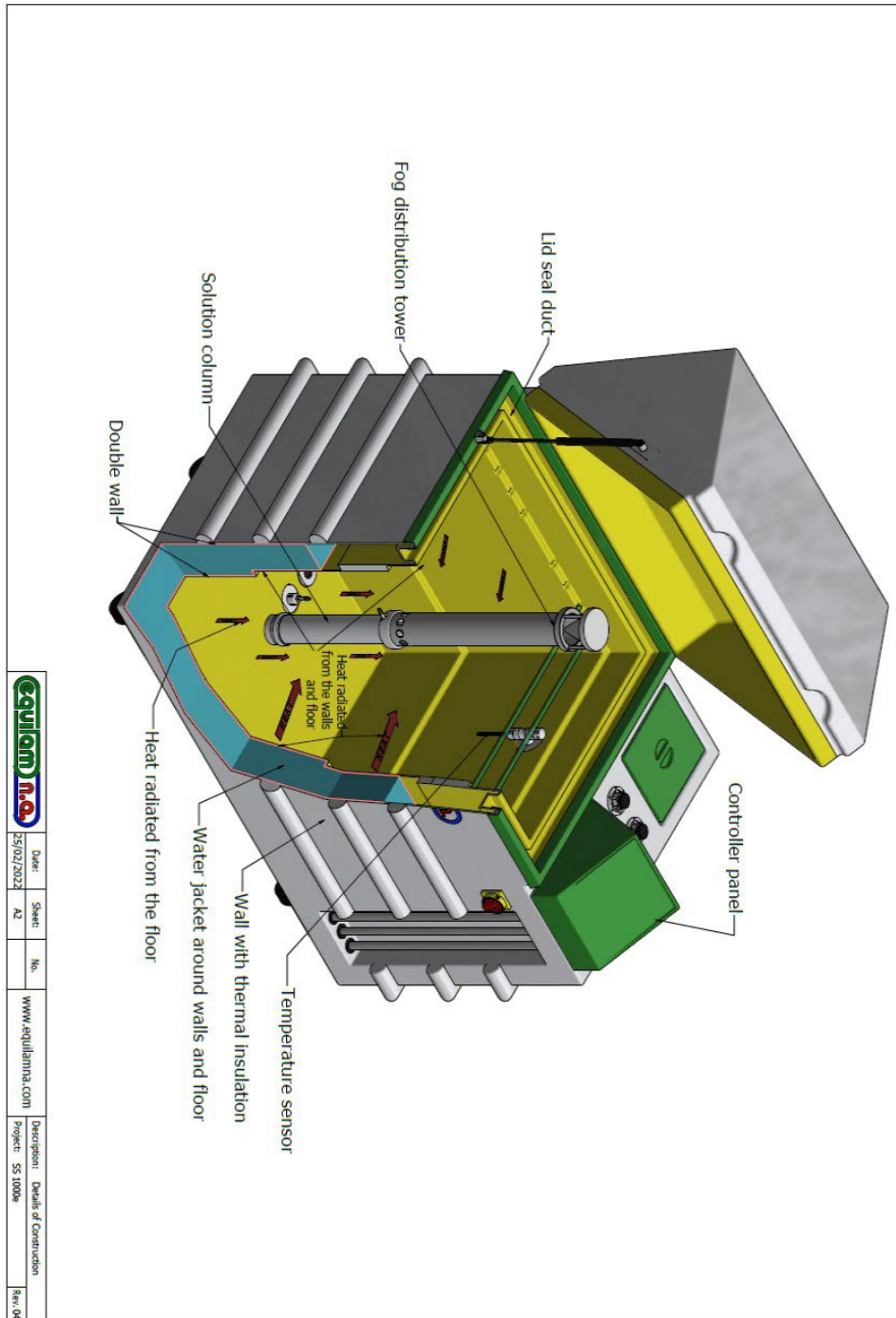
The recorded temperature must be obtained with the salt spray chamber closed to avoid a false low reading due to the wet bulb effect when the chamber is open.

Maintaining the temperature inside the salt chamber can be performed by several methods. This is generally desirable to control ambient temperature of the salt fog chamber and keep it as stable as possible. This can be done by placing the device in a constant temperature room but can also be achieved by surrounding the basic chamber of a jacket containing water or controlled temperature air.

Note: Any source of thermal radiation inside the test cabinet must be avoided, metallic and non-metallic. Depending on the exposure zone, the samples may receive greater intensity of thermal irradiation, which may exceed the temperature limits and distort the results.

8) EQUILAM North America Series SSe and SS chamber design, meeting all ASTM B117, ISO 9227 and JIS Z2371 requirements. Built in fiberglass with special resin of high chemical and temperature resistance (Inert Material - ASTM B117), externally and internally. Indirect heating of the internal cabinet through the water jacket (ASTM B117), ensuring great temperature homogeneity of the test cabinet.

US PATENT # 10371623



SSe Serie

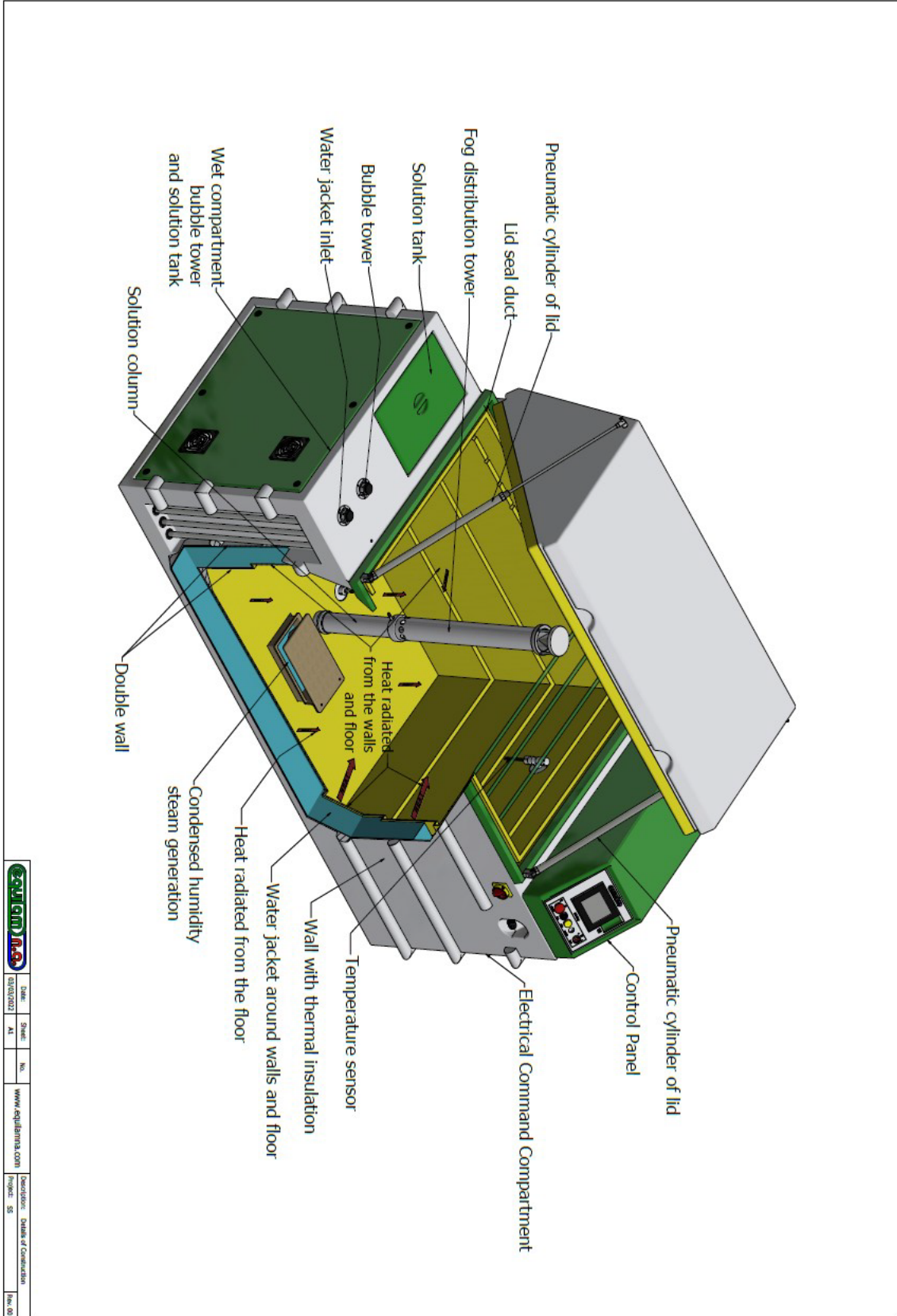


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