

Salt mist test

Results evaluation standard

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1 Document history

Issue	Change	Author	Date
0A	Introduces document	Justin Ruskey / Herjan van Viegen	10/01/2020
0B	Updated the document with acceptance criteria	Madourai Witvers	03/12/2020
0C	Updated the document with new photos	Madourai Witvers	04/12/2020
0D	Updated the document as per Herjan's feedback	Madourai Witvers	09/12/2020
0E	Document revised	Paul Chapman	10/12/2020

2. Test methodology

Technetix qualifies its housings using US test method ASTM B117 “Standard practice for operating salt spray (fog) apparatus” and/or European test method ‘test Kb: salt mist, cyclic’ BS EN IEC 60068-2-52:2018.

The typical duration of test exposure using test method ASTM B117 is 1,000 hrs, although a different exposure time may be specified.

The European test method describes eight ‘test methods’ each of different duration and severity. Technetix typically uses test method five, 28 days duration. Again, other ‘methods’ may be specified. On completion of the exposure process the test sample will be scrubbed clean of salt and debris and examined against the test criteria listed in this standard.

Regardless of the method or duration of test, *all* tested items will be evaluated using the same gradings as specified in this document.

3. Requirements (post salt mist exposure test)

- The housing shall be adequately protected to resist corrosion.
- Corrosion shall not breach the element housing.

Each sample is rated for surface survival using the following gradings:

1. No noticeable alteration or pitting of surface - (pass).
2. Some alteration or pitting of surface exists - (pass).
3. Majority of surface is pitted and majority of protective coating is adversely affected - is affecting the base metal - (fail).

4 Survival levels

4.1 Grade 1: no noticeable alteration or pitting of surface, all seals intact, electrical performance within specification.

Grading Criteria

- Coating condition: no degradation/alteration of coating.

Coating is defined as: paint on the housing.

- Surface pitting: no pitting observed on the surfaces.

Surface pitting is defined as: pitting on the housing metal body.

- Water/moisture intrusion: none.

No moisture inside the housing.

- Electrical performance: no change or only small change on electrical performance as compared to pretest result. Device still meets electrical specification.

Product should meet its pre-test electrical performance.

If the test sample meets all the above criteria it shall be considered a Grade 1 PASS.

Examples of Grade 1 test samples



4.2 Grade 2: some alteration or pitting of surface exist.

Examples of Grade 2 test samples

Grading Criteria

- Coating condition: Some degradation, but coating not completely gone.

Some paint degradation is allowed, but not all paint completely gone.

- Surface pitting: minor pitting observed on the surfaces. Quantify the number of pitting, measure pitting depths and compare worst-case to housing's thickness.

Start of pitting (an indentation on the surface) in some areas. Less than 30% of surface area pitting is acceptable.

- Water/moisture intrusion: none.

No moisture inside the housing.

- Electrical performance: no change or only a small change to electrical performance when compared to pretest result. Device still meets electrical specification.

Product should meet its pre-test electrical performance.

If the test sample meets all the above criteria it shall be considered a Grade 2 PASS.



4.3 Grade 3: majority of surface is pitted and the majority of protective coating is adversely affected.

Examples of Grade 3 test sample

Grading Criteria

- Coating condition: coating is seriously depleted or completely gone.

The paint has come off the surface.

- Surface pitting: significant pitting observed on the surfaces. Surfaces can be potentially breached over time.

Pitting is in many areas of the housing covering more than 30% of surface.

- Water/moisture Intrusion: inside of device contaminated.

Water or moisture found inside the housing.
Environmental seals beached.

- Electrical Performance: significant change on electrical performance compared with pre-test results. Device does not meet electrical specification.



If the test sample meets any of the above criteria it shall be considered a Grade 3 FAILURE.