

NEMA Rated Enclosures and Listed Type Rated Enclosures are not the same

There are fundamental differences between an enclosure that is “NEMA Rated” by a company solely; without third-party evaluation and one that is “Listed” to a Type Rating by a National Regulatory Testing Lab **for** a company.

A National Regulatory Testing Lab, such as UL or Intertek, are independent, third party labs that test enclosures, under controlled conditions, to the environmental “Type” rating given, such as a Type 4 or Type 3R.

The NEMA 250 Standard, is a set of guidelines that enclosure manufacturers follow to properly separate enclosures into their respective Type classes for marketing. The NEMA Standard absolves itself from liability, leaving the manufacturer to adhere to the guidelines and the consumer to trust these guidelines have been complied with.

In the Notice and Disclaimer, the Standard states the following; **“NEMA has no power, nor does it undertake to police or enforce compliance...NEMA does not certify, test, or inspect, products, designs...any certification or other statement of compliance ...is solely the responsibility of the certifier or maker of the statement.”**

- NEMA compliance to a Type rating is a self-declaration by an individual company
- NEMA lacks third party lab testing
- NEMA lacks third party oversight compliance
- Any company can declare their enclosures meet a NEMA type rating and all enclosure manufacturers rate their enclosures with a NEMA Type rating

A National Regulatory Testing Lab uses the UL 50/50E and 508A Standard, as applicable, as test criteria, they test, certify, audit and enforce compliance for an enclosure prior to, during and after testing and certification. Conversely, the UL Standards for enclosures and industrial control panels are not guidelines; they are criteria that enclosures are evaluated against and either pass or fail testing. The results are not subject to speculation or abstractions.

- Listed enclosures are tested by a third-party testing lab
- Listed enclosures have independent testing data reports
- Listed enclosures have third-party, ongoing, oversight
- Listed enclosures are marked with a NRTL logo and Type Rating with a File number

When is a NRTL Listed enclosure needed?

The intent and application for the use of the enclosure and the requirements that it must meet then become of import to the consumer.

- Is this enclosure going to be used in an area where it will require a formal inspection by a Regulatory authority, such as an AHJ (Authority having jurisdiction)? Listed
- Will the enclosure require formal Listing to pass initial inspection? Listed
- Does the enclosure simply need to perform under certain environmental conditions? Either or
- Do Codes not require a Listed enclosure? Either or

Listed enclosures carry the higher value than unlisted

As with almost any consumer product, independent testing from a third party lab, raises costs on a product. Laboratory testing costs are substantial, both initially and the ongoing, maintenance costs, from frequent, product compliance audits; the cost for these audits are then billed to the company; the more products the company sells that have issued, Listing numbers, the more frequent the product audits, resulting in higher maintenance fees. This raises costs for enclosure manufacturers to do business, and this cost is always passed on to the consumer.

Lack of education and confusion in terminology between NEMA Type 4 and a NRTL Listed Type 4, can cause the consumer to purchase the wrong enclosure for their needs; almost always choosing the less expensive, enclosure option, with the same environmental rating but often times not meeting the required codes for the intended use of the enclosure, when unlisted.

“NEMA TYPE 4” has become a confusing term in the Industry at large

The term “NEMA” amongst code writers, enforcers, AHJ’s and electrical inspectors is synonymous, colloquially, with “Listed” Type 4. When a code inspector calls for a “NEMA” Type 4 enclosure, then also requiring that this be “Listed” by a NRTL, while this is technically conflicting and inaccurate, the code is clear that it must be a listed enclosure. The NEMA 250 Standard is never used by a NRTL as it is a set of guidelines; instead, UL 50/50E and UL 508 are the standards used to declare a Type rating. Building and Safety Inspectors often times have little to no training as to what NEMA or UL 50 is or states; they merely look for the “Type 4” designation on a Listed Label during inspection. When in doubt about what they are looking at, they call for a field inspection by the NRTL to provide verification that the enclosure they are looking at is in fact a Listed enclosure per the lab report.

The consumer sees that enclosure manufacturers market and sell enclosures as NEMA Rated Type XX, but are unaware that this enclosure, will not pass an AHJ inspection, if the code calls for the enclosure to be listed by a NRTL.

Further complicating the issue is that the original purchaser of the enclosure may not know where the end user of the enclosure will be.

When in doubt, purchase a Listed enclosure

Enclosure manufacturers are responding to the requirement for Listed enclosures as many local, regulatory codes, continue to increase the types of enclosures being installed in certain applications, especially those that house police and firefighter radio equipment.

It can be extremely frustrating and costly for the consumer to purchase an enclosure marketed as “NEMA Type 4”, only to find out that it will not pass an inspection after integration, install, permits etc., have been completed and obtained, because it is lacking the necessary marking. Costs for enclosure returns, reintegration, deadlines missed, can far outweigh the extra cost for the initial purchase of a listed enclosure.