# 2019 GUIDE TO NORTH AMERICAN
# PRODUCT TESTING & CERTIFICATION

intertek.com/ETL

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# INTRODUCTION

You've designed your equipment in line with the relevant Standards governing your product. Now you have a responsibility (in many cases a mandatory requirement) to get your product tested and certified ("Listed") by an independent body recognized for its competency in electrical or mechanical safety. This allows you to sell your product in the markets you wish to enter, and lets retailers feel comfortable about stocking it on their shelves.

This white paper provides information, insights, and a collection of frequently asked questions about product testing and certification – and provides some useful hints on how to optimize the process and speed your time to market.

Intertek has been helping manufacturers meet national and international standard requirements for more than a century. Our comprehensive services include design review, product testing, and certification. We help our clients cut through incidentals to empower them to make the best choices about their listing and approval process – choices that will ultimately drive your product to market.

# SELLING ELECTRICAL OR ELECTRONIC PRODUCTS IN NORTH AMERICA

**OSHA and the NRTL Program**

**U.S. Department of Labor: Occupational Safety & Health Administration (OSHA)**
OSHA Safety Regulations[i] are enforced by U.S. law and contain requirements for "approval" (i.e., testing and certification) of certain products by a Nationally Recognized Testing Laboratory (NRTL). These requirements help protect workers by ensuring products are designed for safe use in the workplace. An NRTL generally partners directly with the manufacturer to test and certify equipment and components.

*Q: What is an NRTL? What is the significance of OSHA recognition?*

A:  In North America manufacturers must depend on an independent third-party organization to provide safety certification for their electrical components. A Nationally Recognized Testing Laboratory (NRTL) is recognized by OSHA and functions to provide independent evaluation, testing, and certification of any electrically-operated or gas- and oil-fired product based on product safety standards developed by U.S. consensus standards organizations such as the American National Standards Institute (ANSI) and Underwriters Laboratories (UL).

An NRTL has demonstrated compliance to the legal requirements in 29 CFR 1910.7. These requirements relate to the procedures in place for testing and certifying specific types of products for workplace safety, including capability, control programs, complete independence, and reporting and complaint handling. This means that an organization must maintain the necessary capabilities – both as a product safety testing laboratory and as a product certification body – in order to receive OSHA recognition as an NRTL.

The first NRTL was identified in the early 1970s but additional laboratories were not recognized until 1988, when a set of criteria was created, whereby laboratories could demonstrate their suitability to be recognized as an NRTL. Today, manufacturers have a choice when it comes to selecting a third-party NRTL to best meet their needs.

*Q: What other requirements does OSHA regulate?*

A:  OSHA Safety Regulations contain general requirements for workplace safety in the United States. Operations subject to OSHA's requirements must demonstrate
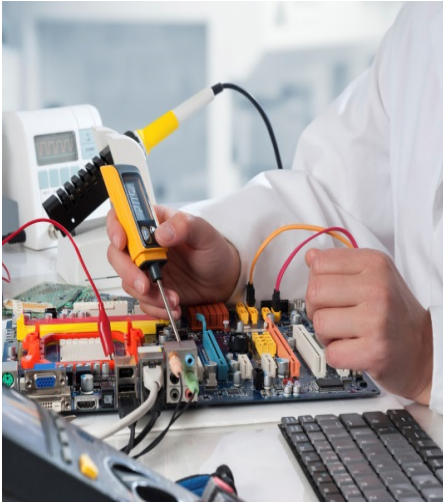
compliance to the provisions of applicable Safety Standards. Many of these requirements pertain to equipment for which OSHA does not require certification by an NRTL.[ii]

### Q: What process does OSHA follow in recognizing an NRTL?

A: When an organization submits its application materials, OSHA staff conducts a thorough review to verify completeness and adequacy. For applications from foreign-based organizations, The U.S. Department of Commerce must consider the "reciprocity" of the foreign government. When the NRTL Program staff determines that the application is complete and adequate, they perform an in-depth on-site review of the applicant's organization, programs, and facilities. The staff then prepares a report and recommendation on the review.[iii]

Based mainly on the application review and on-site review report, OSHA makes a "preliminary finding" on the application. The Agency publishes a notice of this finding in the Federal Register to allow for public comment. Following a 30-day comment period, OSHA publishes a second notice of its final decision and response to any comments received, making the recognition official for successful applicants (or denying the recognition for unsuccessful applicants). After publication of the decision, the Assistant Secretary of Labor for Occupational Safety and Health (the head of OSHA) sends a formal notification to the applicant. This notification sets forth the specific scope and other terms of the recognition, which remains in effect for a five-year period. At the end of the initial period, the NRTL must apply for renewal of recognition.

### Q: What is an NRTL's scope of recognition?

A: The specific safety test standards for which an NRTL applies for recognition, and that OSHA approves, define only one area of its scope of recognition. The other areas are the specific testing locations (sites) and the supplemental programs that OSHA has recognized for the NRTL.[iv]

After the initial recognition, an NRTL may seek to expand its scope of recognition by requesting recognition for additional test standards, for example. An NRTL is only recognized by OSHA Safety Regulations for specific products within its scope of recognition.

### Q: What does it mean when OSHA "accepts" a product certified by an NRTL?

A: OSHA's acceptance of a product certified by an NRTL generally occurs during the workplace inspection, performed by OSHA compliance officers. However, this acceptance does not mean the product is "OSHA-approved." It means that the NRTL has tested and certified the product to demonstrate conformance to specific product

safety test standard(s). It also means the employer has complied with (at least) one requirement in OSHA Safety Regulations.

*Q: What product safety test standards can an NRTL use in certifying products?*

A:  An NRTL must use "appropriate" product safety test standards in certifying products for workplace safety.[v] These test standards contain technical requirements that products must meet for workplace safety. OSHA does not develop these test standards but has defined the specific requirements of an appropriate test standard within its regulated scope.

Many of these standards are published by organizations such as the International Electrotechnical Commission (IEC), Underwriters Laboratories (UL), the National Fire Protection Association (NFPA), the Institute of Electrical and Electronics Engineers (IEEE), and ASTM International (American Society for Testing & Materials). The product safety test standards recognized for an NRTL are consistent with OSHA Safety Regulations, which are U.S. law.

*Q: Are all OSHA-approved NRTLs equal in ability?*

A: Given that each NRTL has met the same requirements for recognition, OSHA considers all NRTLs that have been recognized for the same product safety test standard to be equivalent in their capability to certify to that standard. For example, any NRTL recognized for ANSI Z21.17, a test standard for gas unit heaters, can certify such units for a manufacturer. However, even if recognized for the same test standards, each organization has different abilities depending on its experience, personnel, facilities and equipment, testing methods, and other aspects of its operations. OSHA only recognizes organizations as NRTLs and, under its regulations, cannot dictate how an NRTL operates.[vi]

*Q: How do I know whether an NRTL has certified a product?*

A: Each NRTL designates product conformance to the required product safety test standards using its own unique, registered certification mark(s). Each NRTL must register its certification mark(s). In the U.S., this is done with the US Patent and Trademark Office. Samples of these are Intertek's ETL Listed Mark, or Underwriters Laboratories' UL Mark.

**The ETL Listed Mark.** A product bearing the ETL Listed Mark with the "US" identifier at the 4 o'clock position has been tested and deemed compliant to U.S. product safety standards only. An ETL Listed Mark with a "C" identifier at the 8 o'clock position means the product bearing it complies with Canadian product safety standards only. And an ETL Listed Mark with both "US" and "C" identifiers, at the 4 o'clock and 8 o'clock positions respectively, signifies that the product bearing the mark complies with both U.S. and Canadian product safety standards.

The manufacturer places these marks on those products that the NRTL has certified as meeting the requirements of the test standard. In accordance with OSHA policy,

an NRTL must ensure that its registered certification mark is applied to each unit, or if not feasible, to the smallest package of the product the NRTL certifies.

### Q: Does OSHA accept the "CE" mark or accept equipment certified by foreign testing organizations?

A: The CE mark is unrelated to the requirements for product safety in the U.S. It is a generic mark used in the European Union (EU) to indicate that a manufacturer has declared conformance to EU product safety requirements. In the U.S. OSHA's NRTL requirements dictate that the product must bear the specific mark of an NRTL recognized to test and certify these types of products.

### Q: Can an NRTL use others to do part of the work necessary in testing and certifying products?[vii]

A: OSHA permits an NRTL to use outside parties to perform certain activities involved in testing and evaluating products, provided that the NRTL has met certain criteria. OSHA has broadly grouped these activities into nine "programs" and included the description and criteria for each program in a Federal Register notice, published on March 9, 1995, (60 FR 12980).

The first or basic program stipulates that the NRTL that certifies the product must perform all product testing and evaluation independently. An NRTL's initial recognition will always include this first program. The other eight, called "supplemental programs," involve the NRTL's acceptance of testing and evaluation data or services from outside parties. An NRTL must apply for recognition to use any of the supplemental programs. OSHA will grant the request if the NRTL has met the criteria for the specific program.

OSHA has no authority over whether or not an NRTL accepts the product testing data, certifications or approvals of another NRTL. It is strictly a business decision made by each NRTL to determine if they accept the work output of another – often competing – NRTL.

### Q: Does OSHA subsidize or indemnify NRTLs?

A: NRTLs are private organizations or companies that operate businesses. They are not financially or otherwise supported, subsidized, or indemnified by the Government in their capacity as an NRTL. These organizations maintain the risks and liabilities for their actions when testing and certifying products.

### Q: How does OSHA enforce requirements for NRTL approval?

A: By recognizing a testing laboratory as an NRTL, OSHA is relying on the qualified organization to test and certify the safety of products used in the workplace. OSHA will enforce requirements for these NRTLs by conducting annual audits to verify that the quality of their operations continue to meet requirements for recognition. OSHA

compliance officers will also perform workplace inspections to review specific products and check whether they contain the certification mark of an NRTL.

**Q: Does OSHA have alternatives to NRTL "approval" of products?**

A: OSHA Safety Regulations for electrical equipment[viii] define the word "approved" as acceptable to the Assistant Secretary of Labor for Occupational Safety and Health. In addition, equipment is acceptable under this subpart if it is:

1) Certified by an NRTL
2) Equipment that is inspected by another Federal agency; or by a state, municipal, or local authority[ix]
3) Custom-made equipment[x]

**Q: Do OSHA requirements supersede any code or other requirements imposed by local code authorities?**

A: Employers must comply with OSHA requirements applicable to their operations. These requirements are U.S. law and prevail over any conflict with local (including state) requirements. However, many OSHA requirements and local code requirements are based on the same national consensus standards, which mitigate potential conflicts.

In addition, requirements that local code authorities may impose on products are primarily installation or "field labeling" requirements, whereas OSHA's requirement for NRTL approval primarily affect the manufacturing of products. While an NRTL certifies products for a manufacturer, this certification may also meet requirements of local code authorities, who determine the nature and extent of their acceptance of an NRTL's certification.

**Q: Do state OSHA programs have to accept products certified by an NRTL?**

A: Many states have received approval by OSHA to operate what may be referred to as an Occupational Safety and Health (OSH) or Occupational Health & Safety (OH&S) program in their state. This transfers the responsibility for enforcing OSHA's requirements from the Federal Government to the individual state. Such states[xi] must adopt standards that are at least as effective as the Federal standards. While many do adopt Federal standards verbatim, a number have what they consider to be more effective standards. However, OSHA reviews such additional requirements to determine that there is a compelling local interest for them and that they do not pose an unnecessary burden on interstate commerce.

For workplaces under its jurisdiction, a state OSH or OH&S program must accept products properly certified by an NRTL, where the state standards are the same as Federal standards. If a state were to adopt its own NRTL program, the recognition it grants to its NRTLs would only apply within that state.

OSHA's approval of a state OSH program imposes no direct obligation on the code enforcement requirements and efforts of local authorities in the state. Local authorities, whether or not in a State-Plan State, determine the nature and extent of their acceptance of NRTL certifications for their code enforcement efforts.

# CHOOSING AN NRTL

*Q: Where can I view the current list of NRTLs?*

www.osha.gov/dts/otpca/nrtl/index.html

*Q: How do I choose which NRTL to use?*

A: When choosing a testing and certification partner, be sure to verify the scope of their accreditation at the above URL to ensure they are accredited for the standard applicable to your product. Additionally, make a list of your key purchasing drivers and use this as your guide. Compare what you are looking for with the services that each NRTL provides.

While keeping production costs down is vital, the companies offering the cheapest rates aren't necessarily the best value. In many cases, the following benefits offer far more value than low costs alone.

- **Responsiveness** – fast, quality service that improves your time to market

- **Cost-Effective Solutions** - delivering competitive and better-priced alternatives without sacrifice to quality

- **Product Portfolio** – a wide range of certification/approval marks

- **Service Portfolio** – key areas of industry or product expertise

- **Geographic Access** – certifications/approvals that yield maximum market access

- **Reputation** – respect and recognition for follow through by the market

- **Local Service Offerings** – assistance at the global as well as local manufacturing levels

**DID YOU KNOW…**

There are currently 19 organizations recognized as NRTLs by OSHA.

Not all are approved to test all types of products or to certify to all standards. The list of "Recognized Testing Standards" as well as the list of "Recognized Testing Sites" may play a role in deciding which NRTL to choose for your project.

# PRODUCT MARKING

*Q: What does a safety mark tell me?*

A: Safety marks such as ETL, UL, and CSA signify that the product has been tested to and found in compliance with national safety standards by a qualified, independent testing laboratory. The presence of a safety mark also means the product is "Listed" in the directory of the laboratory that verified the product's compliance, and it is part of an on-going, follow-up program that ensures the product's continued compliance during manufacturing.

*Q: What is the difference between the UL, CSA, and ETL Listed Marks?*

A: All of these marks demonstrate the product bearing it has met the requirements of widely accepted product safety standards, as determined through the independent testing of a Nationally Recognized Testing Laboratory (NRTL). And, as part of that testing regimen, the product manufacturer has agreed to periodic follow-up inspections to verify continued compliance. The only real differences between the Marks are in the service, and services, of the testing laboratory behind them.

*Q: Aren't manufacturers required to use UL for their compliance testing in the U.S.? Isn't this mandated by the standards themselves?*

A: The simple answer to both questions is "no." In fact, this misconception has misled many manufacturers to believe that they don't have a choice in their third-party testing partner. To satisfy the prerequisite of having your products tested by an independent organization, the true legal requirement is that the laboratory which performs the testing be a Nationally Recognized Testing Laboratory (NRTL) recognized by OSHA.

Intertek is an NRTL and is recognized worldwide as a competent testing, inspection, and certification organization, and the ETL Listed Mark serves as proof of product compliance with U.S. standards. We test to UL standards, among others, and our experts sit on many committees involved with the development of industry standards.

*Q: Who looks for safety marks?*

A: In addition to product vendors, safety-minded facilities managers, and purchasing agents who specify safety certified products, a variety of people and/or organizations expect to see safety certification marks on products. This includes city code officials, OSHA officials, and electrical inspectors who adhere to the National Electric Code (NEC) in the U.S. or Canadian Electrical Code (CEC) in Canada. Given that jurisdictional authority expectations and requirements vary from city to city and
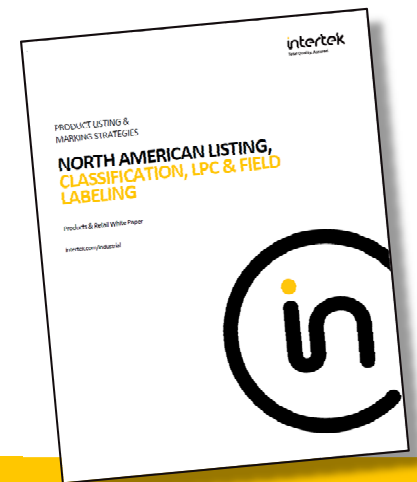
**Product Marking Strategies**

Intertek can help companies navigate through the complexities of listing, labelling, and other product marking strategies. Download our paper at www.intertek.com/products-retail/product-listing-marking-strategies for more information.

region to region, a nationally recognized safety mark is beneficial to manufacturers and facilities throughout North America.

### Q: What does the ETL Listed Mark mean when displayed on my product?

A: In short, the ETL Listed Mark indicates that your product has been tested by Intertek, found in compliance with accepted national standards, and meets the requirements for sale or distribution. To your distributors, retailers, and customers, the ETL Mark is assurance that the product is compliant with safety standards, having been tested and certified by a third-party organization.

### Q: Will retailers accept my product if it bears the ETL Listed Mark?

A: Yes. Since the ETL Listed Mark is an accepted and recognized demonstration of product compliance, and Intertek is recognized as an NRTL, there is no reason why retailers should not accept products bearing the ETL Listed Mark. Any indication otherwise by an individual retailer or distributor likely stems from misinformation in the marketplace –the same misinformation that has led some manufacturers to believe they don't have a choice in their third-party testing organization. Intertek has taken a leadership role in educating the industry on the legal requirements behind regulatory compliance, and we continue to make great strides in helping those manufacturers and retailers who remain confused to better understand their true responsibilities to the marketplace and the competitive advantages we offer.

### Q: What should I tell my clients, distributors or contractors who aren't familiar with the ETL Listed Mark?

A: There is no standard formula for better acquainting clients and customers with the ETL Listed Mark. Depending on the background, circumstances, and other details of a given situation, the correct approach will be unique from one instance to another. Some clients' concerns can be relieved by simply showing them a list of the other respected products bearing the ETL Listed Mark (available in our Directory of Listed Products at www.intertek.com/ETLdirectory).

Others may erroneously believe that the UL Mark is the only acceptable demonstration of product compliance and may require a more thorough explanation of the true legal requirements behind third party product safety testing. It is important to listen closely to your client's issues and provide them with real answers to their concerns. Inform them about the NRTL program. Explain to them how our Product Safety Certification Program includes the same testing, listing, labeling, and follow-up inspection services as UL, and that we're accredited by the same organizations, agencies, and regulatory bodies. But perhaps most importantly, stress to them the ways in which Intertek is making conformity assessment a more flexible and accommodating process – so that they no longer see product safety testing as

strictly an obligation, but as a process that can add value to their product development cycle(s) and help speed them to market.

### Q: What products bear the ETL Listed Mark?

A: Intertek provides a broad range of electrical, electronic, gas and oil-fired product safety testing and certification services for companies spanning multiple industries, markets, and applications. As such, the products bearing our ETL Listed Mark run the gamut from HVAC equipment to medical devices; automotive products; industrial machinery; life safety products; telecom; IT; wireless devices, hazardous locations equipment, and more. For a comprehensive look at which products bear our mark (over 85,000 listed products), we invite you to look at our Directory of Listed Products at www.intertek.com/ETLdirectory.

### Q: Do local inspectors know the ETL Listed Mark?

A: Yes. The ETL Listed Mark is recognized by local inspectors and Authorities Having Jurisdiction (AHJs) throughout North America, and also in many areas of South America and other countries around the world. As Intertek is an NRTL recognized by OSHA, the ETL Listed Mark is an accepted alternative to UL and, as such, inspectors and AHJs recognize, acknowledge, and accept the mark as proof of product compliance.

### Q: What should I do if an AHJ rejects my ETL Listed product?

A: As much as we've accomplished the past 20 years in working with electrical inspectors, fire inspectors, building code officials and other AHJs across North America, there are still questions from time-to-time regarding the acceptance of the ETL Listed Mark.

*Three key things to remember if an AHJ questions your product are:*

1. Intertek is an OSHA-recognized NRTL and therefore entitled by the Federal Government to test and certify products within its scope of accreditation.
2. ETL Listed products fulfill the requirements of the National Electrical Code (NEC) or Canadian Electrical Code (CEC).
3. State and local governments cannot set criteria that contradict Federal criteria in areas subject to Federal regulation, such as workplace safety.

Intertek will vigorously defend acceptance of ETL Listed products in every jurisdiction across North America. If you need immediate assistance, please contact our Inspector Hotline at 1-888-DIRLIST (347-5478).

### Q: How do I maintain my Certification?

A: The issuing certification body will conduct random checks on your products to ensure your continued compliance and typically ask to inspect the manufacturing site on an annual, semi-annual, or quarterly basis to monitor the process – depending on the product involved.

Occasionally, the standards that govern full product certification/approval may change or expire, and therefore must be reviewed to ensure compliance with the revised/new standard. This may be as simple as updating paperwork where the technical file is reviewed, but sometimes additional testing is required.

Another variable to continued certification/approval is "critical" (sometimes called *listed*) material or component substitution. If these are provided to the certification body, the substitutions can be checked to ensure that the safety of the product has not been compromised. If the certification body is not notified of such changes, the certification/approval can potentially become invalid and the product *de-listed*.

### Q: Does my product certification help defend my company against product liability concerns?

A: Yes. Should the worst happen and your product unexpectedly malfunction – and accusations of product liability become levied against you – product certification provides compelling evidence that you took due care to produce a reliable product as prescribed by applicable standards. You'll have validation by a recognized expert in the product evaluation field – your independent and accredited testing and certification provider.

### Q: I want to minimize the chances of my product being recalled – can certification help with that?

A: Yes. The certification process for a product is a stringent one. It can help to identify potential issues with a product before it goes on sale, as every aspect of the product is assessed – from its design, to its likely function, and even the clarity and accuracy of the user instructions. Intertek also offers a wide range of performance testing services that can help determine potential failure points early on, as well as

its proprietary Quality & Performance Mark which helps manufacturers *prove* a product's quality, rather than simply promise it.

***Q: The testing and certification process seems very involved. How can I make it shorter and less painful?***

A: Your testing and certification partner will work with you to make the process as efficient as possible – but every product is different, and some certifications simply take longer than others. However there are some common-sense tips to optimize testing and certification:

- Involve your testing and certification partner in the product design phase to help point out potential non-conformities early.  A design review can help save significant time and money in potential re-testing and re-design later on.

- Where possible, "design for compliance" using the latest version of the appropriate product Standard as a guide.

- Submit families of products together to reduce test costs and potential test time.

- Consider scheduling EMC and Environmental testing at the same time as your Safety testing. Your testing and certification partner can help you plan this to reduce time and costs.

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- Check what paperwork the laboratory needs to process your project and compile it as soon as possible. This too can greatly shorten your overall project turnaround and help get products to market faster.

- Work with your testing and certification partner to identify which tests can be done for the greatest number of markets. Learning which test can be combined or how close your product is to meeting requirements for additional markets can also save significant time and money and greatly increase your revenue potential.

# FIELD LABELING VS. LIMITED PRODUCTION CERTIFICATION (LPC)

The above provides an overview of what's involved with Listing a product, but in some cases a different approach is required - involving either a field label or Limited Production Certification (LPC).

Field labeling allows for on-site product compliance evaluation. A variety of circumstances may prompt a field label need.  This method of demonstrating compliance is used for one-of-a-kind, custom equipment or prototype equipment that is not intended to be mass produced. In some cases a product may have not been listed due to error or because the product certification process was not started early enough and an urgent certification is required in time for product installation.

Often, however, all the requirements are properly followed for Listing a product, and then changes in the field null that initial certification.  Per OSHA, *Changes made to a product after NRTL approval will void the NRTL's approval of the product.* "Changes" may involve any "subsequent repair, reconditioning, modification, refurbishing or remanufacturing of the product" that changes the product features or design.[xii]

When an inspector or building official "red tags" an unlabeled or non-compliant product, that product may not be operated until all applicable product safety requirements have been met. Intertek performs field labeling services of unlabeled electrical/gas equipment. In many cases Next Day service can be provided to areas of the U.S. and Canada.

*Q: What is the ETL Field Evaluated Mark?*
A:  The ETL Field Evaluated Mark lets inspectors know that your product complies with nationally accepted standards at the present location of use. Once your equipment is found to be in compliance, the ETL Field Evaluated label will be applied. It will also reflect your unique serial number that is recorded in your report. If you have a question regarding your equipment, your serial number enables us to access your information quickly.

*Q: What about Special Inspections in Canada?*
A: Special Inspections are an equivalent of Field labeling, where the product is evaluated to the Canadian National Standard, SPE_1000.  Intertek offers Next Day Special Inspections to SPE-1000 for Electrical Equipment in Canada. Products found to comply with SPE-1000 are labeled on the spot with the ETL Mark.

*Q: What if my equipment is going into a Hazardous Location?*

A: OSHA currently does not allow field labeling for hazardous area equipment due to potential complications and risk.  In these cases, a Limited Production Certification (LPC) is needed (see below).

Industrial equipment for hazardous locations such as oil & gas environments, grain silos, mining environments or other potentially explosive atmospheres require additional certification.  Requirements vary based on the hazard type, area of installation and other factors. Intertek staff can assist you with Listing requisites and navigation of this complex industry.  Visit www.intertek.com/hazardous-locations.

# LIMITED PRODUCTION CERTIFICATION (LPC)

*Q: What is Limited Production Certification (LPC) and when is it of use?*

A: LPC or Limited Production Certification applies when one or only a few pieces of the equipment are manufactured or produced.  The evaluation is performed at your production location and includes an inspection of the equipment, the components used, the markings, and the associated drawings. Once it has been certified and the ETL LPC label has been attached, your product can be sold anywhere in the United States and Canada. The local inspection body then checks the correct assembly and the correct electrical connection of the equipment.

*Q: What are the Eligibility Criteria for LPCs?*

A: Limited Production Certification may be eligible for use in the following situations:

- The product is unlisted. The quantity of units produced may run from one to several hundred. All production is scheduled within a contiguous (3) month period.
- A limited "market test" run of a product that would normally be mass-produced is planned. All production is scheduled within a contiguous (3) month period.
- A significant modification to a Listed product will be made on a specific number of units.

LPC may not be used where no published or draft standard exists.

*Q:  What are the characteristics of LPCs?*

A: Limited Production Certifications involve:

- Full conformance to recognized standards.
- Evaluation of a representative sample in the laboratory or applicant's facility
- Limited number of units, produced over a defined time period.
- Certification marks as applied by Intertek personnel, or by the manufacturer at the point of final assembly.
- An LPC Report deliverable.

*Q:  What are the surveillance and Labeling procedures?*

A: Manufacturers may be eligible to apply the applicable Intertek certification mark to qualified products under the LPC program in the following situations:

- ISO 9001 Registered Manufacturer.

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- Existing manufacturer under Follow-Up Services (including the Certification Agreement, Initial Factory Assessment and regular Follow-Up audits)
- Existing manufacturer not under Follow-Up Services after a successful Factory Audit is performed.
- One-time labeling by an Intertek engineer (performed at a site other than the point of installation).

# OTHER MARKS

*Q: Are there other product certification marks available – for example for environmental conformity or energy efficiency or performance?*

A: There are dozens of certification/approval marks available. Some of these are product specific – but almost all deal with a notable aspect of the product, such as its safety, energy efficiency or materials composition. Familiarity with some of the Marks available will help you to determine what you require for your product. Here are some examples of the Marks you are likely to see on various products:

**Performance**

Some manufacturers use voluntary Marks to additionally highlight aspects of product performance or quality. This helps further differentiate their products in the marketplace. The tests required for such marks are usually conducted against a baseline of recognized criteria for a product.

**Materials**

Most markets now have in place legislation to minimize the amount of hazardous substances that go into the making of a product. This is to reduce the amount of hazardous material that will end up in landfill at the end of product life, which could contaminate land and potentially pose a hazard to people and animals.

Many certification bodies can measure the levels of hazardous substance in products and certify materials compliance with legislation. Some Schemes offer product Marks, and some offer documentation that can be used for port access and technical files.

**Energy Efficiency**

ENERGY STAR® is a joint program of the U.S. Environmental Protection Agency and the U.S. Department of Energy helping us all save money and protect the environment through energy efficient products and practices.

In 1992 the US Environmental Protection Agency (EPA) introduced ENERGY STAR as a voluntary labeling program designed to identify and promote energy-efficient products to reduce greenhouse gas emissions. Computers and monitors were the first labeled products. Qualified energy efficiency ratings are usually 10% better than enforced mandatory standard limits or certification program limits. The ENERGY STAR label is now on over 50 product categories including major appliances, office equipment, lighting, and home electronics. EPA has also extended the label to cover new homes and commercial and industrial buildings.

# PRODUCT TESTING & CERTIFICATION

Other energy efficiency schemes include Energy Guide for commercial and residential HVAC products, Energy Label for electrical products in the EU, and the ePeat Gold, Silver and Bronze programs for computers and other electronics.

# CERTIFICATION FOR
# CANADA

*Q: How does Certification work in Canada?*

Product and Systems Standards in Canada are governed by the Standards Council of Canada (SCC). This body is responsible for accrediting test and certification bodies that can test to Canadian standards and they report directly to the Canadian Parliament.

The essential process of product testing and certification for Canada is the same as it is in the U.S. Products must undergo testing by an independent accredited body to relevant Standards - and on successful completion of those tests and a review of the product technical file, certification can be issued.

The SCC started accrediting certification bodies and test laboratories in the early 1980s, and currently 37 organizations possess accreditation – including Intertek, offering the cETL mark to demonstrate compliance with Canadian Standards.

The Electrical Safety Authority (ESA) of Ontario now requires all manufacturers of electrical products intended for sale in Ontario to be registered with the ESA in addition to having certified products. For more information about the ESA, visit www.ESAsafe.com.

**History of the SCC in Canada**

For more than 50 years, the SCC has been the governing body of standard-development and certification bodies in Canada. The following types of standards and certifications are within their jurisdiction across Canada:
- Construction materials
- Electrical products
- Energy efficiency verification
- Fire and personal safety equipment
- Food safety
- Forestry products
- Fuel-burning equipment

**Standards Council of Canada
Conseil canadien des normes**

# CERTIFICATION FOR
# MEXICO: NOM-ETL

*Q: What does the NOM Mark mean?*

A: NOM stands for 'Norma Official Mexicana' and is the designation for the national certification scheme of Mexico.  NOM shows that a product has been found in compliance with accepted national standards, and meets the minimal requirements required for import, sale or distribution. To your distributors, retailers, and customers, the NOM is assurance that the product is compliant with safety standards, having been tested and certified by a third-party organization.

Over 2000 product categories are required by law to carry a NOM mark. These include small induction motors and motor operated tools, as well as household refrigerators, freezers, gas heaters, clothes washers and air conditioners; vertical and submersible water pumps; compact fluorescent lamps and wiring devices; telecom products that are data transmitters (digital, analogical, LAN or WAN systems) and those intended to be connected to the Public Telecom Network (PTN) and designed to process, receive, transmit or convert signals.

All electrical products exported into Mexico must meet NOM requirements as well as mandatory energy efficiency requirements. Certifications are valid for one year and need to be renewed annually.

# PRODUCT TESTING & CERTIFICATION

*Q: Who accredits laboratories to test against Mexican Standards?*

A: Intertek has been accredited as a testing and certification body by the Entidad Mexicana de Acreditación (EMA) and approved by the General Direction of Standards (DGN) of the Secretaría de Economía in Mexico. As an accredited certification body, Intertek may test for product safety and issue the NOM Mark for Mexican market entry.  Our Mexico City laboratory is also accredited by the EMA.

*Q: Does any other company test to NOM standards?*

A: Yes. Intertek offers local operations in Mexico providing independent testing to NOM Standards as well as final NOM Certification – which is mandatory for more than 2,000 product categories being sold in Mexico. Until recently, the NOM Certification program was solely managed by two Mexican Certification Bodies. Today the program allows additional Product Certification Organizations that meet strict requirements, such as Intertek, the ability to offer the NOM Certification.

*Q: What standards can Intertek test and certify to?*

A: Intertek is accredited to test and certify to a range of NOM standards, from small household appliances to commercial IT products, including:

- NOM-001-SCFI-1993 "Electronic Apparatus. Electronic household appliances input by different electric power sources. Safety requirements and testing methods for type approval", based on IEC-60065

- NOM-016-SCF1-1993 "Electronic apparatus for offices input by different electric power sources. Safety requirements and testing methods", based on IEC-60335-1

- NOM-019-SCF1-1998 "Safety of data processing equipment", based on IEC 60950

- NOM-003-SCFI-2000 is the mandatory NOM product safety specification for electrical products. As a specification, it does not include testing requirements, but it does call for the following standards:

    - NMX-J-521/1-ANCE-2005: Household electrical apparatus and electrical equipment, based on IEC 60335-1-1991-04

    - NMX-J-524/1-ANCE-2005: Handheld motor operated tools, based on IEC 60745-1-1998-02

    - NMX-J-508-ANCE-2010: Wiring devices, small interrupters, incandescent-type luminaries, based on IEC 60884-1 and IEC 60669-1

    - NMX-J-515-ANCE-2008: Industrial control, based on NEMA ICS

- NOM-064-SCFI-2000 safety requirements for indoor and outdoor luminaires (HID and Halogen Types).

### Q: Who can NOM Mark Certification be issued to?

A: NOM certificates will only be issued to Mexican manufacturers, importers and exporters, or to foreign manufacturers and exporters in countries with which Mexico has a free-trade agreement.

### Q: What documentation do I need to apply for a NOM certification?

A: You will need the following:

- The successful NOM test report, product design drawings and specifications including circuit diagrams.

- The user manual in Spanish.

- The product rating label in Spanish.

- Name and address of the importer or distributor in Mexico.

### Q: Can I Get Both a NOM Mark and an ETL Mark on my product?

A: Yes. Intertek provides both Marks and we can test your product for access to multiple markets (Mexico, United States, Canada, and others). There are many advantages in using a single testing laboratory for multiple market certifications, but primary among them are time-efficiency and cost-efficiency. Quite simply, combining your projects at Intertek will save your company time and money, and you'll likely be able to deliver your products to market faster – ahead of the competition.

### Q: Can I transfer a NOM certification to my local distributor?

A: No. However a manufacturer that is a NOM holder may extend usage rights of its NOM certification to Mexican distributors, who may then obtain their own NOM certification without additional testing.

# WHAT IS THE PROCESS FOR ETL CERTIFICATION AND LISTING?

There are 3 ways to obtain ETL Certification and Listing: through a new application, from a CB report and certificate, and via file transfer.

**1) Obtain ETL Certification Via a New Application**

*Stage 1 – Getting a Quote*

Once you've decided that you want your product to be sold in the US or Canada, approach us with as much information as you have on the product to obtain a quote. The application data to supply typically includes:

- Drawings/product photographs (if available)
- Product specifications (dimensions, power ratings, materials list etc)
- Product description (intended use)
- Target user base (e.g. domestic/commercial, mature consumers/children etc.)
- Details of any approved/certified sub-assemblies or components that will be used in the finish product
- A prototype or regular sample (if available)

It would also be helpful to know if you intend to limit the distribution of your product to certain states - for example, California has particular mandatory requirements for certain types of products (ex. air filtering appliances) that need to be tested. Knowing where you intend to distribute your product will allow us to disregard certain state-specific tests for faster turnaround on your quote. If you do intend to distribute nationwide, then we will consider all of the necessary local deviations in our proposal to ensure your test program covers all the territorial requirements.

We will review the material you send us taking into account any listed, recognized or classified components or sub-assemblies which will be used in the product. We then select the applicable standards for testing to identify a suitable laboratory in our network to conduct the work as well as a qualified reviewer to assess the results. We will then consult with them about the project and provide your quote. The quote details the number of samples we need, list the standards involved, including edition numbers and relevant revision dates.

If no suitable standard exists for a product, we can develop a framework for assessment based on the nearest relative standard. For example, with tanning beds - a specific standard for these products does not exist, so we would identify the nearest relative product (tanning lamps) and use the tests required by the standards governing those products to build an appropriate test program. The product will then be listed against that source standard. Our authority as an NRTL means we have the right to make expert decisions about the tests we undertake and the conclusions we make, without compromising the validity of the certifications/listing we issue.

Once that quotation is signed off by you and a purchase order is returned, we will acknowledge your order and define the testing schedule and then the project moves onto stage 2.

**Additional Applicant Notes: Listed, Recognized and Classified Components**
If a manufacturer purchases components or subassemblies from a third party to use in their finished product, they can reduce the amount of potential testing they have to undertake towards their own end product ETL certification by using listed, recognized or classified components.

**Listed components -** These are usually complete sub-systems or assemblies (such as controls) that already have full certification in their own right. These systems are used 'as-is' in the final product. These will not need to be retested, but we will check the products parameters for use in the end product.

**Recognized components -** Recognized components are incomplete products that are used in end products. Generally these will already have been tested to some degree – but we will need to be made aware of what the conditions the component has been tested under. These are called 'conditions of acceptability'. For example, a power supply may have been assessed with a particular type of fuse or a motor may have been tested without its casing.

Getting the conditions of acceptability for a sub-system, as well as the product specifications will help us to quote more accurately and will save time on the project by preventing delays and enabling us to remove tests for these products from the program. If we don't know that a component or sub-assembly has already been assessed, we will treat it as an unlisted component and it will probably need to be assessed – particularly if it is a critical system such as a control.

If no conditions of acceptability exist for a component, our engineer will make assumptions on what these are and these will be specified in the end report to document the parameters of the assessment.

**Classified components -** A classified product has been assessed in a more regular way against a standard, but does not meet all of the requirements for a standard. One example would be a medical product that meets the safety requirements of the medical product standards, but not the EMC requirements. Another example would be a safe or strongbox that is fireproof, but is not burglar-proof as it can be stolen in its entirety if it isn't secured to the floor.

Some certification bodies will only accept listed, classified or recognized components that they have certified themselves without further testing, whereas Intertek will accept listed, classified or recognized components certified by any NRTL approved to test it. This helps to prevent delays in the product assessment process, saving time money and frustration, and supports your right to choose which listed components you

use.

Intertek can test products to recognized and classified status as well as full listing and each will be awarded a Mark, but these Marks will be embellished with the words 'Recognized' and 'Classified' accordingly.

### Stage 2: The Product Information Pack

Now the product information pack is issued to you. This outlines the process and contains the forms that we'll need from you to complete the listing. It will also indicate project milestones.

### Stage 3: Product Sample Testing

Once we receive the appropriate samples from you, we will commence the testing process. Should the product fail a test at any stage in the assessment we will contact you with our findings. If you want to make refinements to the product at this point, simply let us know and we will pause the assessment. Once you are ready for the assessment to continue, notify us and we will recommence. Should the product pass all of the tests in the standard, we will then draft a listing report.

### Stage 4: Follow Up Services

During product assessment, Intertek will supply information to complete the process, provide costs for follow-up services, and schedule inspectors to make relevant factory assessments. We will send you:

- Information about certification
- Certification Agreement
- Client Information Form
- Information on labels and marking
- Information on production line inspection

### Stage 5: Initial Factory Inspection

Once the product has been assessed and the test report drafted, Intertek will send an inspector out to inspect your manufacturing site(s). If this meets our quality systems requirements, the listing report will be finalized for product approval.

### Stage 6: Additional Items

In order to receive your final Authorization to Mark, you will need to that ensure the following items are in place:

- Final production line testing has been completed
- Factory inspection has been completed at each site where the product is to be made
- A listing report is available
- The Certification Agreement is signed in duplicate and both returned to Intertek for counter-signing
- A facsimile of the ETL Listed Mark as it will appear on the product (either on a label or via a direct imprinting) has been submitted to Intertek for approval
- A Client Information Sheet has been completed and sent to the team at Intertek

- A PO has been sent to the Regional Follow-up Service Center to initiate follow-up services (un-announced inspection and product review) that are required for the ETL scheme

### Stage 7: Intertek formally issues the listing report

The listing report provides technical detail of the product and the test specification necessary to ensure continued compliance. It is used by the manufacturers and field representatives, and details the following:

- Agent, applicant and production site
- Product description
- Pre-product inspection findings
- A list of standards used in the evaluation and a summary of the results
- Special requirements regarding unlisted components
- Production line testing requirements

### Stage 8: Authorization to Mark

An Authorization to Mark (ATM) is then issued, enabling manufacturers to mark the product and packaging with the ETL Mark. A mark can either be on a sticky label or it can be added to a product by direct impression onto the product information plate.

The ETL Listing Mark consists of the following four items:

1. The ETL Certification Mark with "US" and/or "C" as identifiers. The letter "C" adjacent and to the lower left side of the ETL Certification Mark indicates that the product complies with a Canadian standard. The letters "US" adjacent and to the lower right side of the ETL Certification Mark indicates that the product complies with a US standard. The required minimum size of the identifiers is 2 mm.

2. The word, "Listed" or "Classified" or "Recognized Component" is to be incorporated into the ETL Certification Mark. If upon reduction, the word "listed" is not legible as part of the trademark, it shall also appear separately.

3. The Control Number issued by Intertek. This five to eleven digit number is unique to the manufacturing site for each applicant.

4. A product descriptor, which refers to the national standard used for certification, shall be used. Example:

   - **For US standards:** "Conforms to ANSI/UL Std. XX."
   - **For Canadian standards:** "Certified to CAN/CSA Standard CXX No. XX."

## 2) Obtain ETL Certification from a CB Report & Certificate

You can obtain an ETL listing through the IECEE's CB Scheme which facilitates the mutual recognition of test certificates for electrical equipment and components between accredited Certification Bodies

intertek.com/ETL

## PRODUCT TESTING & CERTIFICATION

The process begins when an applicant approaches their existing Certification Body and obtains a detailed CB test report form and certificate (no more than 3 years old), which is then delivered to Intertek as part of the ETL application. After a satisfactory review of the report, certificate and product sample, Intertek will draft a listing report and an Authorization to Mark (ATM). The actual listing and ATM is issued upon completion of a successful initial factory inspection audit.

**3) Obtain ETL Certification Via File Transfer**

If you have an existing product certification from another NRTL, we can accept your existing file as the basis for awarding our ETL Mark, allowing you to easily transfer your previous listing to Intertek's ETL Listed Directory.

The process begins once the applicant obtains their existing test and certification data and delivers it to Intertek. This includes complete product specifications and detailed description, as well as complete test reports detailing the standards tested to and the equipment used to test the product.

Intertek then assesses the documentation to determine if any additional testing is required. If no further testing is needed, a factory inspection audit is conducted and Intertek issues a new listing report and ATM.

# INFORMATION
# REGARDING
# "COUNTERFEIT MARKS"

Counterfeit marks are a real danger because they can cause significant harm to individuals and property – in extreme cases even death. It's the Authority Having Jurisdiction's responsibility to ensure that products and installations in his or her jurisdiction are properly certified and meet code. But how will they know which ones are real and which ones are counterfeit?

In the United States, OSHA relies on the Certification Bodies such as Intertek (ETL), Underwriters Laboratories (UL), Canadian Standards Association (CSA) and others to list electrical equipment once it has met the applicable requirements of testing and certification. When products are tested in the laboratory or in the field and proven to comply with the appropriate safety standards, a certification mark is issued to the manufacturer and it may be applied to the product as proof of compliance. Each certification body relies on the integrity of its "mark" to be a symbol of product safety in the marketplace.

For most electrical equipment, from cabling to control panels, photovoltaic modules to HVAC equipment, certification is needed to meet the National Electric Code or Canadian Electric Code. Responsible manufacturers go to great effort (and expense) to ensure quality and safety and put their products through testing and certification. However, there are some manufacturers who are more interested in evading the additional time and expense, and they place counterfeit marks on their products hoping they don't get caught.

The first key to recognizing counterfeit or "fake" marks is to know the real ones. Most electrical inspectors, fire marshals, and other Authorities Having Jurisdiction are familiar with the most common certifications such as UL, ETL and CSA, and with good reason. UL was founded in 1894 by William Henry Merrill in Chicago while ETL's origins date back to 1896 when founded by Thomas Edison in New York City. CSA was founded a couple decades later in 1919 in Canada. All three organizations have played a large role in electrical safety testing and certification in the US and Canada for nearly a century.

Today there are fifteen organizations recognized by OSHA in accordance with U.S. federal law, 29 CFR 1910.7, to test and certify equipment or products in the US. Each has its own scope of products that it is allowed to test and certify, based on demonstrated capabilities and expertise.

Marks may have some slight variation to them, such as saying "listed", "classified", "recognized component" or "verified" as part of the design. This is to distinguish slightly different characteristics of the types of testing that was done, the standard it

was tested to, or the type of product that it is. In cabling products, for instance, it's very common to see "Listed" products for safety (fire, electrical hazard) as well as "Verified" products for transmission performance (attenuation, crosstalk, etc.)

Another key to recognizing a legitimate mark versus a counterfeit is the product's listing in the Certification Body's product directory. The directories show the manufacturer name, model name or number, the standard to which the product is certified, and the certification mark that it has received. To see an example, visit www.intertek.com/ETLdirectory and search by manufacturer name or standard number (e.g. "60950.")

These product directories must be kept up-to-date by the Certification Bodies. There should be no lag time between when a product is installed in the field and when the product is listed in a directory. In the event you do not see a product listed in the certifier's directory, it's always best to contact the certifier directly. Perhaps the manufacturer is different than the "brand" name on the product and therefore not intuitive in a search. You should be cautious and do your due diligence on any product that might raise suspicion.

The Certification Bodies have internal processes to investigate potential counterfeit marks. This process, or the company's contact information, is typically available on the certifier's website. They should be notified immediately of any suspicious product encountered in the field so an investigation may take place. Intentional counterfeiting represents a very, very small percentage of products, but it does need to be taken seriously and it requires swift action because the product may not meet the requirements of the applicable standard or code.

Additional steps may be taken by each Certification Body to help lessen the chance of counterfeiting. Some may use special holographic labels; others do not make high-resolution artwork available online. Attempts to police and restrict access to the marks, making them available only to those permitted to use them, helps to reduce instances of counterfeiting in the field but obviously doesn't eradicate it completely.

Often, counterfeit labels are easy to spot. The perpetrators may not be interested in taking the time to make high-quality fake labels, same as they are not interested in making high-quality products that meet codes and standards. Sometimes the names of the certifiers are spelled incorrectly on the label – as crazy as it sounds when the names are ETL, UL, or CSA – but it's true. Other variations might include the certification name spelled out, or clear and evident deviations of the real mark.

Rule of thumb is "when in doubt, check it out." A simple search on the Certification Body's online directory will provide a quick answer in most cases. If the product has a counterfeit mark, the applicable certification body takes corrective action which may include a notice issued on the certifier's website

The responsibility to keep these products off the market is shared by many, including government border control and law enforcement, industry associations, legitimate manufacturers, the certification bodies themselves, and of course Authorities Having Jurisdiction. Without the partnership of each of these elements, counterfeiting has a chance to thrive. When all the groups work together, counterfeiting and the potential harm it can cause can be lessened.

# INTERNATIONAL TESTING
# & CERTIFICATION

**IECEE CB Scheme**

Obtaining full product certification through the IECEE CB scheme will help to achieve acceptance and recognition by the authorities of more than 50 countries worldwide. While some authorities accept a CB Certificate as evidence of compliance without the need to apply for a specific national certification, others do not. In this case manufacturers can use their CB Certificate to apply for the nationally recognized certification of their target markets, without the need to conduct all of their testing again from scratch. Sometimes national deviations in standards and regulations may require some additional assessment of a product, but supplemental tests are not always required as many countries use harmonized standards.

Essentially, one CB certificate can be used in applications for national certification to all 50-plus members – ensuring core testing does not need to be repeated. For more information, refer to: www.iecee.org.

**Fast Facts: The CB Scheme:**

The CB Scheme is run by an international group of certification bodies known as the IECEE. It enables a mutual acceptance of test reports and certificates dealing with the safety of electrical products and components between member bodies. A manufacturer holding a CB Certificate from one member body can obtain the certification Marks of another.

The scheme is based on the use of harmonized IEC Standards and declared national differences.

The CB Scheme is recognized in more than 50 countries worldwide.

# SUMMARY

When choosing a testing and certification partner, make a list of your key purchasing drivers. Compare what you are looking for in the services that each NRTL provides, and like any other product or service, use competition as the driver for the best purchasing decision.

Intertek has been helping manufacturers meet national and international standards for over 100 years. With unsurpassed expertise in this area, Intertek helps customers cut through the incidentals and provide the critical data they need. Intertek empowers customers to make the choices about testing, approval and listing that will help drive the product to market faster than the competition. Intertek is recognized as an NRTL in the USA, and in a similar capacity as a Testing Organization and Certifying Body in Canada, as well as being a Notified Body in Europe.

Intertek is a leading Total Quality Assurance provider to industries worldwide. Our network of more than 1,000 laboratories and offices and over 43,000 people in more than 100 countries, delivers innovative and bespoke Assurance, Testing, Inspection and Certification solutions for our customers' operations and supply chains. Intertek Total Quality Assurance expertise, delivered consistently with precision, pace and passion, enabling our customers to power ahead safely.

**FOR MORE INFORMATION**

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**intertek**

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