



# GSO Certification

The key to successful home appliance sales in the Gulf region.

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# Overview

Certifying a low-voltage electrical device for sale in the Gulf region makes sound commercial sense. Not least because it opens the door to a US\$3.2 trillion market, including Saudi Arabia and the United Arab Emirates.

Regulating such products is the responsibility of the Gulf Standardization Organization (GSO). While the GSO standards closely follow EU regulations, there are still enough variations to require close attention to every detail in your product conformity assessment.

TÜV Rheinland understands the challenges. In 2017, it became the first international third-party testing, inspection and certification (TIC) company to achieve Gulf Standardization Organization (GSO) Notified Body (NB) status in Thailand and Japan. They joined TÜV Rheinland Hong Kong, which was the first independent technical services company in the Asia Pacific to obtain GSO Notified Body status for electrical products and toys, as well as TÜV Rheinland Korea.

This white paper builds on that in-depth expertise, telling you what you what you need to know to successfully jump into the Gulf region.



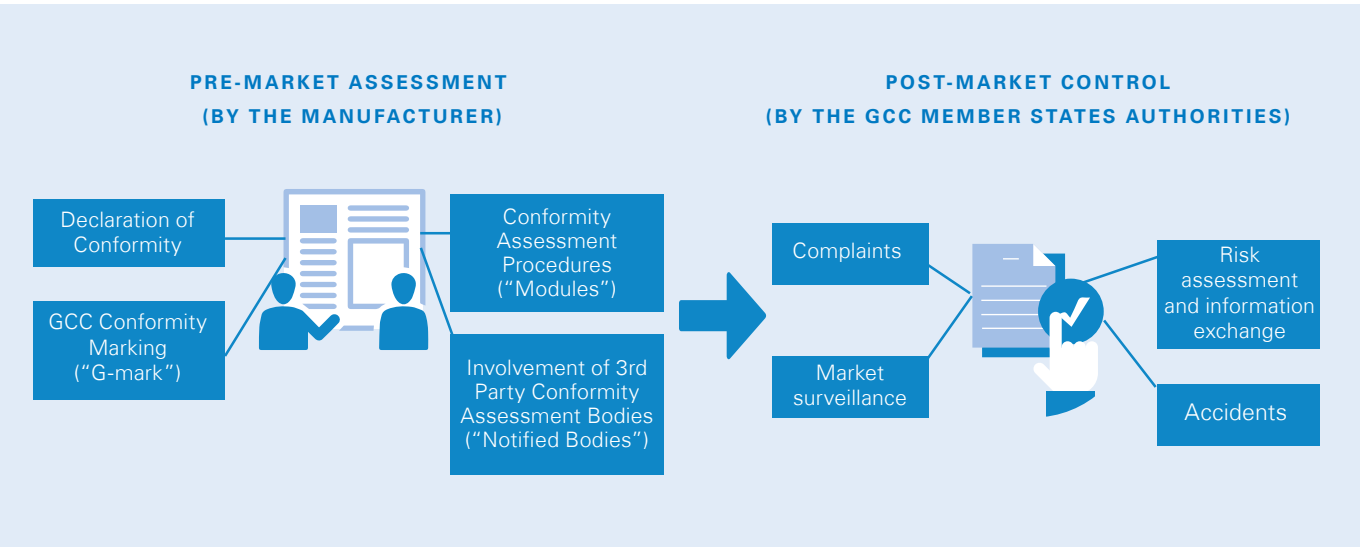


# GSO Fast Facts

Established in 2005, the GSO is a standardization organization and regulatory body for the Gulf Cooperation Council (GCC), whose members include all the Arab Gulf states (except Iraq). Yemen is currently in negotiations for future GCC membership, and adheres to the Technical Regulations adopted by the GCC countries.

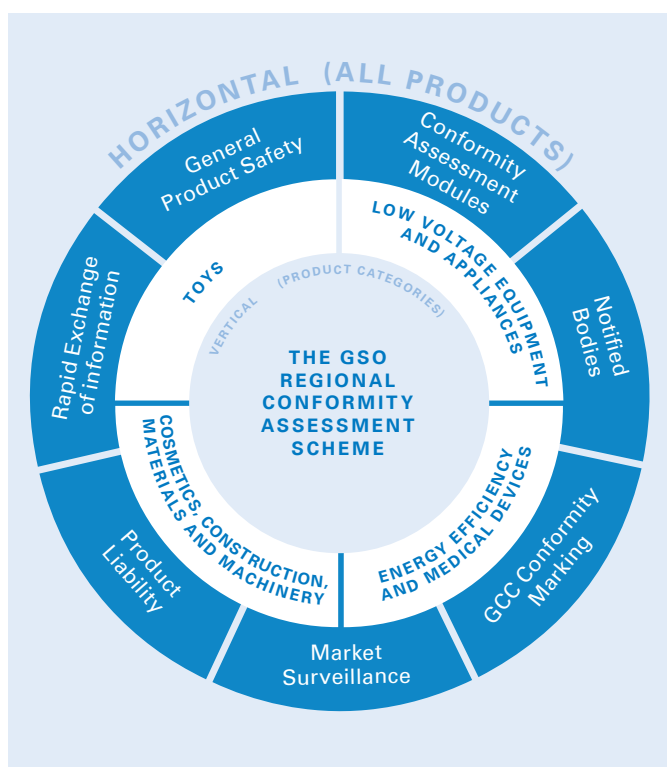
The GSO publishes Technical Regulations, Gulf Standards, and Gulf Conformity Assessment Procedures for a host of commodities and products. Its members are committed to shifting the region's conformity assessment procedures to be in line with other major world regulations, such as CE marking. For electrical products, conformity is generally based on compliance with IEC standards commonly adopted within the region.

The GSO's regulatory approach includes:



# Understanding Regional Conformity

The GSO Regional Conformity Assessment Scheme (RCAS) regulates products in the GCC single market. Its technical regulations apply horizontally (i.e. to all products and industry sectors) and vertically in specific categories of products or sectors of the economy.



The scope of the Technical Regulation includes:

## IN SCOPE

All electrical and electronic devices, appliances and fixtures that contain components designed for use with a voltage rating of  
**AC 50-1000 V**  
**DC 75-1500 V**

**Note:** Products in scope are grouped into List 1 and List 2 according to risk level. Currently only products on List 2 are regulated, while List 1 has not yet been published.

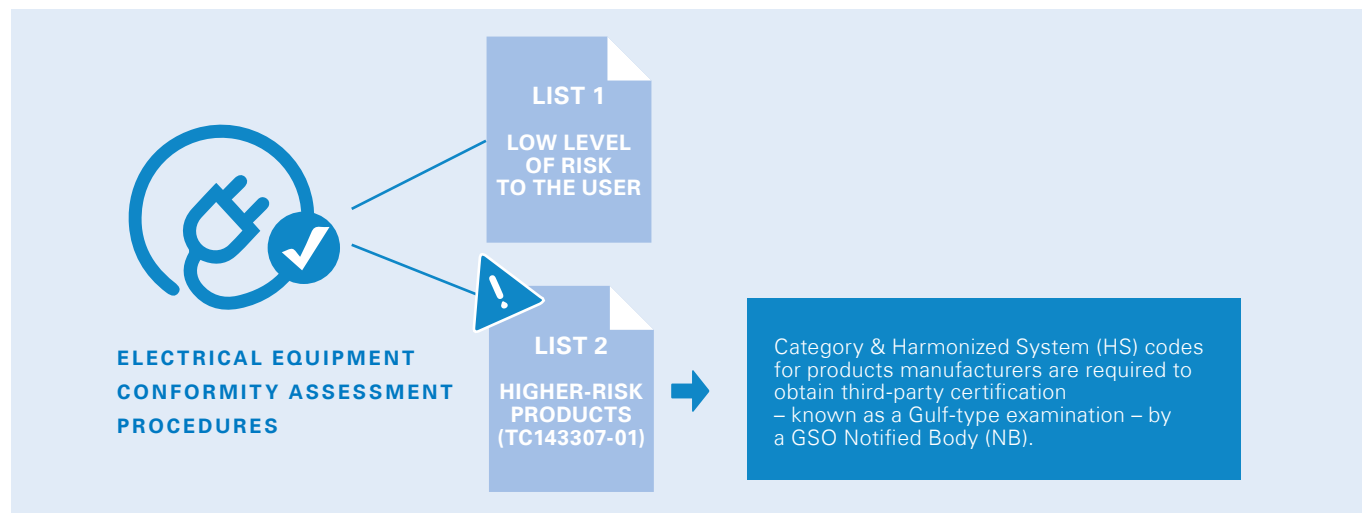
## OUT OF SCOPE

- Electrical equipment for radiology, medical purposes or for use in an explosive atmosphere
- Electrical parts for goods and passenger lifts
- Electricity meters
- Electric fence controllers
- Radio-electrical interference
- Specialized electrical equipment, for use on ships, aircraft or railways

To be eligible for sale, Low-Voltage Equipment (LVE) products must meet the requirements of the GSO Technical Regulations. These protect consumers from potential hazards, such as physical injury, high temperatures, electric shock, fire or radiation.

## LOOKING AT LISTS

There are two categories of electrical equipment conformity assessment procedures, each based on the level of risk associated with the products.



The term “Notified Bodies” refers to independent conformity assessment organizations, such as TÜV Rheinland Group, which have been assessed as competent and impartial by the GSO. The Notified Bodies play a key role in the regulatory process and technical assessment of products intended for the Gulf Cooperation Council (GCC) common market.

Products on List 1 will be subject to requirements for self-compliance by internal production control by the manufacturer, without the need for a Notified Body certification.

The products on both lists are required to bear the G-mark – known officially as Gulf Conformity Marking.

Products that are assigned to List 2 include the following 13 categories:

1. Domestic Electrical Fans
2. Refrigerators, freezers and other refrigerating or freezing equipment
3. Centrifugal clothes dryers and clothes washing machines, including machines which both wash and dry
4. Food grinders and mixers, fruit or vegetable juice extractors
5. Toasters
6. Electro-thermic hair-dressing apparatus and hand dryers
7. Domestic electric heating apparatus
8. Microwave ovens
9. Other ovens; cookers, cooking plates, boiling rings, grillers and roasters

10. Electric instantaneous or storage water heaters and immersion heaters
11. Electric smoothing irons
12. Plugs, Socket outlets, Adapters, Cord Extension Sets and battery chargers
13. Air conditioners

## ROLES & RESPONSIBILITIES

The Gulf Technical Regulations are built-on concepts developed in Europe, such as the clear definition of roles, duties and obligations of “economic operators” at different stages of the supply chain: manufacturer, authorized representative, importer and distributor.

The GSO Technical Regulations represent a major shift from the inspection-based national import control mechanisms to full compliance requirements in the pre-market, marketing and post-market stages of product retailing. The same requirements apply to all products - whether imported into or manufactured within the Gulf countries.

Accordingly, it is essential to understand the legal definitions and obligations laid out in the Regulations.

**ARTICLE (1): DEFINITIONS**

26. **Manufacturer:** Means any natural or legal person who manufactures electrical equipment or has it designed or manufactured, and markets that electrical equipment under his name or trademark.
27. **Authorized Representative:** Means any natural or legal person established within one of the Member states who has received a written mandate from a Manufacturer to act on his behalf.
28. **Importer:** Means any natural or legal person established within one of the Member states who places on the market electrical equipment from a third country outside the Member states.
29. **Distributor:** Means any natural or legal person in the supply chain, other than the Manufacturer or the Importer, who makes electrical equipment available on the market.

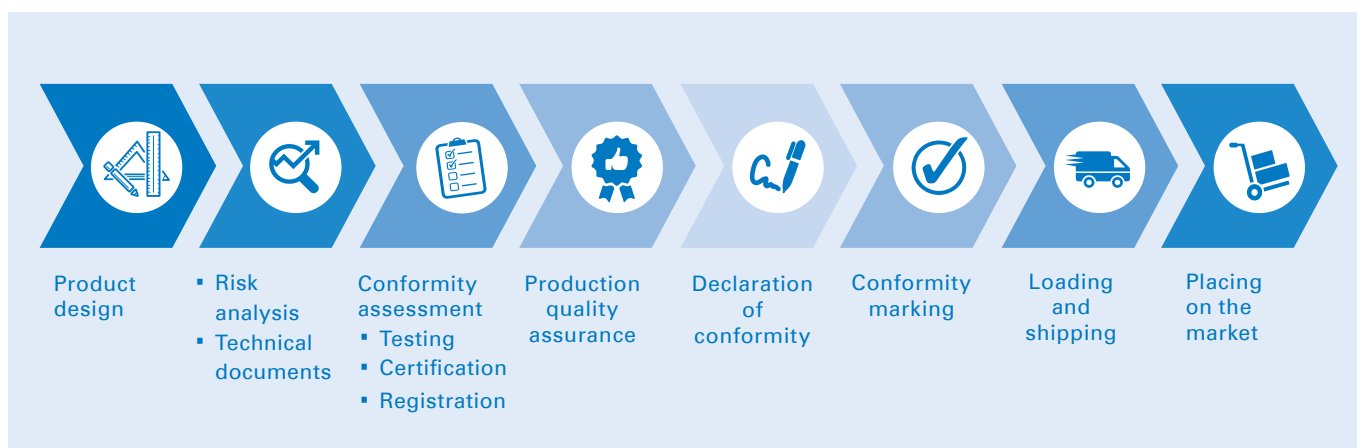
Private label importers or retailers who place products on the GCC market under their own tradename and brands are legally considered as “manufacturers” and subject to the manufacturer’s obligations. This typically will require close cooperation and strong link between the supplier and the company placing the products on the market.

This situation is very commonplace. Products are often sourced from or manufactured to specifications in other countries by OEM suppliers, and then marketed to consumers under the private label of the responsible appliance brand owner in GCC countries.



# From Design to Market

Products sold on the GCC market must conform to the requirements set out in detail in Annex 1 of the GSO Technical Regulation. If these requirements are not considered in the initial stages of product design, critical faults may only become obvious when testing the finished product. Any failure to get your products into compliance at this stage can be costly and greatly increase your time-to-market. Accordingly, a recognized technical service provider can help to guide you through the process and understand all technical and legal requirements at an early stage.



## ESSENTIAL LVE AND EMC SAFETY REQUIREMENTS

The Essential Requirements listed in Annex 1 are the bare minimum for electromagnetic compatibility and basic safety objectives for devices sold in the GCC market.



All LVE devices must be delivered with markings,

instructions for use and safety information written in Arabic. They must be safe for the user to assemble and connect. And, most importantly, they must protect users from physical injury and hazards such as temperature spikes, electric shock, radiation and toxic chemicals. If they are intended or likely to be operated in non-air-conditioned or outdoor spaces, they must also be designed to withstand the extreme temperatures in the Gulf region. The designers should also consider the electrical voltage and frequency of each Member State, as well as the type of plugs and sockets in use.



In addition, devices must protect users from foreseeable overload hazards caused by external influences – both mechanical and non-mechanical. Electromagnetic compatibility is required for external electromagnetic interference and disturbances generated by the equipment itself.

#### **RISK ASSESSMENT, HARMONIZED STANDARDS & TECHNICAL DOCUMENTATION**

Most countries have established such basic requirements in their laws. However, the GSO places the onus on the manufacturer to analyze and assess the potential risks of their products during design stage and document it as part of their technical compliance file.

##### **ARTICLE (19): RISK ANALYSIS**

Manufacturer shall, before placing electrical equipment on the market, carry out a risk analysis through the identification of the chemical, physical, mechanical, electrical, hygiene, radioactivity, flammability and heating hazards that the electrical equipment may present, as well as an assessment of the potential exposure to such hazards.

Products in compliance with the Gulf (GSO) Standards – which are generally harmonized with IEC standards – are deemed to be in conformity with the Essential Requirements. This concept is called “presumption of conformity”.

If a product isn't fully covered by the scope of the existing standards, or if several functions are combined, new functionalities added or novel technical solutions adopted, compliance with one product standard alone may not be sufficient to demonstrate that all the Essential Requirements have been fulfilled. In this case, additional measures to ensure safety must be considered during the design process and identified by the manufacturer in a documented analysis of the risks.

In exceptional cases, compliance can still be established by demonstrating that the construction of the product can fulfil the Essential Requirements, even if the standards cannot be met. This however in general requires assessment by a Notified Body.

#### **CONFORMITY ASSESSMENT PROCEDURES**

Conformity assessments for LVE devices involve engaging a neutral third party known as a Notified Body (NB).

Notified Bodies are independent testing and certification organizations that have been authorized by the GCC authorities to perform the regulatory pre-market technical assessment of products intended for the GCC common market. They also support authorities who are responsible for controlling products already on the market.

As manufacturer, you need to check against List 2 to determine if your product requires 3rd party certification. At the time of application to the Notified Body, your product's technical documentation file should contain all essential elements, including risk analysis and prototype samples for testing.

The NB will perform a design review, testing and inspection of your products to assess whether they meet GSO standards.

#### **NECESSARY DOCUMENTATION**

1. Application Form
  - Destination countries within GCC member states
  - HS code classification by the manufacturer/exporter
2. General Agreement with Notified Body (for new customers)
3. Safety/EMC test reports (if available, otherwise NB will arrange testing)
4. Manufacturer's risk analysis
5. Photos of the equipment
6. Rating label; any warning labels shall be in Arabic
7. Instruction manual in Arabic and English
8. Other technical documents (drawings, schematics, circuit diagrams, PCB layouts, transformer, motor and component specifications etc.)
9. Plug certification (if the appliance has a plug)

While each application goes through a preliminary review to determine its readiness for certification, testing in TÜV Rheinland labs, or utilizing the IECEE CB scheme, greatly facilitates the process. Our experts can discuss the details with you during the initial review of your application and suggest the optimum solution for you.

# Carrying out Certification

## WHO CAN APPLY?

Usually the manufacturer oversees the conformity assessment procedure and applies for certification. But, it can be delegated to an authorized representative in the GSO member states. As discussed in previous sections, private label importers or retailers who place products on the GCC market under their own tradename and brands are legally considered as a “quasi manufacturer,” with the same responsibilities as an actual manufacturer.

When the product design and documentation is complete, the manufacturer submits application documents (including the technical file and risk analysis) to a GSO NB for the Gulf Type Examination procedure. The NB reviews the technical documentation and supporting evidence to assess the technical design of the product. After an initial review, actual product samples or finished products are submitted for testing. TÜV Rheinland can help you to identify the most suitable testing laboratory location for your specific situation.

The NB’s engineers and inspectors test every specimen device and the results are reviewed by the NB’s team of electrical safety and EMC experts. Once documentation verification is complete and all standards are met, the NB certifies the product as passing the Gulf Type Examination.

## REGISTRATION AND TRACEABILITY

All certified products must be registered with the GSO Certificate Tracking System, which contains details, such as manufacturer, factory and product identification.

Registered products have a Gulf Conformity Tracking Symbol (GCTS) printed on their certificate which contains the G-mark, the registration number of the Notified Body and a unique QR code linking to GSO database for rapid verification by customs authorities. While certificates maintain their validity for as long as the standards used as basis for certification are valid, or up to a maximum term of 3 years per the GSO LVTR rules, the GCTS registration must be renewed annually.

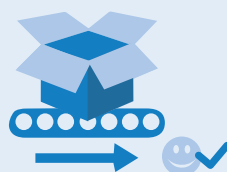
## CONFORMITY ASSESSMENT PROCEDURE AND CERTIFICATION



1 Manufacturer submits application documents



2 NB experts review application documents



3 Product samples or finished products submitted for testing



4 NB certifies product as passing Gulf type examination

### **WHY THIRD PARTY LABS?**

Using a third-party laboratory or Notified Body, such as TÜV Rheinland, can save manufacturers considerable time and expense. We have labs close to suppliers, decades of experience and are well-versed in the approval requirements to gain quick access to GCC markets. Moreover, only GSO-authorized Notified Bodies and their affiliated labs are permitted to conduct the necessary tests, unless you already hold IECEE CB scheme certificates and test reports according to the IEC standards valid within the GSO territory.



It is vital to inform the NB before implementing any changes to the design, components, materials or otherwise modifying the product or production process so it can update the technical documentation and perform any necessary additional testing. Unapproved modifications can invalidate a product's certification. In extreme cases, that can mean halting sales and recalling non-approved from stores and consumers. Consult with TÜV Rheinland during your engineering change management process. Our experts will be happy to support you with every step.

As technology progresses the product standards issued by IEC are continuously being amended and updated. Any new editions adopted by GSO become effective in the GCC territory within two years after being published by the IEC. Our experts will work with you to ensure your certifications are always up-to-date and products are literally "state-of-the-art".

# Making your mark

Once a product on List 2 has made it through the application, testing and inspection process, the GSO Notified Body will issue a Gulf Type Examination Certificate and provide a GTCS marking design with a unique QR code. The manufacturer can now go into mass production. From this point, the process is in the hands of the manufacturer, who is obliged to implement a quality assurance system to ensure all products are in conformity to the certified type. Usually, operating a ISO 9001-compliant management system is deemed sufficient, but being a certified organization is not a requirement.

## **SELF-DECLARATION OF CONFORMITY (SDoC)**

A Self-Declaration of Conformity (SDoC), in both Arabic and English, is a legal requirement for any manufacturer wishing to affix the G-mark on their products. The SDoC states that safety and EMC requirements have been fulfilled and the manufacturer assumes compliance responsibility for each item of electrical equipment.

SDoCs are filed along with the Technical Documentation, and the entire technical file is held for 10 years after the product enters the market. Documentation can be kept by the Manufacturer's Authorized Representative in the GSO member states, and must be made available

to relevant authorities upon request. Arabic language is preferred, but English documents may be acceptable if agreed by the authority. If required however, relevant parts of the documentation must be supplied to the authorities in Arabic translation within 20 working days. An Importer SDoC is also required for products imported into GCC member states. Templates for these declarations are provided in Annexes 5 and 6 of the Regulations.



## CONFORMITY MARKING

With requirements met and type approval certification obtained, the product is now ready to enter the market. The manufacturer – whether established within the GCC countries or not – is in charge of product conformity and placing the GCC Conformity Marking (G-Mark) on the products. The G-Mark can only be affixed after performing all the above conformity assessment procedures, and must be on the product and packaging before it launches in the GCC market.



In addition, information related to the importer, such as a company's name and address, must be marked – at least on the product's packaging.

## RULES FOR G-MARKING

The marking – whether printed on the packaging or added as a sticker – must clearly be legible and not easily removed. It must be included on the product or its data card. Or, if that is not possible, on the packaging or accompanying documents. In all cases, the mark must be at least 5 mm high and in proportion (see diagram above).

As of 1 April 2017, the G-Mark must be accompanied by the registration number of the Notified Body which performed the certification and a product-specific QR code which is also found on the Gulf Type Examination certificate. This marking is called the "Gulf Conformity Tracking Symbol" or in short: "GCTS".

Full details can be found from our GCTS marking FAQ at our website [www.tuv.com](http://www.tuv.com)

Customs authorities in GCC countries check the registered details of the certification to speed up customs clearance and market surveillance

authorities can quickly identify non-compliant products. Consumers can also use their mobile device to scan the QR code contained in the GCTS marking to verify they are buying a genuine and safe product.

## ADDITIONAL NATIONAL REQUIREMENTS

In addition to the regional requirements for safety and electromagnetic compatibility established by GSO, there are several national laws to consider when marketing electrical products in the Gulf countries. Most Gulf countries have already established energy performance and efficiency class labelling for certain appliances, such as air conditioners, washing machines, refrigerators, lamps and LED lighting.

Our experts will help you to determine whether your products require labelling and provide support along with necessary testing and registration.

Certain restrictions exist on the use of substances harmful to the environment such as R22 refrigerants or toxic chemicals. Kitchen appliances may need evaluation for food grade materials to ensure user safety. Products incorporating radio frequency communications modules may require type approval or homologation by national telecom authorities.

Some Gulf countries require import controls for regulated products by means of pre-shipment inspection and verification by an accredited inspection body.

TÜV Rheinland is accredited for Saudi Arabia SASO, Kuwait KUCAS and other schemes in the region and can support you with an overall market access solution.



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Lina Kwee-Nguyen has been involved in the testing, inspection and certification industry for over 14 years, spending the last five with TÜV Rheinland. She has built-up a wealth of professional expertise and technical insight, with a focus on MAS/Electrical products. Today, Lina is responsible for the delivery of services in North America as well as developing global channels and market access solutions for a broad range of products in over 200 countries.

She holds an MBA from Oklahoma City University. Before joining TÜV Rheinland, Lina worked at Intertek ETL Semko, Electro Scientific Industries, and Nemko.

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Based in Shanghai, Martin has worked in Asia's testing, inspection and certification industry for the last 12 years, focusing on electrical equipment and toys. He has acted as a certifier and approved signatory for the CE and GS mark, the IECEE CB scheme and other product safety approvals. Coordinating with GSO Notified Bodies for the TÜV Rheinland Group, he is a main member in the GSO NB Cooperation Group for Low Voltage Electrical Equipment and Appliances. He also acts as the convener of the GNBCG-LV Working Group WG2 on the Harmonization of Conformity Assessment Procedures. He holds an MSc degree in Physics from Berlin Free University (Germany).



Lina Kwee Nguyen



Martin Werthammer



## Our experts

The TÜV Rheinland market access experts support manufacturers by performing testing, inspection and certification on electrical products for markets all over the world.

To learn more about current and upcoming Gulf Region standards, and how you can have your products inspected and certified, contact TÜV Rheinland at <http://www.tuv.com>

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