Assisting the Ministry in Studying and Implementing the Rules of Acquisition of International Marks and Their Accreditation and Review

November 2003

In the context of simplifying inspection procedures at GOEIC, Foreign Trade Ministerial Decree 515/2003 clarified and streamlined inspection of food and agricultural imports.

To complement these efforts on the side of manufactured imports, the Ministry intends to consider the possible recognition of international marks on imports arriving into Egypt and to eliminate (or reduce) inspection at the border. This request was triggered by a proposal received from a consulting firm proposing recognition of the CE mark for imports arriving into Egypt.

However, the Ministry's perspective is to study the principle of recognition in general, and if they choose to adopt it, apply it to all marks that meet specified levels of safety standards as well as trusted conformity assessment systems.

At the Sharm El-Sheikh retreat the Ministry requested that ATR assist the Ministry by providing a background document that summarizes the main features of widely recognized marks. FTPS requested from ATR a background document that identifies major conformity assessment marks and standards that are recognized worldwide. This job was completed and summaries for six international conformity marks were submitted to Mr. Elsayed Abu Elkomsan, Head of FTPS.

These marks are issued by international commissions or are recognized in developed country markets such as the US, EU, Japan and Canada. Summaries covered the recognizable logo or mark, coverage, conformity assessment procedures associated with each mark.

The research conducted for this task relied on public information on these marks available at the their respective websites on the Internet or on information provided by consulting firms that assist in the process of acquiring these marks.

ATR indicated to FTPS that further assistance on this topic may require contacting these agencies and requesting further information, or relying on the assistance of expatriate consultants that are more familiar with this area. ATR offered assistance will be happy to assist in this exercise as well.

I. Underwriters Laboratories, Inc.

Underwriters Laboratories Inc.

Underwriters' Laboratories of Canada

Underwriters Laboratories Inc. (UL) is an independent, not-for-profit product safety testing and certification organization. We have tested products for public safety for more than a century. Each year, more than 17 billion UL Marks are applied to products worldwide.

Founding in the United States in 1894, UL became a leader in U.S. product safety and certification. Now it is one of the most recognized, reputable conformity assessment providers in the world.

UL Certification means that a product or system has been evaluated and tested and receives ongoing follow-up auditing to evaluate its compliance with applicable Canadian, North American and international standards.

UL has developed more than 800 Standards for Safety. ..Millions of products and their components are tested to UL's rigorous safety standards with the result that consumers live in a safer environment than they would have otherwise.

How are UL's testing services organized?

UL's Engineering Services division is organized into sections that evaluate specific types of products. The staff includes experienced engineers and technical support personnel. Examining how products are constructed, conducting tests, evaluating results and developing safety standards for products are a few of their responsibilities. We also have field representatives who visit manufacturers' facilities. They help confirm that products bearing the UL Mark comply with applicable UL safety requirements.

Who may submit a product?

Products are typically submitted to UL by manufacturers or product developers, or by their authorized agents, representatives, licensees or others. When submitting a product to UL, you may choose which company name

(the manufacturer, agent or licensee) you would like to appear on the product and in UL's published product directories. Once selected, this name must appear on the product if it is found to comply with the applicable UL Standard and will bear a UL Mark.

Getting the product evaluation under way

Once UL has as much information as you can provide, UL can identify where and by what department the evaluation will be conducted. UL's engineering staff will:

- plan a test program,
- provide an estimate of testing costs,
- estimate the amount of time needed to complete the investigation and
- send you application forms.

At this point, if you have a specific deadline you are trying to meet, please let UL know so it can be considered when establishing a promise date for completion of the evaluation. Once you return the signed application forms, provide any necessary preliminary deposit, and UL has received the necessary test samples, UL engineering staff can begin the actual investigation of your product.

What you can expect after testing

Once the product testing is completed, you will hear from your project engineer about whether or not your product complies with UL's requirements. For products meeting the requirements, the project engineer will develop a formal report based on the test results. These test results will also be used to develop a Follow-Up Services program and will serve as the basis of a Follow-Up Services Procedure.

The Follow-Up Services Procedure is a document that describes in detail the construction of the product tested and found to meet UL's requirements. UL's field representatives use this as a guide when conducting their periodic examinations of UL-certified products in the factory.

Before UL's engineering staff will issue your testing report, you must agree to participate in UL's Follow-Up Services program. You indicate your willingness to participate by signing and returning the Follow-Up Services Agreement. Typically, this document is sent a few days after the applications are mailed.

If, for some reason, your product doesn't meet UL's requirements, you will receive a letter from UL describing the specific requirements your product did not meet. If you choose to modify the product and are interested in having it retested, you can contact the UL engineering staff who originally tested the product for any retesting or re-examination that

may be necessary.

If you have any questions about your test results, the interpretation of a requirement or any UL decision, the UL appeals procedure provides a method for your concerns to be heard by UL management without jeopardizing your relationship with UL. Just contact our engineering staff for more details.

Because the UL mark is initially a US mark, there are some variations on the above mark indicating compliance with standards in other markets, primarily the Canadian requirements. The following is a list of the various variations on the theme and what they indicate and the associated (modified signs)

The C-UL-US Mark
This Mark indicates compliance with both Canadian and U.S. requirements. The Mark is optional, but we encourage those manufacturers with products certified for both countries to use this new, combined Mark.

C-UL-US Classification
This classification marking is used for products going into the Canadian and U.S. marketplace. It shows that compliance with both Canadian and U.S. requirements for classified products has been met.

Component Recognition Service for Canada and the U.S.
The Mark may be used on components certified by UL and ULC to both Canadian and U.S. requirements.

The ULC Mark
The ULC Mark is nationally recognized for many specific product categories, including building materials and fire protection and suppression products.

The C-UL Mark
The products with this type of mark have been evaluated to Canadian safety requirements. You will see this type of Mark on appliances and computer equipment, vending machines, household burglar alarm systems, lighting fixtures, and many other types of products.

Canadian Classification
This classification marking is used for products intended for the Canadian marketplace. It shows that ULC has used Canadian standards to evaluate the product for specific

hazards or properties. Examples of C-UL Classified products include air filter units, firestop devices, certain types of roofing systems, and others.

Recognized Component Mark and Canadian Recognized Component Mark
These are marks consumers rarely see because they are specifically used on component parts that are part of a larger product or system. These components may have restrictions on their performance or may be incomplete in construction. The Component Recognition marking is found on a wide range of products, including some switches, power supplies, printed wiring boards, some kinds of industrial control equipment and thousands of other products. Products intended for Canada carry the Recognized Component mark "C."

UL Listing Mark
This is America's best known and most respected conformity assessment mark. This Mark is seen commonly on appliances and computer equipment, furnaces and heaters, fuses, electrical panelboards, smoke and carbon monoxide detectors, fire extinguishers and sprinkler systems, personal flotation devices like life jackets and life preservers, bullet resistant glass, and thousands of other products.

U.S. Classification Mark
This mark appears on products, which UL has evaluated. Products carrying this mark have been evaluated for specific properties, a limited range of hazards, or suitability for use under limited or special conditions. Typically, products Classified by UL fall into the general categories of building materials and industrial equipment. Examples of types of equipment Classified by UL include immersion suits, fire doors, protective gear for fire fighters and industrial trucks.

EPH Product Mark
The UL EPH mark appear on products that have been evaluated to Environmental and Public Health Standards. The "Classified" version is used for products complying with ANSI/NSF Standards and other food equipment hygiene codes and requirements. Examples include Food Service and Meat and Poultry Plant Equipment and Drinking Water Additives. The "Listed" version is typically used for products complying with UL's own published EPH Standards for Safety.

Supplemental Food Service Product Mark
The supplemental UL Food Service Product Mark is optional. This mark may only be used as a supplement to the EPH Mark appearing elsewhere on the food service equipment. Equipment bearing the Mark is not limited to electrical products, but also includes gas appliances and non-powered equipment. These products are commonly found in commercial food establishments, institutional food services and other locations.

Field Evaluated Product Mark
A Field Evaluated Product Mark is applied to a product that is thoroughly evaluated in the field instead of UL's laboratories or the manufacturer's facility. If a product has been significantly modified since its manufacture or the product doesn't bear any third-party certification mark, a building owner, a regulatory authority,or anyone else directly involved with the product can request that UL conduct tests in the field on the specific piece of equipment. Products that meet appropriate safety requirements are labeled with a tamper-resistant Field Evaluated Product Mark.

Facility Registration Mark
The UL Registered Firm Mark is a mark you will never see on a product. Instead, it indicates that a particular facility has passed UL's evaluation to quality assurance standards and is used in promotion and marketing by companies with quality assessment programs audited by UL. The standards UL uses are the ISO 9000 series of quality assurance standards; QS-9000, the quality standards developed by the Big Three U.S.automakers for their suppliers; and ISO 14001, the standard covering environmental management systems.

Marine Mark
The UL Marine mark appears on products that have been evaluated specifically for marine use. Products bearing this Mark have been evaluated to UL's published Marine Safety Standards and other applicable standards and codes. These requirements address hazards that can occur as a result of exposure to harsh marine environments such as vibration, shock (impact), ignition protection, water ingress and salt spray corrosion common on pleasure craft and boats. Examples of the type of equipment suitable for the UL Marine Mark include alternators, battery chargers/power inverters, navigation lights, and fuel tanks, filters and

pumps.

AR-UL Mark
Used in conjunction with the mandatory "S" Mark of Argentina's National Office of Internal Commerce (Direccion Nacional de Comercio Interior, or DNCI) the "AR-UL" Mark Resolution 92/98. Most electrical and electronic products entering Argentina will have to display the "S" Mark adjacent to the Mark of an accredited Recognized third-party certification organization such as UL de Argentina, S.R.L.

UL Application Procedure PRINT

A typical product testing routine will involve several steps:

Source: **www.ul.com** , **www.ul-asia.com** and **www.ulc.ca**

II. Japan's Voluntary Control Council for Interference by Information Technology Equipment

I. VCCI:

Voluntary Control Council for Interference by Information Technology Equipment

- **V**oluntary **C**ontrol **C**ouncil for **I**nterference by Information Technology Equipment.
- Controls for electromagnetic emissions from information technology equipment such as computers, telecommunication products and electronic office products so that they do not disrupt other electronic products, including radio and television.
- Although the VCCI Mark is voluntary in Japan, most of the information technology equipment sold in Japan show the VCCI mark.
- The VCCI applies to the information technology equipment (ITE) to be shipped for the domestic market in Japan.
- VCCI classifies ITE equipment into two categories:
  - Class B ITE
  - Class A ITE
- Class B ITE: covers disturbance limits for equipment used primarily for use in the domestic environment (residences)
- Examples of products covered are portable equipment powered by built-in batteries, telecommunication terminal equipment wired by telecommunication networks, personal computers or work processors, faxes, etc.

- Class A ITE: equipment that satisfies class A disturbances but not class B ITE disturbance limits.

- Confirmation of compliance process:

1. Members verify that ITE products conform
2. Members perform conformity verification tests using measurement facilities which are accredited and registered by VCCI.
3. Members submit 'the conformity Verification Report' to the Council. (in two weeks the report is accepted).
4. For class A, products will be labeled with

for class B, the following logo will appear on a visible location on the product:

5. The Council conducts sampling tests for checking conformity. Tests are done in accordance with “Regulations for Market Sampling Test”. Members have an obligation to comply with these tests and pay expenses for tests and other related expenses incurred.
6. Limits on disturbances for 2 classes are available on the website.

II. **PSE Mark - DENAN**

In addition to the voluntary VCCI, Japan has legislated laws, which in many cases require compliance with safety requirements and certificates issued by an accredited third-party. The main law which serves to cover the electrical safety requirements of products marketed in Japan is the DENAN (DENKI YOHIN ANZEN HO), which replaced the DENTORI (DENKI YOHIN TORISHIMARI HO) as of April 1, 2001. An overview of the new and old regulations follows.

Japan's Ministry of Economy, Trade and Industry (METI) administers the Electrical Appliance and Material Safety Law (DENAN). It divides regulated products into two groups, Specified Products (SPs) and Non-Specified Products (NSPs). The grouping of the product sets the conformity assessment path available for the product and mandates the application of either the Specified or Non-Specified PSE Marks as shown. DENAN requires all SPs and NSPs to be in compliance with safety and Electromagnetic Interference (EMI) requirements. Applicable standards are traditional DENAN Technical Requirements or IEC-based standards.

III. The CE mark

- A CE Marking is a European marking of conformity that indicates that a product complies with the essential requirements of the applicable European laws or Directives with respect to safety, health, environment, and consumer protection. Generally, this conformity to the applicable directives is done through self-declaration.
- The CE Marking is required on products in the 18 countries of the European Economic Area (EEA). The manufacturer or his authorized representative established in the EEA is responsible for affixing the CE Marking to his product. The CE Marking provides a means for a manufacturer to demonstrate that his product complies with a common set of laws required by all of the countries in the EEA to allow free movement of trade within the EEA countries.
- The CE Marking:
  - Is not a safety certification mark,
  - Is generally based on self-declaration rather than third party certification, and
  - Does not demonstrate compliance to North American safety standards or installation Codes.
- For most products sold in the EU, the use of the CE Marking and a Declaration of Conformity are mandatory.
- As stated in the European Commission's Guide to the Implementation of Community Harmonization Directives:

  "Manufacturers are responsible for ensuring that the products they place on the market meet all relevant regulations. Where these regulations do not require mandatory certification, manufacturers often seek voluntary certification to assure themselves that their products do meet the requirements set by law."

- The Main Goals of the CE Marking are to:

indicate a product's conformity with the "essential requirements" of the directives
allow products to be "placed on the market"
ensure the "free movement of goods"
allow the "withdrawal of non-conforming products" by customs and enforcement authorities

- CE Mark is a mandatory mark for many (estimated at around 70%) of the products sold on the European Union (EU) market and it is often referred as the "Trade Passport to Europe" for non-EU products.
- In general, CE Marking is most probably required if you want to sell, to the 15 European Union (EU) and 3 European Free trade Association (EFTA) member states, the following 23 groups of products:

1. **Air Traffic Management Equipment & Systems**
   The "air-traffic-management equipment and systems" here includes, in particular:
   - communications systems,
   - surveillance systems,
   - systems providing automated assistance to air-traffic control, and
   - navigation systems.

2. **Appliances Burning Gaseous Fuels (AppliGas)**
   The "appliances burning gaseous fuels" used for cooking, heating, hot water production, refrigeration, lighting or washing and having, where applicable, a normal **water temperature not exceeding 105 gC**. Forced draught burners and heating bodies to be equipped with such burners will also be considered as appliances.
   The "gaseous fuel" means any fuel which is in a gaseous state at a temperature of 15 gC under a pressure of 1 bar.

3. **Cableway Installations to Carry Persons**
   The "cableway installations designed to carry persons" shall mean installations made up of several components, designed, manufactured, assembled and put into service with the object of carrying persons.
   These on-site installations are used for the carriage of persons in vehicles or by towing devices, whereby the suspension and/or traction is provided by cables positioned along the line of travel.

4. **Low Voltage Electrical Equipment**
   The "Electrical Equipment" means **any** equipment designed for use with a voltage rating of between **50 and 1000 V** for alternating current (**A.C.**) and between **75 and 1500 V** for direct current (**D.C.**). Therefore, it is called often "Low Voltage Electrical Equipment" which includes the vast majority of electrical equipment in everyday use.

5. **Construction Products**
   The "construction product" means any product which is produced for incorporation in a permanent manner in construction works, including both buildings and civil engineering works.

6. **Equipment and Protective Systems for Used in Potentially Explosive Atmospheres (Atex)**
   - **Equipment** means machines, apparatus, fixed or mobile devices, control components and instrumentation thereof and detection or prevention systems which, separately or jointly, are intended for the generation, transfer, storage, measurement, control and conversion of energy for the processing of material and which are capable of causing an explosion through their own potential sources of ignition.

- **Protective systems** means design units which are intended to halt incipient explosions immediately and/or to limit the effective range of explosion flames and explosion pressures. Protective systems may be integrated into equipment or separately placed on the market for use as autonomous systems.
- **Components** means any item essential to the safe functioning of equipment and protective systems but with no autonomous function. Explosive atmospheres Mixture with air, under atmospheric conditions, of flammable substances in the form of gases, vapours, mists or dusts in which, after ignition has occurred, combustion spreads to the entire unburned mixture.

Potentially explosive atmosphere means an atmosphere which could become explosive due to local and operational conditions. .

7. **Explosives for Civil Uses**
   The "Explosives" here shall mean the materials and articles considered to be such in the **United Nations recommendations** on the transport of dangerous goods and falling within **Class 1** of those recommendations.

8. **Hot Water Boilers**
   The "hot-water boilers" here means a boiler fired by liquid or gaseous fuels with a rated output of between **4 kW** and **400 kW** (including 4 kW and 400 kW).

9. **Household Refrigerators & Freezers**

10. **Lift**
    The "lift" here means an appliance serving specific levels, having a car moving along guides which are rigid and inclined at an angle of more than 15 degrees to the horizontal and intended for the transport of:
    - persons,
    - persons and goods,
    - goods alone if the car is accessible, that is to say, a person may enter it without difficulty, and fitted with controls situated inside the car or within reach of a person inside.

11. **Machinery**
    the "machinery" means:
    - an assembly of linked parts or components, at least one of which moves, with the appropriate actuators, control and power circuits, etc., joined together for a specific application, in particular for the processing, treatment, moving or packaging of a material,
    - an assembly of machines which, in order to achieve the same end, are arranged and controlled so that they function as an integral whole,
    - interchangeable equipment modifying the function of a machine, which is placed on the market for the purpose of being assembled with a machine or a series of different machines or with a tractor by the operator himself in so far as this equipment is not a spare part or a tool.
12. **Marine Equipment**
    The "Marine Equipment" here means items listed in Directive 96/98/ec Annexes A.1 and A.2 which must be placed on board a ship for use in order to comply with international

instruments or are voluntarily placed on board for use, and for which the approval of the flag State administration is required according to international instruments.

13. **Medical Devices**

A "Medical Device" is defined in Directive (93/42/EEC) as: any instrument, apparatus, appliance, material or other article, whether used alone or in combination, including the software necessary for the proper application, intended by the manufacturer to be used for human beings for the purpose of :

- diagnosis, prevention, monitoring, treatment or alleviation of a disease, an injury or a handicap.
- investigation, replacement or modification of the anatomy or of a physiological process.
- control of conception

and which does not achieve its principal intended action in or on the human body by pharmacological, immunological or metabolic means, but which may be assisted by such means.

14. **Active Implantable Medical Devices**

The "active medical device" means any medical device relying for its functioning on a source of electrical energy or any source of power other than that directly generated by the human body or gravity

The "active implantable medical device" means any active medical device which is intended to be totally or partially introduced, surgically or medically, into the human body or by medical intervention into a natural orifice, and which is intended to remain after the procedure.

15. **In Vitro Diagnostic Medical Devices**

The "in vitro diagnostic medical device" means any medical device which is a reagent, reagent product, calibrator, control material, kit, instrument, apparatus, equipment, or system, whether used alone or in combination, intended by the manufacturer to be used in vitro for the examination of specimens, including blood and tissue donations, derived from the human body, solely or principally for the purpose of providing information:

- concerning a physiological or pathological state, or
- concerning a congenital abnormality, or
- to determine the safety and compatibility with potential recipients, or
- to monitor therapeutic measures..

16. **Non-automatic Weighing Instruments**

A "Weighing Instrument" is defined as a measuring instrument serving to determine the mass of a body by using the action of gravity on that body. A weighing instrument may also serve to determine other mass-related magnitudes, quantities, parameters or characteristics.

A "non-automatic weighing instrument" is defined as a weighing instrument requiring the intervention of an operator during weighing.

17. **Radio Equipment & Telecommunications Terminal Equipment (R&TTE)**

18. **Personal Protective Equipment (PPE)**
    The "personal protective equipment" means any device or appliance designed to be worn or held by an individual for protection against one or more health and safety hazards.

19. **Simple Pressure Vessels**
    The "simple pressure vessel" means any welded vessel subjected to an internal gauge pressure greater than **0,5 bar** which is intended to contain air or nitrogen and which is not intended to be fired.

20. **Pressure Equipment**
    The "Pressure Equipment" means vessels, piping, safety accessories and pressure accessories.
    Where applicable, pressure equipment includes elements attached to pressurized parts, such as flanges, nozzles, couplings, supports, lifting lugs, etc.
    'Vessel` means a housing designed and built to contain fluids under pressure including its direct attachments up to the coupling point connecting it to other equipment. A vessel may be composed of more than one chamber.
    'Piping` means piping components intended for the transport of fluids, when connected together for integration into a pressure system. Piping includes in particular a pipe or system of pipes, tubing, fittings, expansion joints, hoses, or other pressure-bearing components as appropriate. Heat exchangers consisting of pipes for the purpose of cooling or heating air shall be considered as piping.
    'Safety accessories` means devices designed to protect pressure equipment against the allowable limits being exceeded. Such devices include:
    - devices for direct pressure limitation, such as safety valves, bursting disc safety devices, buckling rods, controlled safety pressure relief systems (CSPRS), and
    - limiting devices, which either activate the means for correction or provide for shutdown or shutdown and lockout, such as pressure switches or temperature switches or fluid level switches and 'safety related measurement control and regulation (SRMCR)` devices.
    'Pressure accessories` means devices with an operational function and having pressure-bearing housings.
    'Assemblies` means several pieces of pressure equipment assembled by a manufacturer to constitute an integrated and functional whole.

21. **Recreational Craft**
    The "Recreational craft" means any boat of any type, regardless of the means of propulsion, from **2,5 to 24 m hull length**, measured according to the appropriate harmonized standards intended for sports and leisure purposes.

22. **Toys**
    A "toy" shall mean any product or material designed or clearly intended for use in play by children of less than 14 years of age.

23. **Trans-European Conventional Rail System**
    The "Trans-European Conventional Rail system" means the structure composed of lines and fixed installations, of the trans-European transport network, built or upgraded for conventional rail transport and combined rail transport, plus the rolling stock designed to travel on that infrastructure.

- **How Do EC Directives work:**
  Directives harmonize a variety of existing practices, preserve the different legal traditions and settle constraints for further developments. Directives are published in the Official Journal (OJ) of the European Economic Community (EEC). Each Directive is characterized by its title, its date of adoption and its date of publication in the Official Journal.

  Within the text of each Directive is the date on which the Directive becomes effective. The effective date identifies the date when compliance with the Directive is mandatory. In addition, Directives also identify an implementation date. This date identifies when use of the Directive can begin.

  During the time period from the implementation date to the effective date, the manufacturer is normally allowed the option of meeting either the Directive or the national requirements that existed prior to implementation of the Directive. This time period is known as the transition period.

- **Old and New Approach Directives**

In 1985, after the advent of the Global Approach, the EC established a uniform marking system known as the CE Marking system. CE requirements are specified in the "New Approach" Directives. Directives written prior to the Global Approach, which did not take the CE Marking into account, are known as "Old Approach" Directives.

The CE Marking is applied to products that comply with all applicable Directives, one or more of which must be a "New Approach" Directive. If more than one relevant "New Approach" Directive is in its transition period, application of the CE Marking implies compliance with only those Directives that the manufacturer has chosen to apply.

Directives that apply to particular products are the following:((I am not sure if these are ALL the directives. Check)

No./Code of Directive	Title of Directive
73/23/EEC	Low voltage
87/404/EEC	Simple pressure vessels
88/378/EEC	Safety of toys
89/336/EEC	Electromagnetic compatibility
89/686/EEC	Personal protective equipment
90/384/EEC	Non-automatic weighing instruments
90/385/EEC	Active implantable medical devices
90/396/EEC	Appliances burning gaseous fuels
92/42/EEC	Hot-water boilers

93/15/EEC	Explosives for civil uses
93/42/EEC	Medical devices
94/9/EC	Equipment and protective systems intended for use in potentially explosive atmospheres
94/25/EC	Recreational craft
95/16/EC	Lifts
96/48/EC	Interoperability of the Trans-European high-speed rail system
96/98/EC	Marine equipment
97/23/EC	Pressure equipment
98/37/EC	Machinery
98/79/EC	In vitro diagnostic medical devices
99/5/EC	Radio and telecommunications terminal equipment
99/36/EC	Transportable pressure equipment
2000/14/EC	Noise emission in the environment by equipment for use outdoors

Application of the CE Marking verifies compliance with both design and production quality requirements. This is different from the requirements of the "Old Approach" Directives which only dealt with design requirements.

For hazardous locations equipment, the original version of the Potentially Explosive Atmospheres Directive (76/11/EEC) is an example of an "Old Approach" Directive. The revised Potentially Explosive Atmospheres Directive or ATEX Directive (94/9/EC) is an example of a "New Approach" Directive.

- **Essential requirements and European Norm (EN) Standards**
  Each Directive provides a set of "essential requirements." These essential requirements relate to product safety and call for a minimum level of protection against injury to persons or damage to property; however, they do not identify specific design criteria.

  Because essential requirements are general in nature, the European Union is continually developing harmonized standards known as European Norm (EN) standards. These EN standards are issued by the European Committee for Standardization (CEN) or jointly by CEN and the European Committee for Electrotechnical Standardization (CENELEC). Each EN standard defines criteria for meeting essential requirements.
- **Authorized representative:** One of the most common ways, which is preferred by many EU importers who are neither specialized in the complicated CE Marking process nor willing to take risk, is that the manufacturer designates an authorized representative in the EU member states who will take care of the CE Marking issue therefore the importers and/or distributors can focus on the marketing and

sales of the products. The manufacturer may need only one Authorized Representative in EU whereas may have many importers and/or distributors.

The Authorized Representative may in some cases register the product(s) in the EU member states and thus obtain a **Certificate of Registration**. The Product Certificate of Registration for CE Marking obtained from one EU member state is valid for the entire EU market, , i.e. 15 countries. (See attached sample Certification for a product made by a non-EU manufacturer).

Table 1a: Notified bodies per country

EU 15		**EFTA**	
Country	**N° bodies**	**Country**	**N° bodies**
Austria	32	Iceland	2
Belgium	19	Liechtenstein	0
Denmark	22	Norway	14
Finland	15	**EFTA Total**	**16**
France	75	**MRA - PECA**	
Germany	204	Australia	5
Greece	14	United States	13
Ireland	4	Czech Republic	13
Italy	179	Hungary	4
Luxembourg	5	**MRA – PECA Total**	**35**
Netherlands	30		
Portugal	21		
Spain	48		
Sweden	44		
United Kingdom	206		
EU 15 Total	**918**		

Table 1b: Notified bodies per directive

Directive	N° bodies	Directive	N° bodies
87/404/EEC Simple pressure vessels	75	94/25/EC Recreational craft	21
88/378/EEC Toys	54	94/9/EC Potentially explosive atmospheres	27
89/106/EEC Construction products	151	95/16/EC Lifts	124
89/336/EEC Electromagnetic compatibility	35	96/48/EC High-speed rail systems	11
89/686/EEC Personal protective equipment	96	96/98/EC Marine equipment	27
90/384/EEC Non-automatic weighing instruments	321	97/23/EC Pressure equipment	58
90/385/EEC Active implantable medical devices	18	98/37/EC Machinery	135
90/396/EEC Gas appliances	35	98/79/EC *In vitro* diagnostic medical devices	14
92/42/EEC Hot water boilers	37	99/36/EC Transportable pressure equipment	43
93/15/EEC Civil explosives	6	99/5/EC Radio and telecommunications terminal equipment	40
93/42/EEC Medical devices	60	2000/14/EC Noise from equipment for outdoor use	7

Note: Information up to 1.8.2001. Some bodies are notified under more than one directive. The total number of bodies in Table 1a (listed by Member State) is therefore lower than the total number of bodies in Table 1b (listed by directives).

- **Council Decision 93/465/EEC:** concerns the modules for the various phases of the conformity assessment procedures and the rules for the affixing and use of the CD conformity marking, which are intended to be used in the technical harmonization directives.

  Article 1

  1. The procedures for conformity assessment which are to be used in the technical harmonization directives relating to the marketing of industrial products will be chosen from among the Modules listed in the Annex and in accordance with the criteria set out in this Decision and in the general guidelines in the Annex.
  These procedures may only depart from the modules when the specific circumstances of a particular sector or directive so warrant. Such departures from the modules must be limited in extent and must be explicitly justified in the relevant directive.
  2. This Decision lays down rules for affixing the CE conformity marking provided for in Community legislation concerning the design, manufacture, placing on the market, entry into service or use of industrial products.
  3. The Commission shall report periodically on the functioning of this Decision, and on whether conformity assessment and CE marking procedures are working satisfactorily or need to be modified.

  Module A: internal production control
  Module Aa: intervention of a Notified Body
  Module B: EC type-examination
  Module C: conformity to type
  Module D: production quality assurance
  Module E: product quality assurance
  Module F: product verification
  Module G: unit verification
  Module H: full quality assurance

(Attached to this document is an excerpt from the Conformity Assessment Procedures and CE Marking in The Technical Harmonization Directives.)

- **How to obtain CE Marking for a product?**

There are a series of steps outlined below. Depending upon the product in question and the nature of the risks it presents:

1. Determine if any directives apply to your product. If more than one applies you will have to comply with all of them.
2. Determine the extent to which your product complies with the essential requirements for design and manufacturing in the applicable directive(s).
3. Choose the conformity assessment procedure from the options (modules) called out by the directive for your product. There are several modules available for the Conformity Assessment Procedures as listed above.
4. The directives often use a series of questions about the nature of your product to classify the level of risk and refer to a chart called **"Conformity Assessment Procedures"**. The chart includes all of the acceptable options available to a manufacturer to certify their product and affix the CE Marking.

- **Minimal Risk:** Options for products with minimal risk include self certification where the manufacturer prepares a Declaration of Conformity and affixes the CE Marking to their own product.
- **Greater Risks:** Many directives require products/systems with greater risks to be independently certified; this must be done by a "Notified Body". This is an organization that has been nominated by a Member Government and has been notified by the European Commission. Notified bodies serve as independent test labs and perform the steps called out by directives. They must have the necessary qualifications to meet the testing requirements set forth in the directives. Notified bodies may be a private sector organization or a government agency. Manufacturers may choose a notified body in any member state of the European Union. Lists of notified bodies are published by the European Commission in the *Official Journal of the European Communities.*
- **If the product needs to be certified by a Notified Body**, then the steps will be as follows:

    1. The producer/importer selects the applicable product standards and test methods for his/her product and selects a Notified Body.
    2. Establish an Authorized Representative in the European Union for the product.

    Some directives require that a manufacturer designate in the European Union an authorized representative to produce Technical Documentation (or sometimes called Technical File) in a timely fashion when called upon

to do so. The CE Marking itself is not meant to provide details about the product to Surveillance Authorities.

Technical Documentation (Technical File): The directives require for many products that a Technical Documentation (Technical File) be prepared by the manufacturer. The Technical Documentation (Technical File) holds information that verifies that the testing was conducted properly and that the product complies with applicable standards.

3. Prepare a **Declaration of Conformity.**
The Declaration of Conformity must contain information adequate for tracing the product back to the manufacturer or the authorized representative in the European Union. It may include a list the directives and standards that your product conforms to, product identification, the manufacturer's name, address and signature.

4. Register the product in EU:
Many products, for instance, Class I Medical Devices, are required to be registered in the EU and, if proved, get a Certificate of Registration. Without this Certificate of Registration, the products are NOT allowed to be affixed with the CE Marking and be placed on the market.

5. Affix the CE Marking to the product.
There are specific rules to adhere to for the CE Marking. These rules address the size and location of the Marking; affixing the CE Marking to products, packaging and material or documents shipped with the product; and specific limitations on when and who is permitted to affix the CE Marking.

- **Who enforces the requirement for CE Marking?**

  - Each member state of the European Union (EU) is bound by the **General Product Safety Directive** to adopt laws, regulations and administrative provisions to ensure that products placed on the market are safe. **Each country has its own way of handling enforcement.**
  - Many have added staffs specifically to conduct spot checks against implemented directives and respond to complaints. Countries have also set in place a combination of Return-to-Origin procedures, financial penalties, etc.
  - EU legislations make EU importers liable for the products they import, including the machinery they provide to their employees for work. Many non-EU exporters are finding that no matter how interested a prospective EU importer may be in the product, the importer will NOT risk importing non-conforming products (i.e. the products without CE Marking) which, in case of accident, may generate legal action against them.

COUNCIL DIRECTIVE 93/68/EEC of 22 July 1993
THE COUNCIL OF THE EUROPEAN COMMUNITIES, has adopted this directive:

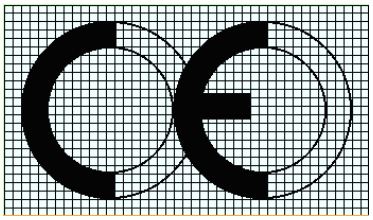
From Article 2 to Article 13 of this Directive

Detailed amendments were given, throughout from Article 2 to Article 13, to the 12 Council Directives listed in Article 1. Amendments varied from Directive to Directive. But, in general, the following basic points were included in the amendments to almost every Directive:

1. Throughout the text, the term **EC mark** was replaced by **CE marking**;
2. Member States shall presume that products bearing the CE marking comply with all the provisions of this Directive, including the **conformity assessment procedures**;
3. (a) Where the products are subject to other Directives covering other aspects and which also provide for the affixing of the CE marking, the latter shall indicate that the products in question are also presumed to conform to the provisions of those other Directives.
   (b) However, where one or more of those Directives allow the manufacturer, during a transitional period, to choose which arrangements to apply, the CE marking shall indicate conformity only to the Directives applied by the manufacturer. In this case, particulars of the Directives applied, as published in the Official Journal of the European Communities, must be given in the documents, notices or instructions required by the Directives and accompanying such products;
4. **EC verification**
   4.1 EC verification is the procedure whereby a manufacturer or his authorized representative established within the Community ensures and declares that the products are in conformity to the type described in the EC type-examination certificate or with the design and manufacturing schedule referred to in Annex II section 3 having received a certificate of adequacy;
   4.2 The manufacturer shall take all the necessary measures for the manufacturing process to ensure that the products conform to the type described in the EC type-examination certificate or to the design and manufacturing schedule referred to in Annex II section 3. The manufacturer or his authorized representative established within the Community shall affix the CE marking to each product and draw up a **declaration of conformity**;
   4.3 The approved body shall carry out the appropriate examinations and tests in order to check the conformity of the products with the requirements of this Directive by examination and testing of products;
   4.4 The manufacturer or his authorized representative must be able to supply on request the approved body's certificates of conformity;
5. (a) where a Member State establishes that the CE marking has been affixed unduly, the manufacturer or his authorized representative established within the Community shall be obliged to make the product conform as regards the provisions concerning the CE marking and to end the infringement under the conditions imposed by the Member State;

(b) where **non-conformity** continues, the Member State must take all appropriate measures to **restrict or prohibit** the placing on the market of the product in question or to ensure that it is withdrawn from the market ;

6. The CE conformity marking shall consist of the initials "CE " in the form shown below;



7. If the CE marking is reduced or enlarged the proportions given in the above graduated drawing must be respected.
   - The various components of the CE marking must have substantially the same vertical dimension, which may **not be less than 5 mm**;
8. The affixing of markings on the products which are likely to deceive third parties as to the meaning and form of the CE marking shall be prohibited. Any other marking may be affixed to the products or the data plate provided that the visibility and legibility of the CE marking is not thereby reduced;
9. **EC declaration of conformity**
   The EC declaration of conformity must contain certain elements;
10. The manufacturer must establish the **technical documentation** and he or his authorized representative established within the Community must **keep it on Community territory** at the **disposal of** the relevant national authorities for inspection purposes for a certain period after the last product has been manufactured;
    Where neither the manufacturer nor his authorized representative is established within the Community, this obligation is the responsibility of the person who places the products on the Community market, e.g. the importer;
11. **Technical documentation** must enable the conformity of the product to the requirements of this Directive to be assessed. It must, as far as relevant for such assessment, cover the design, manufacture and operation of the product. It must include certain information;

Article 14

1. Member States shall adopt and publish the laws, regulations and administrative provisions necessary to comply with this Directive by 1 July 1994.
They shall apply these provisions from **1 January 1995**.
2. Until **1 January 1997** Member States shall allow the placing on the market and the bringing into service of products which comply with the marking arrangements in force before 1 January 1995.

- It does not appear the CE mark can be obtained for other countries' products that ARE NOT destined for the EU market. There are, however, mutual recognition between the EU and the US, Canada, Israel, Australia, New Zealand and Japan. (See table below).

AGREEMENTS on mutual recognition of conformity assessment between European Union and Other countries		
Agreement between EU and United States (173pages)	Pub. 1999	
Agreement between EU and United States, amendment (24pages)	Pub. 2000	
Agreement between EU and Canada (137pages)	Pub. 1998	
Agreement between EU and Australia	Pub. 1998	
Agreement between EU and New Zealand	Pub. 1998	
Agreement between EU and Israel	Pub. 1999	
Agreement between EU and Japan 2001 proposal	Pub. 2001	

What is proposed by Conte

IV. THE CSA Mark

(CANADIAN STANDARDS ASSOCIATION)

The Canadian Standards Association is a not-for-profit membership-based association serving business, industry, government and consumers in Canada and the global marketplace.

Thousands of companies rely on CSA International for product testing for the U.S. and Canada-including American Water Heater, Apple, Bata, CFM Majestic, Delta Faucet, GE, Hewlett-Packard, Hubbell Lighting, Hobart, IBM, Intermatic, IPEX, Kaufman, Lennox Industries, Mitsubishi, Moen, North Safety, Sanyo, Whirlpool, and others.

Product areas in which CSA certifies for conformity assessment include: pluming products, electrical appliances, gas appliances, components for gas and electrical equipment, polymeric material component acceptance, control regulating and signal equipment, power supplies, hazardous location equipment, elevator equipment, building materials and structural equipment, concrete products, heating and cooling equipment, industrial electrical products, lighting equipment and products, occupational health and sports safety, home and commercial entertainment products, wire & cable equipment, IT & telecom equipment, wiring devices and related hardware, health care equipment, forest products marking, transportation and carrier safety management systems, energy efficiency verification service, products & components CSA certificates to US standards and adhesive type nameplates.

The CSA Mark appears on over one billion products worldwide.

Certification marks for Canada

For Canada: A CSA mark on its own, without indicators, means that the product is certified primarily for the Canadian market, to the applicable Canadian standards. If a product has features from more than one area, (e.g.. electrical equipment with fuel burning features), the mark indicates compliance to all applicable Standards.

For Canada and the U.S.: A CSA mark with the indicators "C" and "US" or "NRTL/C" means that the product is certified for both the U.S. and Canadian markets, to the applicable American and Canadian standards. If a product has features from more than one area, (e.g.. electrical equipment with fuel burning features), the mark indicates compliance to all applicable Standards.

C US

NRTL/C

For gas products in Canada: The CSA Blue Flame indicates the product is certified to applicable Canadian standards for appliances using gas or other petroleum fuel. For details, see the **Gas Appliances Certification Program**. If a gas product has electrical features, the Mark also indicates compliance to the applicable electrical Standard(s).

For electrical products in Canada: The energy efficiency verification (EEV) marking means that a product has been verified according to CSA standards for energy efficiency and performance. For details see the **Energy Efficiency Verification Service**.

For forest products in Canada: This series of markings indicates that the product (or a percentage of the product or product line) comes from a source that complies with Canada's National Standard for Sustainable Forest Management (CAN/CSA Z809). For details see the **Sustainable Forest Management Program**.

For carrier safety management in Canada: This marking indicates that a carrier has instituted and documented a safety management system that controls the safe movement of vehicles and goods. For details see the **Carrier Safety Management System Program**.

Certification marks for the U.S.

For the U.S.: A CSA mark with the indicator "US" or "NRTL" means that the product is certified for the U.S. market to the applicable U.S. standards. If a product has features from more than one area, (e.g.. electrical equipment with fuel burning features), the mark indicates compliance to all applicable Standards.

For the U.S. and Canada: A CSA mark with the indicators "C" and "US" or "NRTL/C" means that the product is certified for both the U.S. and Canadian markets, to the applicable U.S. and Canadian standards. If a product has features from more than one area, (e.g.. electrical equipment with fuel burning features), the mark indicates compliance to all applicable Standards.

For gas products in the U.S.: The CSA Blue Star indicates the product is certified to applicable U.S. standards for appliances using gas or other petroleum fuel. For details, see the **Gas Appliances Certification Program**. If a gas product has electrical features, the Mark also indicates compliance to the applicable electrical Standard(s).

Steps for CSA product certification

Step 1: Start the application process early

They will ask for:

- A marketing brochure or data sheet describing the product (what it is, what it does, and what it looks like)
- A photograph of the product
- A list of all components or materials used in the product, including the manufacturers' names, model or catalogue designations, electrical ratings (if applicable), and CSA file numbers (if applicable)
- Indication of any other approvals either already received or being pursued.
- Any alternate materials or components that might be used in manufacturing
- Schematic and/or wiring diagrams, if this is an electrical or electronic product
- The model or catalogue numbers to be covered by this certification, and the similarities and differences between models
- The full name and address of all facilities where the product will be assembled, and a contact person for each facility.

CSA will respond promptly to your submission with a reference number, fixed fee, schedule, sampling requirements, and the name of the CSA staff member assigned to your project (the Project Holder). Fees will be submitted prior to testing.

Step 2: Provide samples and test data

The next step involves providing CSA with a sample of the product you want certified.

Please label all product samples with your project reference number to ensure prompt service. In some cases it might be more practical for the Project Holder to visit your facilities-for example, if the product is very large or the production run is limited. If your product has already been tested by an accredited testing organization, you can include the report containing those test results now.

Step 3: Respond to the Findings letter

Once your product has been tested, you will receive a finding letter. The Findings letter tells you the results of the test and what to do next to obtain certification. This letter may ask you to respond to specific items, or to alter the product to meet certain requirements. If your product is ready for certification, the Findings letter will include a proposed Certification Record, and ask you to confirm this as the published record of the product.

Step 4: Receive final certification

If the product meets the requirements, CSA International will issue a Certification Report and Certificate of Compliance. You may now use the CSA Mark on the certified product upon signing a service agreement with CSA International.

Source: **www.csa-international.org**

V. International Electrotechnical Commission (IEC)

I. CB-Scheme (electrical and electronic equipment)

- The CB Scheme, established by the International Electrotechnical Committee for Conformity Testing to Standards for Electrical Equipment (IECEE), provides a means for the mutual acceptance of test reports among participating safety certification organizations in certain product categories.
- The CB Scheme is an international network made up of product certification organizations in more than 43 countries throughout North and South America, Europe, Asia, Australia and Africa. Each participating country has one or more organizations accepted by the IECEE as National Certification Bodies (NCBs).
- The CB scheme is based on the principle of mutual recognition by means of certification through the use of internationally accepted standards.
- The CB scheme facilitates the international exchange and acceptance of product safety results among participating lab, NCBs.
- The CB-scheme is designed and established by the International Electrotechnical Commission (IEC).
- Product categories where there are IEC standards include batteries, cables and cords, switches and automatic controls for household appliances, household and similar installation accessories and connection devices, lighting, measuring instruments, IT and office equipment, low voltage – high power switching equipment, safety transformers and similar equipment, portable tools, and electronic and entertainment products.
- Examples of IEC standards against which products are tested under the CB scheme are the following:

The Process for national and international certification of a CB product:

- Manufacturers only need a single CB Test Report and Certificate to prove their products comply with relevant international standard. When national standards are not completely harmonized with the IEC standards, declared national differences will be considered.
- Manufacturers who use the CB scheme to obtain international product certification can significantly reduce the cost, effort and time involved in obtaining these approvals. The process of international certification is the following:

- Manufacturer submits product to NCB for testing
- NCB tests product for compliance to applicable standard(s)
- Manufacturer submits an application to the recognizing NCB in the target country
- CB Certificate and Test Report issued by NCB upon demonstrating compliance
- The manufacturer provides the recognizing NCB the CB Certificate, test report, relevant national differences and sample of product, if required.
- Recognizing NCB verifies that eh product and ensures that it complies with national differences of its country
- Recognizing NCB grants its own Certification.

II. IECEX:

Another scheme adopted by IEC is the IECEx scheme for facilitation of international trade in electrical equipment intended for use in explosive atmospheres (Ex equipment).

In addition to the preparation of International Standards, the IEC facilitates the operation of conformity assessment schemes for electrical safety CB Scheme, Explosion-protected electrical equipment IECEx, and IECQ for electronic components.

The aim of this scheme is to eliminate the need for multiple national certifications while preserving an appropriate level of safety.

A certificate of conformity may be obtained from any certification body accepted in the Scheme. The certificate will attest that the equipment design conforms to the relevant IEC Standard/s and that the product is manufactured under a quality plan assessed by an ExCB (Explosive Certification Body).

Manufacturers holding certificates of conformity may affix the IECEx Mark of conformity to equipment that they have verified complies with the certified design.

For countries where national standards are not yet identical to the IEC standards, a transitional period will be necessary. The transitional period, which could be different for different standards, is to allow for:

- the IEC Standards and the national Standards to be made identical, and
- national acceptance of IECEx Certificates of Conformity and the IECEx Mark of conformity.

IECEx scheme has 22 members, 12 accepted certification bodies and 13 Ex testing labs.

III. IECQ:

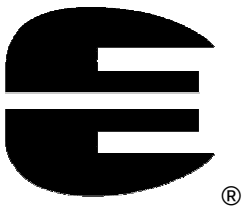
- The IECQ is a scheme developed by IEC for electronic components.
- The main purpose of the IECQ System is to assess the quality of an organization and production for participating countries according to the international specifications. IECQ qualified electronic components that are produced under IECQ product specification requirements in one member country and shipped to another member country need not undergo further testing.
- **How the IECQ system assures product quality and reliability:**
  After an organization has undergone certification the IECQ components it sells must have a Declaration of Conformity signed by the Designated Management Representative. Declaration of Conformity must meet the following basic conditions:

    - The product's Detail Specification must be approved by the National Standards Organization and must meet the IECQ Generic Specification and Sectional Specification.
    - Product tests including tests of electrical and mechanical characteristics, environment and reliability.
    - Product inspections and measurements shall be completed under the supervision of the Supervising Inspectorates.
    - Calibration of all instruments and equipment used for product tests are required to be traceable to national (or international) standards.

- The IECQ System covers 9 groups of components: passive components, active components, film and hybrid film integrated circuits, electromechanical components, electromagnetic components, electro-optic components, wires and cables, printed boards, and solar photovoltaics.

- Steps of IECQ certification are attached.

- The IECQ scheme has 18 national authorized institutions (members) and 11 supervisory inspectorates (certification bodies)



IEC Mark of Conformity for IECQ-CECC certified components

VI. TUV Rheinland Berlin Brandenburg

A TUV certified product is one that has passed certain tests carried out by TÜV Rheinland Berlin Brandenburg for, say, safety and quality. TÜV issues a certificate of the test findings. It certifies the product properties tested and specifies the norms which they were tested.

The sign above is posted on the product and on the TUV website, the product, manufacturer and standard against which the product was tested is identified. The product has a TUV certificate that attests to that.

The TUV sign as such provide the buyer wit a disinterested expert's independent judgment.

TÜV Rheinland Berlin Brandenburg principals include manufacturers from **75** countries. The product range is practically unlimited and extends from toys and sporting goods to IT equipment and complex industrial plants.

TÜV Rheinland Berlin Brandenburg first tests a representative product sample on the basis of the appropriate criteria. As a rule these tests are carried out in TÜV test laboratories. In exceptional cases, such as very large machinery, experts test the product on the manufacturer's premises.

To ensure that the certificate amounts to more than a mere snapshot, TÜV employees go on to monitor the manufacturer's production facilities at regular intervals and to check whether products manufactured there correspond to the sample tested. In this way, they can ensure that certified products continue deserve their certification.

Product Certificate –
A certificate issued to a company (holder) for a product complying to specified standards.

TUV Rheinland of North America evaluates, tests and certifies the safety and quality of products in product categories: from toys to state-of-the-art computer equipment and heavy industrial machinery. The following is a list of product categories that TUV tests.

Types of Products that TUV tests

- **Audio/Video**
- **Automotive**
- **Electrical Components**
- **Fuel Cells**
- **Household Appliances**
- **IT Equipment/Office Equipment/Ergonomics**

- **Lab Test & Measuring Equipment**
- **Laser/LED Devices**
- **Machinery**
- **Materials**
- **Medical Devices**
- **Office Equipment**
- **Pressure Equipment**
- **Recreational/Mechanical**
- **Telecom Equipment**
- **Wireless**

A norm is a standardized set of rules that includes a catalog of requirements. These requirements can refer to products, but they can also refer to processes. Standardization combines in a generally recognized document the wishes and suggestions made by all the relevant institutions, such as manufacturers, consumer associations, lawyers, research facilities, test and certification agencies.

TUV Approval schemes & testing services

- **ASME Approvals**
- **Bluetooth™**
- **CB Scheme**
- **CE Marking**
- **EMC Testing**
- **FCC & TCB Approvals**
- **Field Evaluations**
- **International Approvals**
- **Semi S2 & S8 Evaluations**
- **TUV Rheinland GS Mark**
- **US & Canada cTUVus**

Norms for processes and management systems

Norms for processes generally require certain activities or results. The objective is to ensure the efficacy of a process. The ISO 9001 quality management standard, for example, requires the manufacturer to ascertain and improve customer satisfaction, and with operating efficiency in mind practically all management norms require responsibilities to be defined precisely and to be documented.

The best-known management system norms are:

- Quality management on the basis of the ISO 9000 or 9000:2000 family of standards
- Environmental management to ISO 14001
- Health and safety management to OHSAS 18001
- Safety management to BS 7799-2
- Social accountability management on the basis of the SA 8000 "ethics norm"

On each certificate for a particular manufacturer and product the TUV certificate specifies the norm against which the product was tested. This ranges from CB scheme, to GS German mark, to TUV of America or TUV of Canada and others.

The certificate number and norm for product/manufacturer is available on the TUV website.

TUV Affiliates

North America
Canada
Mexico
USA

South America
Argentina
Brazil
Chile

Europe
Andorra
Belgium
Bulgaria
Czech Republic
France
Germany
Greece
Hungary
Ireland
Italy
Latvia
Luxembourg
Netherlands
Poland
Portugal
Romania
Russia
Spain (Catalonia)
Spain (Madrid)
Sweden

Africa
Egypt
Ghana
Morocco
South Africa
Tunisia

Asia
Bangladesh
China
India
Indonesia
Iran
Japan
Jordan
Korea
Pakistan
Philippines
Singapore
Taiwan
Thailand
United Arab Emirates
Vietnam

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