Piracy in electrical and electronic products

Anti-counterfeiting best practice and strategies

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Why fight product piracy

in electrotechnical products

Huge global business

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Counterfeiting and piracy have grown into a global business estimated to exceed USD 650 billion/year, with more than half of the products moving through international trade channels (2008).

Electrical goods: 2nd place now

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Counterfeit electrical and electronic products now occupy second place after pharmaceuticals. From components such as fuses, cables and circuit breakers to household equipment, professional work tools and automotive and aviation spare parts, nothing is safe from counterfeiting. While the appearance and packaging can be very convincing, the products themselves are often sub-standard and may represent a severe safety hazard, causing accidents and costing lives.

Financing organized crime

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And while counterfeiting may sometimes be perceived as a trivial offence, it can be directly linked to international organized crime, and help finance other criminal activities.

Fake

Counterfeit electrical products don't need to comply with performance and safety specifications; they are not tested or approved.

Counterfeit aviation parts for example pose a serious risk to the safety of military, civil and commercial aircraft.

Improve inventory management and inspections

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The infiltration of counterfeit parts into supply chains can often be avoided through improved inventory management, procurement procedures, and inspection protocols. In aviation for example the IECQ ECMP (Electronic Component Management Plan) is a particularly successful tool that helps this industry to combat counterfeit electronic components.

Majority of consumers purchase fake products

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According to a global study commissioned by the ICC (International Chamber of Commerce), 80% of consumers in the developed and developing world regularly purchase counterfeit products with little awareness, remorse or fear of consequences, including potential health and safety risks to themselves or their family. They are usually unaware of the very real risks to their health and livelihood, but are likely to change their behaviour when informed of the dangers.

One fake component = huge financial liability

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When counterfeit electrical devices, components and spare parts enter manufacturing supply chains, they can add fire, shock and explosion risks that may cost workers their lives, cause serious property damage and involve unpredictable financial liability.

One fake component can void guarantees for entire systems and installations, resulting in severe financial losses and liabilities. Manufacturers, installers, specifiers and employers can be held responsible for incidents and accidents linked to counterfeit merchandise.

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www.thydzik.com
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Fake **Original**

The economic impact

Counterfeit products directly impact the economies where those products are produced as well as those where they are sold.

Loss of foreign investment

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Countries with counterfeiting operations: reputable manufacturers become reluctant to manufacture their products in these countries. In addition to tax losses, these countries lose direct foreign investment and miss out on foreign know-how. In the long run, their reputation results in slower economic development and job losses.

Increased social costs

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Countries that receive counterfeit products: suffer job losses, missed sales opportunities and lost tax revenues in addition to increased social costs linked to death and injuries. According to an ICC study[1] based on 2008 data, G20 economies lose approximately USD 90 billion in tax revenues and higher welfare spending; costs related to loss of life and health services to treat injuries caused by dangerous fake products reach over USD 20 billion. These are just a portion of the economic damage that governments and consumers may experience.

Destroyed jobs

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Counterfeiting also has a big impact on employment: analysis suggests that, without counting the secondary impact on suppliers and retailers, approximately 2.5 million jobs have been destroyed by counterfeiting and piracy in G20 countries.

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1 **Estimating the global economic and social impacts of counterfeiting and piracy**
www.iccwbo.org/Advocacy-Codes-and-Rules/BASCAP/BASCAP-Research/Economic-impact/Global-Impacts-Study


¥1890
¥1995
¥2310
¥2540
MARVEL
¥3380
MARVEL
¥3230
¥2840
HANDY NIB
¥1450
¥4300
43PCS
LT-43 ¥1900
ENGINEER
¥700
¥830
ENGINEER
¥1230
ENGINEER
¥1890
¥1250
volcheck
DENSAN
¥2940
¥3160
アルミ・鉄板用 0.3mm~6.8mm
6.5mmノストリル 7mm~13mm
ステンレス用コバルト刃 1.0mm~12mm
HV60 HV50

Reduce demand for counterfeit products

Stopping production and sale is insufficient

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Most efforts by governments and enforcement agencies focus on stopping the production and sale of counterfeit products. However, to fight product piracy, it is equally important to understand the motivations that lead to the purchase of counterfeit products and to reduce demand through increased awareness, especially for electrical products.

Why consumers buy counterfeit products

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A study commissioned by the ICC[2] across 42 countries provides some valuable insights.

Perceived as harmless

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A large majority of consumers recognize that buying counterfeits is unethical but they feel it is essentially a victimless crime and seldom feel guilty about it. In the absence of obvious penalties against purchasers and sometimes sellers, they perceive counterfeiting to be harmless. They are generally unaware both of the economic impact of their act and the danger to their health.

Feeling of empowerment

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Most consumers refuse to call themselves victims of counterfeiting, even if they have a bad experience with such a product. They believe that they control the situation and, in some cases, even feel empowered by their purchase. Generally the reasons for the purchase are lower price and availability but more sophisticated motives can be found in some countries, including a rebellion against the established order or distribution system.

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2 **Research Report on Consumer Attitudes and Perception on Counterfeiting and Piracy.**
www.iccwbo.org/Advocacy-Codes-and-Rules/BASCAP/BASCAP-Research/Consumer-attitudes-and-perceptions

Broadly accessible – little control

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In emerging markets, more than half of counterfeit purchases take place in normal stores and consumers don't feel that they have a way to protect themselves against pirated products. Furthermore, even if they had the choice, they might often not have the financial means to afford an original.

Impulse purchase

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Most counterfeit products are purchased on impulse: consumers need the product fast, use it fast and throw it away fast.

Risk to health = powerful deterrent

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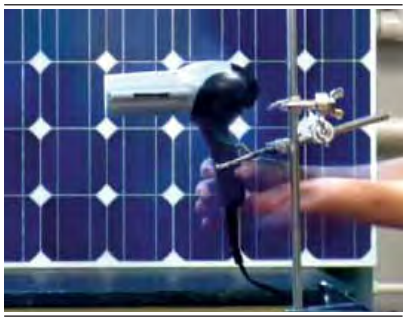
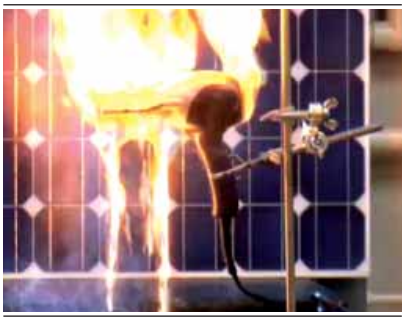
Consumers from all countries act according to proximity rules: they care first for themselves and their families, then for their communities and last for their countries. Risks to health and personal possessions are the most powerful deterrents against the purchase of counterfeit products. Consumers change their attitude and purchasing habits when they understand the risks and dangers to themselves, their families and communities. Consumers also look for evidence that government views this as a serious problem which has consequences.

The most credible spokespeople against counterfeit products are local victims (people whose health has suffered).

Steps in fighting product piracy





Key components in fighting product piracy include protecting your assets legally and through technologies, stricter testing protocols and quality-control practices, and improved communication in the supply chain.

Hereafter a few concrete measures that should be integrated into a counterfeiting strategy:

1. Register trademarks, copyrights, designs, apply for patents
2. Join relevant industry associations
3. Establish anti-counterfeiting policy, brand protection programme – training initiatives
4. Apply relevant covert and overt anti-counterfeiting technologies
5. Market surveillance, quality control, inspection
6. Interception and cooperation with law enforcement

Steps
in fighting product piracy

Fake

Original

1. Register trademarks and copyrights

Register trademarks in all countries you sell, manufacture, license or distribute products in. This is essential to protect trademarks and brands. Also, apply for patents and register designs. For details and registration procedures consult a trademark attorney.

2. Join trade associations

→ International Anticounterfeiting Coalition www.iacc.org

→ International Trademark Association www.inta.org

→ Chamber of commerce in your country

3. Anti-counterfeiting policy and brand protection programme

By establishing and pursuing an anti-counterfeiting policy and brand protection programme a company is able to provide proof that all due care was taken to limit or reduce counterfeiting and protect trademarks and brands. Together they provide a shield for liability, but also a protection against loss of reputation and adverse public opinion. The brand protection programme and anti-counterfeiting policy list pro-active measures that are put in place to identify and report fake products. They help limit the negative effects of counterfeiting and reduce reaction time should such an event occur.

Elements to consider include:

→ supply chain processes, inspection, audits and quality control

→ identification and evaluation of risks and threats

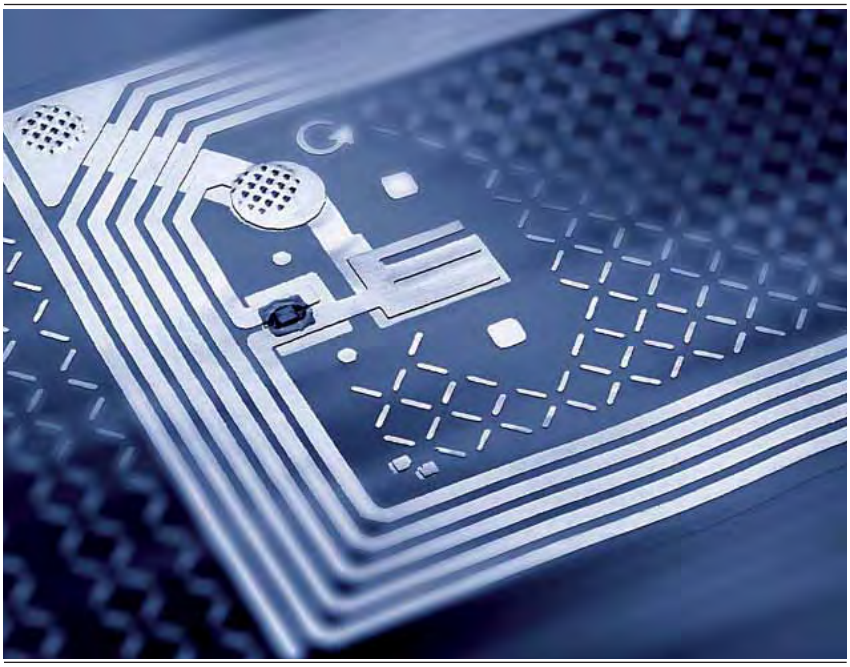
→ detection and reporting processes, including handling of counterfeit products

→ overall risk management and adequate response procedures

The policy also needs to address product labelling (including anti-counterfeiting technologies) and training of staff on how to recognize counterfeit products. Furthermore it should provide assistance and training programmes to officials tasked with enforcing seizures of counterfeit products. The latter because only the manufacturer of the genuine product knows whether an item is fake or genuine. Part of this may include the setting up of a product database, online reporting mechanisms, and simple protocols that provide investigators with tips on how to spot fakes.

When fake products are found

After contacting the relevant law enforcement authorities, consider reaching out to Members of a relevant IEC Conformity Assessment System (list on page 18). They can direct you to one of the national certification agencies and laboratories which might be able to help you set up a testing and inspection programme to avoid future problems, as well as product training for manufacturing staff and law enforcement agencies.



4. Anti-counterfeiting technologies

There are a number of anti-counterfeiting technologies that can help better protect and authenticate products. And while they can't completely eliminate counterfeiting, they can make it less attractive and less profitable, increasing the level of risk for the counterfeiters.

Embed trademarks in products

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Always try to make your trademark a part of the final product. Avoid labels that can be easily removed and use technologies that are difficult to reproduce.

Combine several technologies

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The difficulty is to find the right technology for the problem at hand. The solution needs to be cost-effective, compatible with distribution channels, customer friendly, resistant and durable. A combination of different product-protection devices usually increases effectiveness.

Overview of methods

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Currently available technologies include miscellaneous printing techniques (micro-printing, invisible ink, layered inks, light- or heat-reactive inks, watermarks), track and trace packaging, including bar codes, radio-frequency identification (RFID), and nano-size taggants, holograms (including both visible and latent images and combinations of RFID and holograms), magnetic stripes, chemical and biological markers. For the latter, customized pens deposit an identifying liquid on the printed area which produces either a colour change or luminescent reaction to prove authenticity.

Further support

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Contact a Member of a relevant IEC Conformity Assessment System to find out what support they can provide you with in setting up your anti-counterfeiting programme (page 18).

Steps
in fighting product piracy

5. Market surveillance, quality control, inspection

→ Establish classical market surveillance, including at customs and ports

→ Obtain and test samples from open markets, websites and auction sites. Make it known that you run such tests

→ Keep a database of companies and manufacturers that counterfeit your products

→ Send "Cease and Desist" letters for every infringement to establish brand and trademark protection measures

→ Tighten supply chain, production and delivery path of genuine products

→ Establish factory, pre-shipping and port of entry inspections (as counterfeit products sometimes hide in genuine shipments)

Consider involving an IEC Conformity Assessment System Member for inspection and testing pre-shipping and at market entry point (further information on page 18).

6. Interception and cooperation with law enforcement

Register for customs watch programmes.

Organizations including Interpol, WTO, World Customs Organization, WIPO and ICC are working closely together to improve international cooperation and border enforcement through increased customs co-ordination and exchange of information and best practices. The IEC and its Conformity Assessment System Members concretely support these efforts on the ground through inspection and testing.

Simple protocol

to identify counterfeit products

Verify the style, layout and quality of printed documentation, packaging and labelling

Packaging and labelling are sometimes the most obvious indication that something is wrong.

Check for strange use of language, grammatical errors, odd layout, unusual print fonts, lack of the certification stamp or label. Check test certificates and documentation shipped with goods.

A thorough external visual inspection should also include markings and logos, as well as potential discrepancies between shipping documents and part numbers.

External visual inspection

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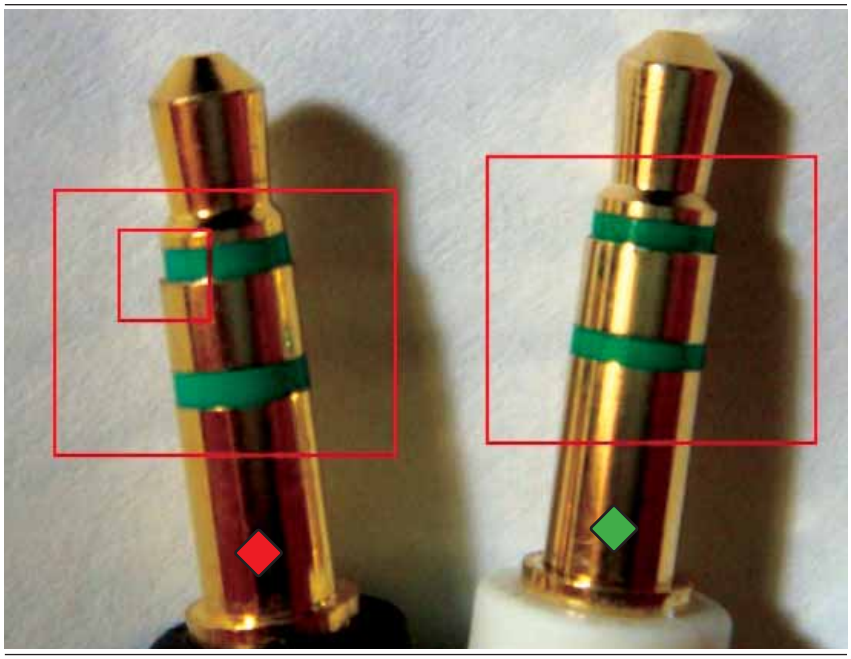
Does the touch and feel of a product seem unusual, is the thickness of a cord off, does the weight or shape seem strange?

Check quality and accuracy of brand logos (use logo libraries) and verify workmanship of part numbers and date codes: legibility, sharpness, clarity. Trademarked logos that look different from the usual may signal a counterfeit.

Inspect for evidence of physical alteration: sanding, blacktopping, etc. (acetone will attack many blacktopping materials). Conduct marking permanency test on inked brands (use 3:1 mineral spirits: isopropyl alcohol).

→ **Image printed with permission of Travis Hydzik**
www.thydzik.com



Fake

Original

At the forefront

of anti-counterfeiting measures

Inspection and testing – powerful deterrents

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While inspection and third-party testing are by far not the only solutions against counterfeiting, they can be very effective tools to police the global supply chain and help uncover counterfeit products before they enter a country or organization.

Testing to globally agreed specifications

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Testing laboratories use International Standards that include commonly agreed performance, safety and quality specifications as the basis for their third-party testing, inspections and controls.

Immediate verification

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IEC Conformity Assessment Systems operate online databases for immediate verification of issued “Certificates of Conformity” and/or “Test Certificates” in the electrotechnical sector, which also helps in spotting fake merchandise.

Most National Certification Bodies are Members of one or several of the IEC Conformity Assessment Systems. They can provide help and information on organizations that can support you in your anti-counterfeiting efforts.

You will find a full list of the Members of each IEC Conformity Assessment System via these web links:

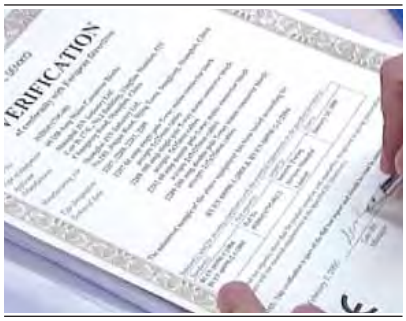
→ Household, Medical and Office products and Toys:
members.iecee.org

→ Equipment used in hazardous areas:
www.iecex.com/countries.htm

→ Electronic components, including those for the air transport industry:
www.iecq.org/membership/participating_countries/IECQ_NAIs.htm

→ Equipment for use in renewable energy applications:
www.iecre.org/members

National Certification Bodies



To find the National Certification Bodies and laboratories that participate in one of the IEC CA (Conformity Assessment) Systems please contact the relevant Member body:

Argentina
IRAM
www.iram.org.ar

Australia
Standards Australia
www.standards.org.au

Austria
OVE
Oesterreichischer Verband für Electrotechnik
www.ove.at

Bahrain
Bahrain Standards & Metrology Directorate
www.moic.gov.bh

Belarus
BELLIS JSC
www.bellis.by/en

Belgium
SGS Belgium
N.V.-Division
www.be.sgs.com/cebec

Brazil
COBEI
www.cobei.org.br

Bulgaria
BDS
www.bds-bg.org

Canada
Standards Council of Canada
www.scc.ca

China
CNCA
cnca.gov.cn

Colombia
ICONTEC
www.icontec.org.co

Croatia
HZN
www.hzn.hr

Czech Republic
EZU
www.ezu.cz

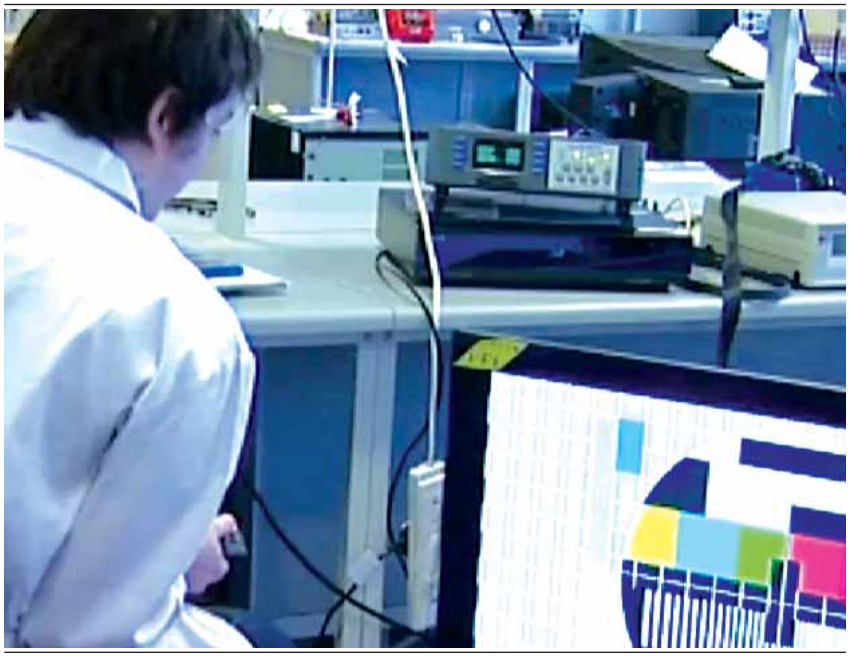
Denmark
Dansk Standard
www.ds.dk

Finland
SGS Fimko Ltd
www.fi.sgs.com/sgssites/fimko

France
LCIE
www.lcie.com

Germany
Deutsche Kommission Elektrotechnik
Elektronik Informationstechnik im DIN & VDE
www.dke.de

Greece
Elot
www.elot.gr



Hungary
TÜV Rheinland
www.tuv.com/hun

India
Bureau of Indian Standards
www.bis.org.in

Indonesia
BSN
www.bsn.go.id

Ireland
ETCI
www.etci.ie

Israel
SII
www.sii.org.il

Italy
IMQ
www.imq.it

Japan
JISC
www.jisc.go.jp

Kenya
KEBS
www.kebs.org

Korea, Republic of
KATS
www.kats.go.kr

Libya
Libyan National Centre for Standardization and Metrology
www.lncsm.org.ly

Malaysia
SIRHIM Berhad
www.sirim.my

Mexico
ANCE
www.ance.org.mx

Netherlands
DEKRA
www.dekra.nl

New Zealand
Standards New Zealand
www.standards.co.nz

Norway
NEK
www.nek.no

Pakistan
Pakistan Standards and Quality Control Authority
www.psqca.com.pk

Poland
PCBC
www.pcbc.gov.pl

Portugal
CERTIF
www.certif.pt

Romania
ASRO
www.asro.ro

Russian Federation
GOSTR
www.gost.ru

Saudi Arabia
SASO Saudi Standards, Metrology and Quality Organization
www.saso.org.sa

Serbia
ISS Institute for Standardization of Serbia
www.iss.rs

Singapore
Spring
www.spring.gov.sg

Slovakia
SEV Slovak Electrotechnical Committee
www.sutn.gov.sk

Slovenia
SIQ
www.siq.si

South Africa
IEC National Committee of South Africa
www.sabs.co.za

Spain
AENOR
www.aenor.es

Sweden
SEK Svensk Elstandard
www.elstandard.se

Switzerland
Electrosuisse
www.electrosuisse.ch

Thailand
TISI Thai Industrial Standards Institute
www.tisi.go.th

Turkey
Turkish Standards Institution
www.tse.gov.tr

Ukraine
UkrTEST
www.ukrcsm.kiev.ua

United Arab Emirates
ESMA
www.esma.ae/en-us

United Kingdom
British Electrotechnical Committee
BSI
www.bsigroup.com

USA
USNC/IEC
www.ansi.org

Additional resources and information

For further information on the IEC Conformity Assessment Systems

www.iecee.org
www.iecex.com
www.iecq.org
www.iecre.org

Anti-counterfeiting organizations

Anti-Counterfeit Products Initiative
www.counterfeitscankill.com

Certification Industry against Counterfeiting
www.ciac.info

ESFI
Electrical Safety Foundation International
www.esfi.org

GACG
Global Anti-Counterfeiting Group
www.gacg.org

ICC BASCAP
International Chamber of Commerce
Business Action to Stop Counterfeiting and Piracy
www.bascap.com

Interpol
www.interpol.int

OECD
www.oecd.org

REACT
The European Anti-Counterfeiting Network
www.react.org

World Customs Organization
www.wcoomd.org

Anti-Counterfeiting Trade Agreement

ACTA
http://www.ustr.gov/acta

Counterfeit Electrical Product

Warning!

Use can result in property loss, serious injury or death. Installers carry full liability.

International Electrotechnical Commission

3 rue de Varembe
PO Box 131
CH-1211 Geneva 20
Switzerland

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info@iec.ch
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