

The Counterfeit Conundrum – Identifying A Worldwide Problem For Electrical Safety

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Electrical Injuries/Fatalities

Electrical injuries represent approximately

29%

of workplace injuries

Electrical Injuries/Fatalities

Three groups represent 66% of the fatalities

- Construction, 38%
- Installation, Maintenance & Repair, 21%
- Grounds Maintenance, 7%

Electrical Injuries/Fatalities

Data shows an almost

60%

decline in injuries/fatalities from
1992-2010

Electrical Injuries/Fatalities

In 2011-2013, the pace changed, and
workplace electrical fatalities

INCREASED

Some industries have seen a 24%
increase

Safety Costs Too Much!

"My pledge to you this year is to kill off for good the excessive culture of safety and health that is dragging down business like a heavy wooden yoke

"I am hereby declaring war on pointless and time-wasting health and safety regulations. I am instructing the Health & Safety Executive to eliminate one-half of all its regulations by the end of 2012."

"We will cut back the health and safety monster."

"Safety culture is nothing more than a straitjacket on personal initiative and responsibility. We must crush these cultures before any more damage is done."



*David Cameron, UK Prime Minister
New Years Resolution 2012*

*This said with over 2 million workers
currently disabled or recovering from
workplace injuries in the UK.*

Safety Costs Too Much!

House Votes to Halt All New Health, Environmental and Workplace Regulatory Actions

EHS Today, Jul. 27, 2012
By Sandy Smith

The Republican majority in the House of Representatives voted July 26 to pass H.R. 4078, the Red Tape Reduction and Small Business Job Creation Act.

Should H.R. 4078 become law, it would block a smorgasbord of regulations designed to ensure power plants comply with the Clean Air Act, protect workers from beryllium exposure, make the food supply safer, ensure Iraq and Afghanistan war veterans receive compensation owed to them for extended deployments, track medical devices so patients can be made aware of recalls, establish the rules for bird-hunting season, protect people from another Wall Street meltdown and more.



Congressman Tim Griffin (R.-Ark)

*"Hardworking Americans deserve a
regulatory system that doesn't hamstring
their ability to invest, hire and grow"*

Safety Costs Too Much!

We always hear safety issue are because...



It takes CA\$H!

Safety Costs Too Much!??

Average arc flash burn injury costs between
\$12,000,000 to \$20,000,000
in medical expenses & lost time

Average hospital burn unit stay costs
\$400,000 / month

Average hospital burn unit stay from an arc
flash incident is 3-4 months

Safety Costs Too Much!??

EHS Today, May 31, 2012

Researchers: OSHA Inspections Savings Employers Billions

By Sandy Smith

A new study, co-authored by Harvard Business School Professor Michael Toffel, Professor David Levine of the Haas School of Business at the University of California – Berkeley and Boston University doctoral student Matthew Johnson, examines workplace safety inspections conducted by California's Division of Occupational Safety and Health (Cal/OSHA). The authors carried out the first evaluation of a "clinical trial" of the state's mandated randomized inspections to discern their effect on both worker safety and companies' bottom lines.

The study, "Randomized Government Safety Inspections Reduce Worker Injuries with no Detectable Job Loss," **concluded workplace inspections do reduce on-the-job injuries and their associated costs, and they could not detect any harm to companies' performance or profits.**

"We spent several years collecting data, not just on injuries, which is very important, but also on other indicators to see whether inspections led to problems they are often accused of causing – like whether they increased costs and led to the elimination of jobs," said Levine. "We looked at company survival, employment, sales and total payroll to see if inspections were detrimental to the employers."

[<http://www.sciencemag.org/content/336/6083/907>]



May 18, 2012 Issue of
Science magazine

*Here's a safety issue costing
all of us, in multiple ways!!*



Counterfeiting

A Growing “Business”

- Counterfeiting and piracy have grown into a global business estimated at US\$1.77 trillion in 2015, with more than half of the products moving through international trade channels.

85%

A large, bold, 3D-style '85%' is displayed on a dark, textured background. To the right of the percentage, a thick, grey, 3D-style arrow points upwards and to the right.

Counterfeiting

A Growing “Business”



- Counterfeiting and piracy are estimated to cost as many as 750,000 jobs each year in the US alone.

Counterfeiting

A Growing “Business”



- 16,400 non-home structure fires were caused by electrical failures/malfunctions in 2011.

Counterfeiting



According to a global study commissioned by the ICCWBO (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, their co-workers, or their family. They are usually unaware of the very real risks to their health and livelihood, but are likely to change their behavior when informed of the dangers.

Counterfeiting

How does it hurt?

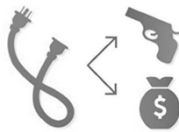


- Counterfeit alcohol often contains dangerous chemicals which can cause blindness
- Counterfeit perfume often burns skin, leaves a rash & may contain lead
- Fake sunglasses often offer no UVA protection
- Fake tobacco often contains unknown chemicals, higher tar levels & can be a fire risk
- Counterfeit children's toys can often be unsafe with unsuitable small parts & children's clothes may be inflammable.

Counterfeiting

Who does it help?

Counterfeiting profits have
been traced to
organized crime and terrorism



- Counterfeiting may sometimes be perceived as a trivial offense, it can be directly linked to international organized crime, and help finance other criminal activities.

Counterfeiting

Electrical goods...2nd place now

The prevalence
of counterfeit
products has
**increased over
10,000%**
in the past
two decades.



- 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.

Counterfeiting

What's being counterfeited?

Common electrical products:

- Extension cords
- Power strips
- Batteries
- Circuit Breakers
- Fuses
- Consumer electronics (i.e. hair dryers)
- **PPE**, and more...

Counterfeiting

What's being counterfeited?

The screenshot shows the United States Consumer Product Safety Commission website. The header includes navigation links: "Report an Unsafe Product", "Contact CPSC", "Website Design Feedback", "Consumer: Español", "Business: Español", and "Telling Vets". There is also a "Connect with Us" section with social media icons. A sidebar on the left lists various product categories under "Content Type" and "Products". The main content area displays a list of recalls, including:

- Mami Breaker Recalls Counterfeit Square D Circuit Breakers Due to Fire Hazard | CPSC.gov**: The recalled circuit breakers labeled...
- Hanashop Recalls Counterfeit Power Cords Due to Fire and Shock Hazard: Sold Exclusively on eBay ...**: The power cord wires are significantly undersized and allow increased insertion of the power plug, posing a risk of fire and/or shock to consumers.
- Asurion Recalls Counterfeit BlackBerry-branded Batteries Due to Burn and Fire Hazards | CPSC.gov**: The counterfeit batteries can overheat, posing burn and fire hazards.
- CPSC Alert: Counterfeit Smoke Alarms Distributed in Atlanta | CPSC.gov**: The smoke alarms can fail to alert occupants in the event of a fire.
- Connecticut Electric Recalls Counterfeit Square D Circuit Breakers Due To Fire Hazard | CPSC.gov**: The recalled circuit breakers labeled "Square D" are counterfeit and could fail to trip when they are required to, posing a fire hazard to consumers.
- North American Breaker Co. Recalls Counterfeit Circuit Breakers Due to Fire Hazard | CPSC.gov**: The recalled circuit breakers labeled "Square D" have been determined by Square D to be counterfeit and can fail to trip when they are overloaded, posing a fire hazard to consumers.
- Scott Electric Co. Inc. Recalls Counterfeit Circuit Breakers Due To Fire Hazard | CPSC.gov**: The recalled circuit breakers labeled...
- CPSC, Verizon Wireless Announce Recall of Counterfeit Cell Phone Batteries | CPSC.gov**: ...no longer available, CPSC, Verizon Wireless Announce Recall of Counterfeit Cell Phone Batteries. The recalled batteries ...
- Spartan's Warehouse Recalls Flashlights, Counterfeit Batteries Can Overheat, Posing a Fire Hazard ...**: The batteries packaged with the recalled flashlights are labeled as...
- Pride Products Recalls Counterfeit Extension Cords Due to Fire Hazard | CPSC.gov**: The recalled cords are brown or white, measure 6, 9, 12, or 15 feet long, are intended for indoor use and have a three-outlet extension.

At the bottom, it says "Result Page 1 2 3 4 5 6 7 8 9 10 Next".

Counterfeiting

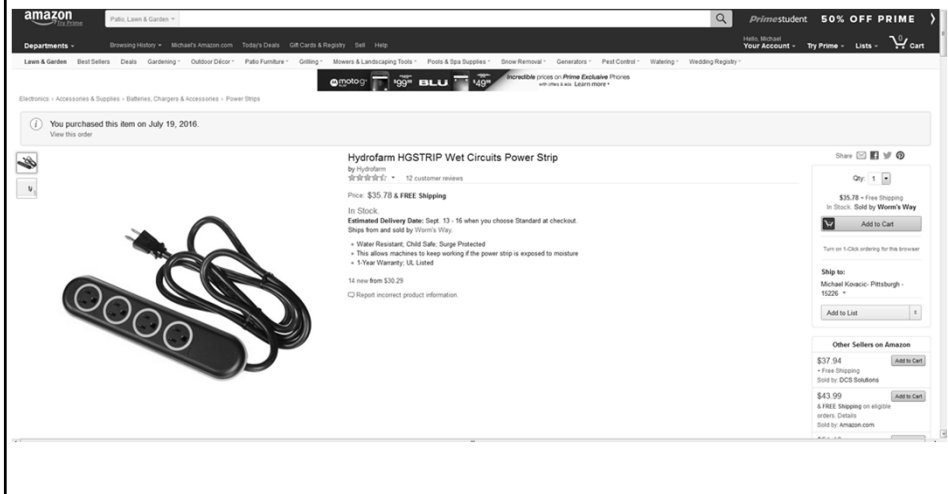
*But how does it get out
there!!??*

Counterfeiting

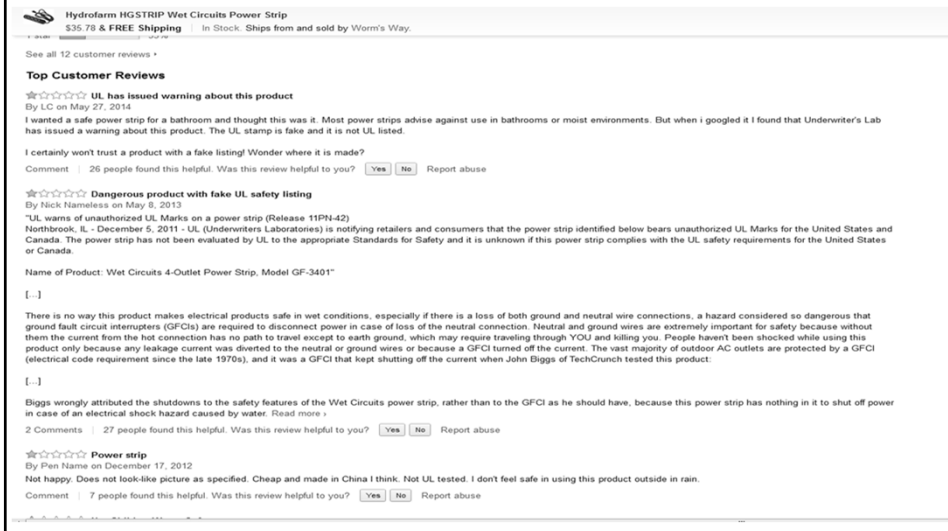
Distributor (i.e. Amazon) Example



Counterfeiting Distributor (i.e. Amazon) Example

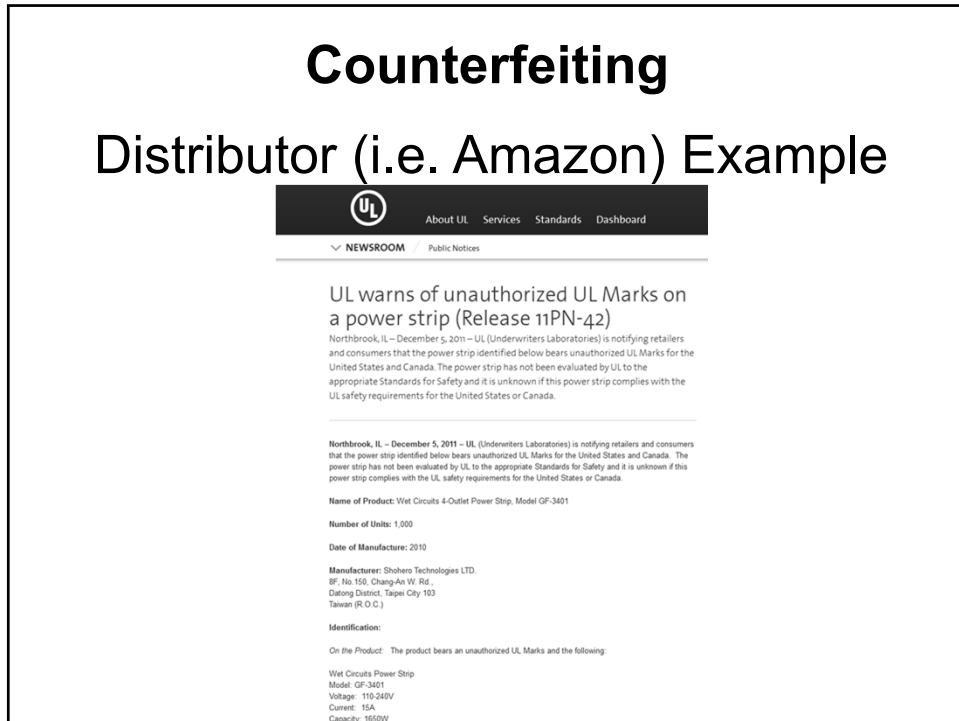


Counterfeiting Distributor (i.e. Amazon) Example



Counterfeiting

Distributor (i.e. Amazon) Example



UL About UL Services Standards Dashboard

NEWSROOM / Public Notices

UL warns of unauthorized UL Marks on a power strip (Release 11PN-42)

Northbrook, IL – December 5, 2011 – UL (Underwriters Laboratories) is notifying retailers and consumers that the power strip identified below bears unauthorized UL Marks for the United States and Canada. The power strip has not been evaluated by UL to the appropriate Standards for Safety and it is unknown if this power strip complies with the UL safety requirements for the United States or Canada.

Northbrook, IL – December 5, 2011 – UL (Underwriters Laboratories) is notifying retailers and consumers that the power strip identified below bears unauthorized UL Marks for the United States and Canada. The power strip has not been evaluated by UL to the appropriate Standards for Safety and it is unknown if this power strip complies with the UL safety requirements for the United States or Canada.

Name of Product: Wet Circuits 4-Outlet Power Strip, Model GF-3401

Number of Units: 1,000

Date of Manufacture: 2010

Manufacturer: Shohero Technologies LTD.
B#1, No. 150, Chang-An YW Rd.,
Datong District, Taipei City 103
Taiwan (R.O.C.)

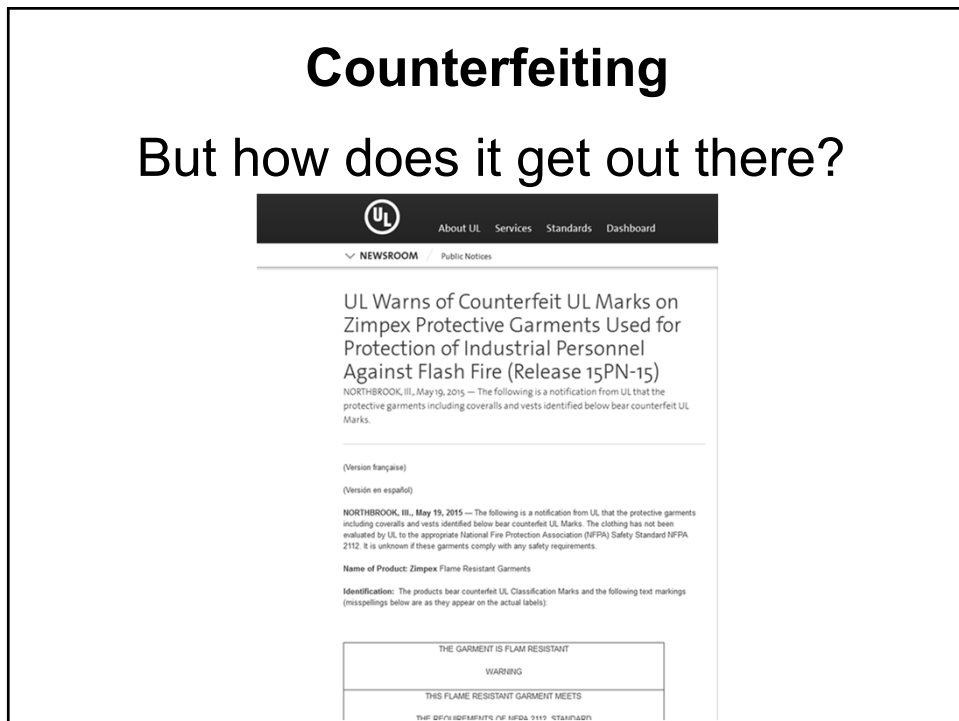
Identification:

On the Product: The product bears an unauthorized UL Marks and the following:

Wet Circuits Power Strip
Model: GF-3401
Voltage: 110-240V
Current: 15A
Capacity: 4000W

Counterfeiting

But how does it get out there?



UL About UL Services Standards Dashboard

NEWSROOM / Public Notices

UL Warns of Counterfeit UL Marks on Zimpex Protective Garments Used for Protection of Industrial Personnel Against Flash Fire (Release 15PN-15)

NORTHBROOK, IL, May 19, 2015 – The following is a notification from UL that the protective garments including coveralls and vests identified below bear counterfeit UL Marks.

(Version française)

(Versión en español)

NORTHBROOK, IL, May 19, 2015 – The following is a notification from UL that the protective garments including coveralls and vests identified below bear counterfeit UL Marks. The clothing has not been evaluated by UL to the appropriate National Fire Protection Association (NFPA) Safety Standard NFPA 2112. It is unknown if these garments comply with any safety requirements.

Name of Product: Zimpex Flame Resistant Garments

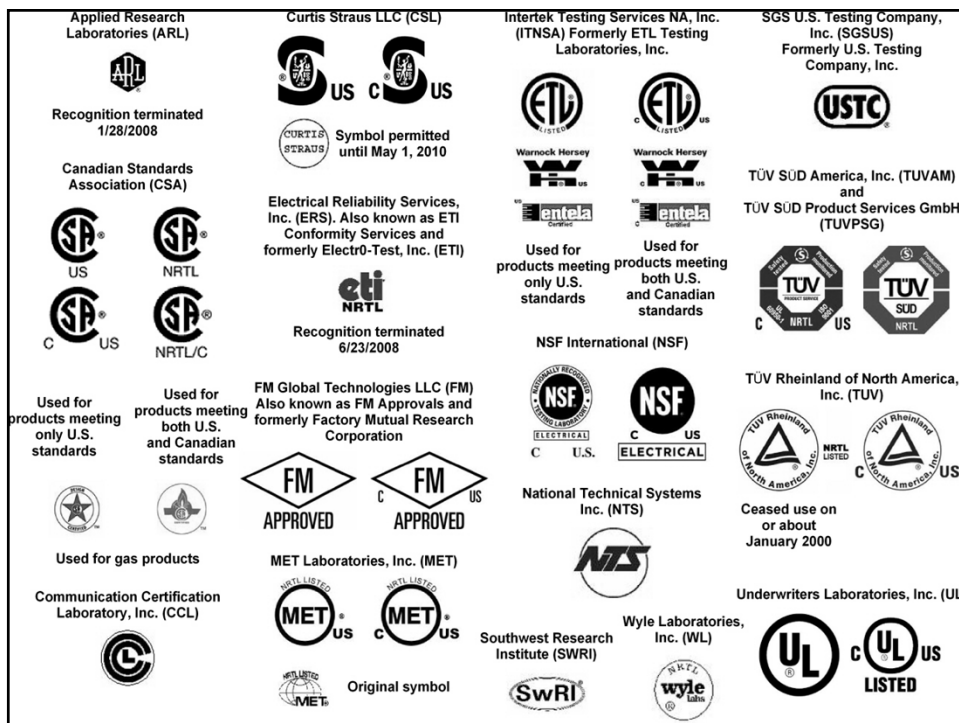
Identification: The products bear counterfeit UL Classification Marks and the following text markings (misspellings below are as they appear on the actual labels):

THE GARMENT IS FLAM RESISTANT
WARNING
THIS FLAME RESISTANT GARMENT MEETS
THE NFPA 2112 STANDARD

Counterfeiting

Use the following tips for recognizing and protecting against dangerous and defective counterfeit electrical products:

- Look for the NRTL (i.e. CSA, UL, ETL-SEMKO) certification marks. If you have concerns about the marks, contact the certifier or manufacturer.



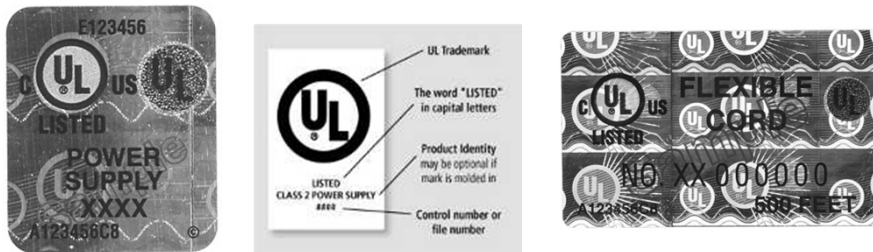
Counterfeiting

Fake NRTL labels are often close copies...



Counterfeiting

UL & CSA labels for the most counterfeited products are holographic, and should contain certain information...



Counterfeiting

UL & CSA labels for the most counterfeited products are holographic, and should contain certain information...

- The UL trademark: the letters “UL” arranged diagonally (descending left to right) within a circle, with a small ® symbol directly below the U
- The word “listed” printed either below or beside the circle in all capital letters: LISTED
- 4-character alphanumeric control number, or a 4 to 6-digit issue number. In the case of the issue number, it may or may not be preceded by the phrase “Issue No.” as well as 1 or 2 letters
- A product identity phrase that concisely names what the product is

Counterfeiting

Additional signs of a genuine UL Mark are:

- A UL file number (which will often have the letter “E” as a prefix)
- The manufacturer’s company name or logo
- Applicable electrical ratings
- Information designating the product’s Catalog, Model, or Type designation

Counterfeiting

The following can also be telling signs of a bogus UL Mark:

- Products whose packaging makes reference to UL, but is free from a company name, trademark, trade name, or other UL-authorized designations
- Low-quality, cheaply manufactured products with the letters “UL” printed side by side, instead of diagonally and inside a circle
- The use of words like approved or pending in place of classified or listed. Neither “approved” nor “pending” are sanctioned or used by Underwriters Laboratories, Inc.

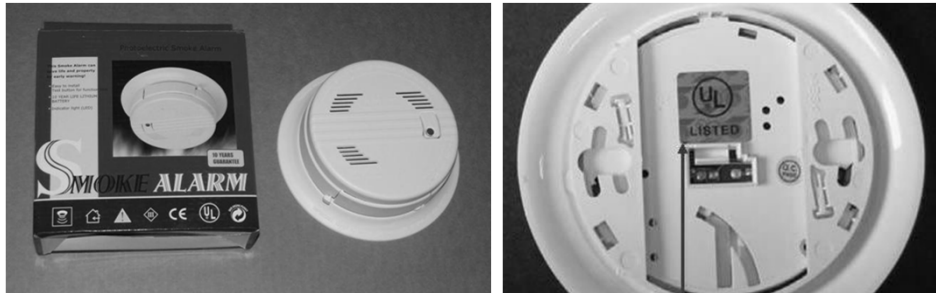
Counterfeiting

The following can also be telling signs of a bogus UL Mark:

- “UL marked” product packages containing a large number of spelling and grammatical errors
- The lack of appropriate product documentation, including instructions for use, safety warnings, and information on proper care and maintenance
- Products whose packaging lacks a toll-free customer service number, company address, or other corporate contact information

Counterfeiting

Example:



The product does not have a brand name on the box. The packaging states, "10 YEAR LIFE LITHIUM BATTERY," but the battery included with the smoke alarm is a carbon zinc, industrial, heavy duty battery, which will power the alarm for only one year.

The alarms do not have a model number or brand name printed on them. "Important: Refer to Manual for Operating Instruction and Safety" and "Do Not Paint" are stamped into the plastic on the front of the alarm in both English and German.

The counterfeit alarms can be identified by a silver Underwriters Laboratories' UL label on the back and three sets of vented slots on the front. The UL label is counterfeit.

Counterfeiting

Use the following tips for recognizing and protecting against dangerous and defective counterfeit electrical products:

- Look for the NRTL (i.e. CSA, UL, ETL-SEMKO) certification marks. If you have concerns about the marks, contact the certifier or manufacturer.
- Beware of bargains that seem too good to be true. Products may be cheap because they are counterfeit or defective.
- Use established vendors who purchase their goods from legitimate distributors and genuine manufacturers.

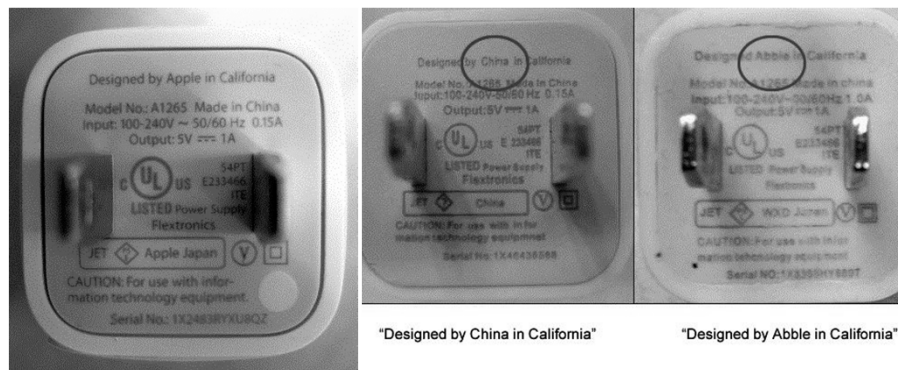
Counterfeiting

Use the following tips for recognizing and protecting against dangerous and defective counterfeit electrical products:

- Check the warning label. It should be free of grammatical errors and should not conflict with information found elsewhere on the package.

Counterfeiting

Example:



Strange wording on products are indicators of counterfeit products

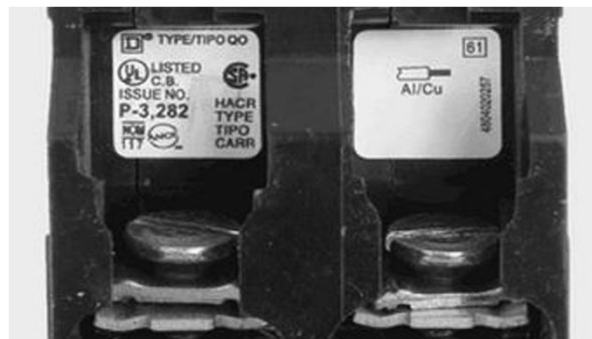
Counterfeiting

Use the following tips for recognizing and protecting against dangerous and defective counterfeit electrical products:

- Check the warning label. It should be free of grammatical errors and should not conflict with information found elsewhere on the package.
- Look for the name and contact information of the manufacturer. If this information is missing, consider purchasing electrical products elsewhere.

Counterfeiting

Example:



Labels that do not indicate country of origin, or with very little information are indicators of counterfeit products

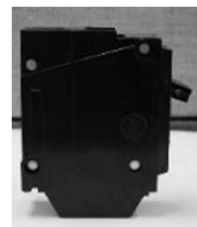
Counterfeiting

Use the following tips for recognizing and protecting against dangerous and defective counterfeit electrical products:

- Check the warning label. It should be free of grammatical errors and should not conflict with information found elsewhere on the package.
- Look for the name and contact information of the manufacturer. If this information is missing, consider purchasing electrical products elsewhere.
- Avoid no-name products that lack brand affiliation.

Counterfeiting

Example:



- Incorrect use of Cutler-Hammer Brand logo
- Missing UL Certification
- UL File Number for GE breaker NOT Cutler-Hammer
- Missing Supplementary Label with Barcode
- Made in China Marked on Breaker

Counterfeiting

How can you spot a gray market breaker?
Look at the packaging.

If the breaker you are about to buy is not in the original carton, has been opened and resealed, or there is no box at all, make sure you know why. If the packaging is suspect, it's safest not to buy.



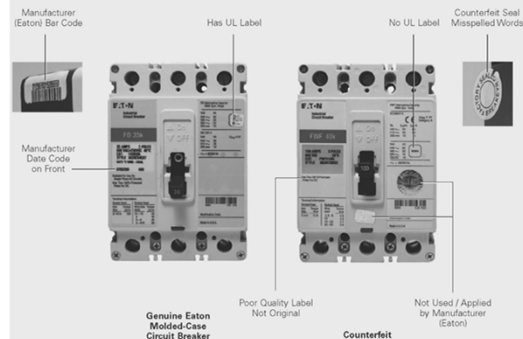
Genuine examples of molded-case circuit breakers



Suspicious product recognition

- **Missing date code**—Removed to hide the age of the circuit breaker.
- **Old date code**—Any product over two years old no longer has any factory warranty.
- **Factory seals broken or removed**—Product has been tampered with and has no warranty or guarantee that it meets performance specifications.
- **Mislabeled products to change size/type**—Product has been tampered with, causing a possible misapplication and a safety hazard.
- **Non-English text**—Product appears with labels in languages other than English.
- **Missing UL® sticker**—Product is likely imported illegally and is not certified to meet U.S. electrical codes.
- **Low-quality labeling and/or misspelled words**—Product is likely a counterfeit and made with sub-standard materials and workmanship.
- **Old Westinghouse or Challenger label**—These products have not been produced since 1999 and 1997 respectively.
- **Not in a carton or in older white cartons**—Product is used and/or outdated.

Which one is phony?



Counterfeiting

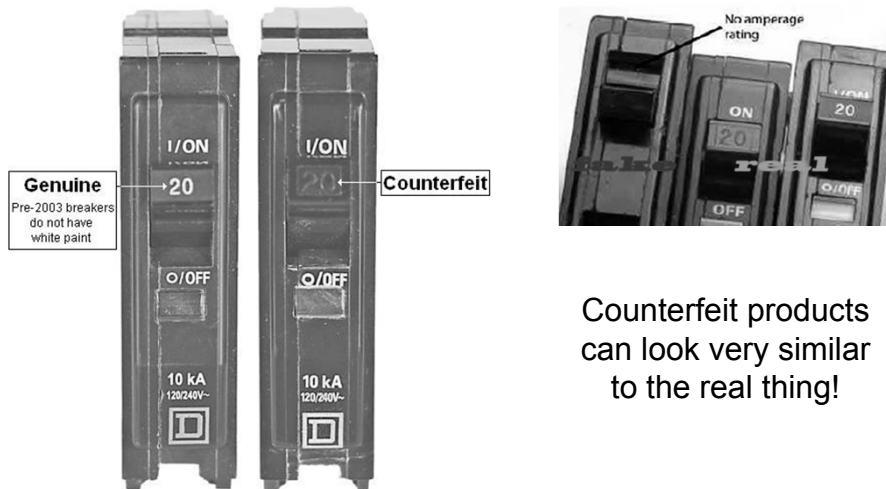
Example:



- Unprofessional Packaging
- Incorrect Use of Branding & Logo
- Low Quality Packaging Labeling
- Labeling Fonts, Bar Code; Markings Inconsistent with Genuine
- Poor Fitting MCCB Nameplates
- Use of a Hologram (Eaton does not use holograms)
- Missing Barcode (breaker side), Missing Date Codes (breaker rear)
- Lubricant Leaching from Breaker (note factory seal is contaminated)
- Inferior Breaker Color and Finish

Counterfeiting

Example:



Counterfeiting

Example:



While the physical differences between the two circuit breakers are nearly undetectable, using Eaton's Circuit Breaker Authentication Tool you would learn that the circuit breaker on the right is the FAKE.

Counterfeiting

Example:

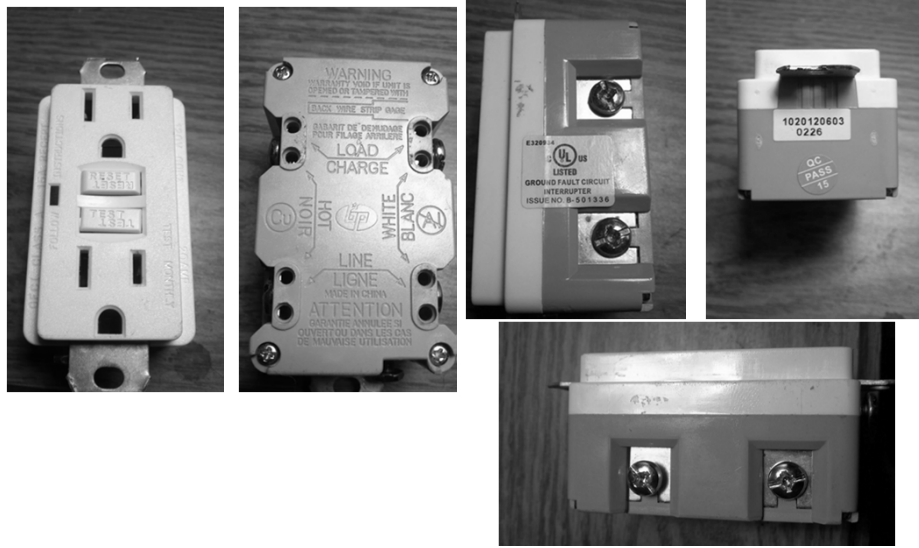
Had an electrician friend call me today about one of his machines in the plant. One of the machines kept tripping out the GFCI outlet when it was turned on, yet when plugged into a certain GFCI outlet it did not trip.

When tested, the GFCI did not trip until well over 7 Milliamps of leakage...far in excess of the allowable 5 milliamps. I was at first thinking a bad GFCI, but when I started looking it over, I noticed UL mark was not the new reflective mark and other issues with stamping, etc. Ends up this GFCI is counterfeit... UL and US Customs has been warning about it.

The company who made this GFCI, General Protecht Group Inc of China, has been embroiled in several trademark infringement lawsuits and has had UL and CPSC looking at them, yet their dangerous and illegal products have made it to our shores.

Counterfeiting

Example:



Counterfeiting

Example:



Acceptable double-insulated tool?

Counterfeiting

Example:



Real? Or Counterfeit?

Counterfeiting

Use the following tips for recognizing and protecting against dangerous and defective counterfeit electrical products:

- Be proactive. Organizations such as the Consumer Product Safety Commission (CPSC) and Underwriters Laboratories (UL) provide information about product recalls on their websites.
- Verify that it is an authentic product.
- Report any product you suspect is counterfeit.
 - If you cannot find brand contact information, don't stop there. You can always contact the IPR Center who will disseminate the information for appropriate response. Contact the IPR Center at IPRCenter@dhs.gov or (866) IPR(477)-2060.

What's Being Done

Manufacturers and NRTLs try to enhance protective measures:

- New labeling measures, for example



What's Being Done

The most important thing you can do?

- Enhance awareness!

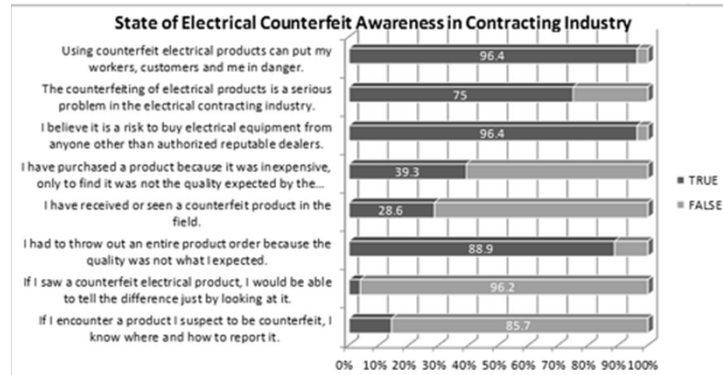


Figure 1: Complete results of survey on the state of awareness around counterfeit electrical products of IEC members.

Resources

Following resources can help you identify and stop counterfeit products:

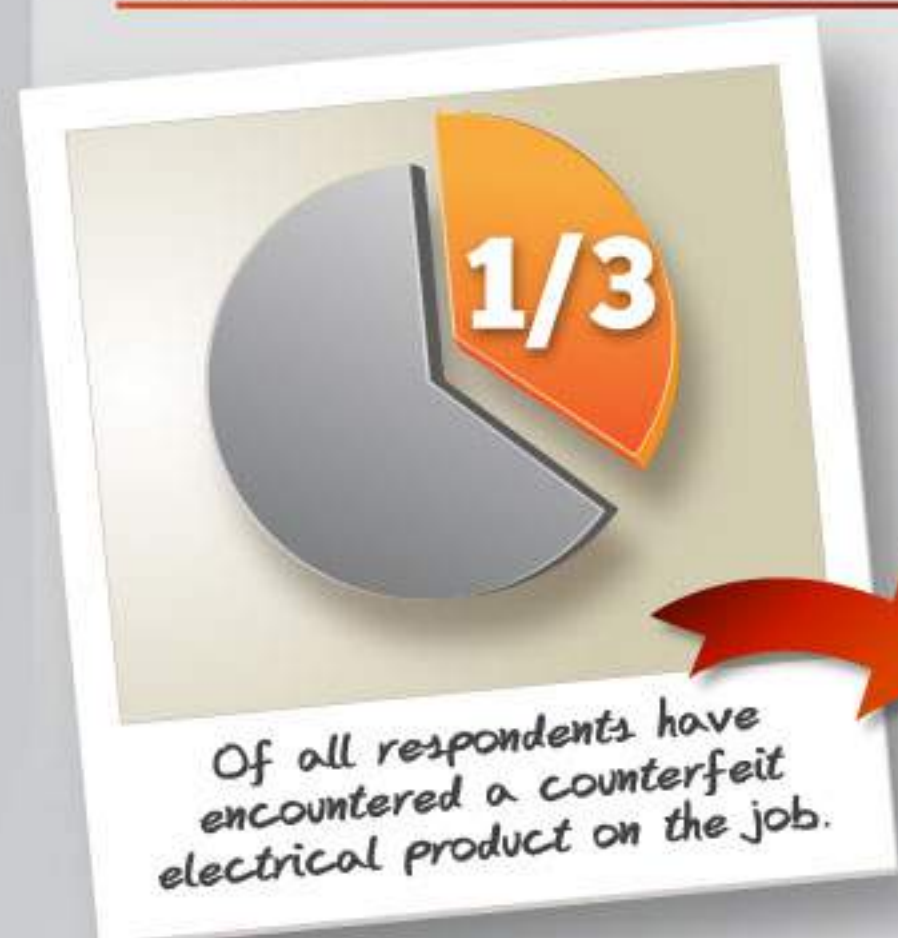
- UL – Hotline (877) 854-3577, Database <http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm>, Counterfeiting <http://canada.ul.com/codeauthorities/anticounterfeitingoperations/>
- CPSC – <http://www.cpsc.gov/en/>
- Int'l AntiCounterfeiting Coalition – <http://www.iacc.org/>
- Eaton Corporation – www.eaton.com/counterfeit, email at report_fakes@eaton.com.
- Download IEC Brochure – http://www.iec.ch/about/brochures/pdf/conformity_assessment/IEC_Counterfeiting_brochure_LR.pdf
- ESFI – <http://www.esfi.org/resource/zero-tolerance-for-counterfeits-295>

The **REAL DEAL** on Electrical Counterfeits



The Problem

The Electrical Safety Foundation International surveyed over 900 electrical inspectors, contractors, distributors, and manufacturers to learn about the counterfeiting issue in the electrical industry.



Nearly **half** of the inspectors surveyed have discovered a counterfeit.

5

The average number of counterfeits they found in the last year alone.



Lighting & breakers were the most common counterfeit product discovered.

The **Action** Gap

96% believe counterfeits are at least a moderate threat to public safety.

THREAT:

20%



MODERATE

56%



SUBSTANTIAL

20%



URGENT

Only **half** reported a counterfeit upon discovery.



1/3+ do not have defined best practices to avoid counterfeits in their work.

The Need

Distributors were thought to be best equipped to reduce the prevalence of counterfeits.



Over 1/4 of respondents were "not at all" familiar with liability associated with counterfeit products.

Over half believe their company does not provide adequate training.

55%



COUNTERFEIT OR LEGIT?

10 TIPS TO HELP YOU BUY THE REAL DEAL



They say every man has his price and when it comes to counterfeit electrical products that is, essentially, true. Purchasing counterfeits may save a buck but it puts your safety, and potentially the safety of your loved ones and your home, at risk. Use these helpful tips to help avoid the purchase of counterfeit electrical products and ensure you get a real deal.

1

Only a mousetrap offers free cheese. If the price looks too good to be true, it probably is. Compare prices of similar products and avoid any that are drastically cheaper than the average.



2

Judge a book by its cover. Avoid products being sold without packaging or with packaging of poor quality.



3

Be a grammar guru. Read through the labels and packaging text. If you notice typos, misspelled words, poor grammar, or blurry text it may indicate a counterfeit product. The same holds true for website text as well.



4

Put it to the test. Look for products that have been certified by a nationally recognized independent testing lab (i.e. Underwriters Laboratories (UL), Intertek (ETL), or Canadian Standards Association (CSA)). The certification mark should be on both the packaging and the product.



5

No news is good news. Do a search to see if any product recalls, which include counterfeiting alerts, have been issued by the Consumer Product Safety Commission (CPSC) or by independent testing labs (i.e. UL, ETL, or CSA).



6

Better safe than sorry. Avoid unknown brands and products that do not display any brand affiliation or the name and contact information of its manufacturer.



7

Avoid the point of no return. Be wary of establishments that have a "no returns or refunds" policy.



8

The best advertisement is a good product. Use established vendors who purchase their goods from legitimate distributors and genuine manufacturers.



9

Nothing is certain but death and taxes. Counterfeit operations often do not report their sales to financial authorities, so be suspicious if the purchase price does not reflect the required sales tax.



10

Where there's smoke, there's fire. If in doubt, trust your instincts. No bargain is worth risking your safety.





Electrical Safety Alert



Non-NRTL MacBook Power Adapter Catches Fire While in Use

Lessons Learned

- **Inspect your plug-connected electrical equipment before using and while working with it.**
- **Use only electrical equipment listed by an Nationally Recognized Testing Laboratory (NRTL), or which has passed an Electrical Equipment Safety Program (EESP) inspection.**
- **Be attentive to equipment condition as you plug, unplug and work.**

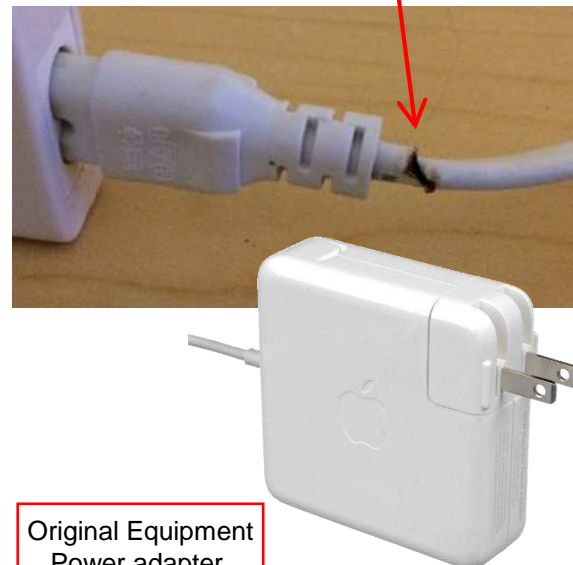
What Happened

The GPK Systems (after market) MacBook power adapter pictured here was plugged in to a 120-Volt outlet when it began to flame and smoke. The adapter was unplugged, stopping the fire, but leaving soot on the table.

The stress point on the cord appears to have weakened the wire, causing heat to build up and eventually caused a fire.

What You Can Do

Always specify, purchase and use equipment that has been listed by an NRTL, such as UL or CSA.



Notice that the after market power supply had no NRTL labeling, nor did the detachable cord



Take a moment right now and visually inspect your electronic equipment. Verify that there is no discoloration indicating heat build up, and that everything you are using has at least one NRTL symbol.

Genuine manufacturer branded equipment is recommended to avoid counterfeit products. Any replacement product for use at LBNL must have NRTL listing or recognition.

<https://www.osha.gov/dts/otpc/nrtl/nrtllist.html>





Electrical Safety Alert



Apple Power Adapter Breaks in Outlet When Unplugged

Lessons Learned

- **Inspect your plug-connected equipment before each use.**
- **Be attentive to equipment condition as you unplug. Equipment that fails while plugged in can present shock hazards!**

What Happened

The Apple power adapter pictured below was powering an Apple (Mac) laptop, plugged in to a 120-Volt outlet. When the user, a Network Engineer, attempted to unplug the power adapter from the outlet, the blade in the “hot” side of the outlet broke free of the power adapter and remained in the outlet.

This condition presented a serious shock hazard to the user. Had he not been attentive to the equipment condition, a serious injury could have occurred. While this incident occurred at home, the proliferation of Apple-branded products encouraged the Network Engineer to share the experience with co-workers.



Broken Blade in “Hot” side of outlet
SERIOUS SHOCK HAZARD!

What You Can Do



Power Adapter With Broken Blade



Original Condition of Power Adapter



UL-Recognized symbol indicates acceptance as a component for use in an overall product



Genuine Volex APC7D Wall Adapter

Perform a visual inspection of your plug-connected equipment before each use. Look for cracks in the plastic, loose parts, and deformed or missing pins. In the case of the Apple-branded power adapter pictured here, both blades should move simultaneously. If the blades move independently, the adapter needs to be replaced.

The power adapter may be replaced as a whole, or the wall adapter portion (Volex APC7D) can be replaced. Genuine Apple-branded products are recommended to avoid counterfeit products. Any replacement product must have NRTL listing or recognition.

DO NOT attempt to remove a broken device from an outlet! Call a Qualified Person to assist in removal and repair or replacement of damaged equipment.

Last year in the United States, over
300 people were killed
by electricity in the workplace.

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(330) 607-2139
Direct Line

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There Exists Electrical Safety for Every Site

**No job is so urgent
nor any action so vital
that we cannot take time
to perform our work safely**

Today's Instructor

Michael Kovacic is a full-time Occupational Safety Instructor and Consultant and President of ES Squared, Inc., a Pittsburgh, PA based organization specializing in electrical safety and lockout/tagout.

Mr. Kovacic has over 20 years of experience in the electrical safety industry. He has participated in or managed teams for safety audits for literally millions of square feet of facility, representing over 150 heavy industrial facilities for major corporations and government organizations. Mr. Kovacic is involved in the development of several computer database applications which aid in the record keeping and reporting portions of the assessment function. He has participated in flash hazard analysis projects for numerous facilities, and has background in accident investigation and legal assistance, and has a strong knowledge of European safety requirements as well.

Mr. Kovacic has an extensive knowledge of various standards, including DOD/DOE requirements and Army, Navy and Air Force safety programs, which has allowed him to successfully conduct various standard and customized courses on the OSHA Standards, the National Electrical Code, and NFPA 70E for the U.S. Department of Labor at the OSHA Training Institute in Chicago, IL., various State OSHA Departments, Federal Aviation Administration (FAA), the American Society of Safety Engineers (ASSE), Bureau of Worker's Compensation (Ohio) and numerous major private corporations such as Aluminum Company of America (Alcoa) and Heinz, and is a specialist in NFPA 70E, including arc flash hazard and safety-related work practices.

Additionally, this expertise in electrical safety and knowledge of standards has allowed for coauthoring and rewriting of complete electrical safety programs for major corporations and government entities around the country.

Due to his expertise and years of experience, Michael Kovacic also provides expert witness testimony both in pre-trial deposition and in court.

His unique experience in engineering, manufacturing, installation, and occupational safety allows him to relate extremely well to students from many different backgrounds.



**In the time it takes you to listen to this presentation,
there will be two
preventable electrical-related workplace accidents**