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ELECTRICAL SAFETY

FACTS AND STATISTICS

- Over 3,000 electrical fires are caused by extension cords each year, resulting in 50 deaths and 270 injuries.
- Large appliances cause nearly 20 percent of consumer-product electrocutions annually.
- U.S. Customs confiscates over \$3 million in consumer electrical products each year, and explains that products with counterfeit certification marks, including CSA, UL and ETL, have not been tested for shock and fire hazards.



SLOGAN

Invest in Electrical Safety

OVERVIEW

Statistics show that sales of electrical products increase during December. The advent of colder weather in many parts of the country, combined with the purchase of electronic products, provides an opportunity to review safety tips on the purchase and use of electrical products.

Large electrical appliances are a major cause of electrocutions. Make sure appliances are purchased from reputable dealers and have been certified by testing labs, such as CSA, UL or ETL. Using a ground fault circuit interrupter (GFCI) can help avoid electric shock.

Portable generators and portable heaters see frequent use during colder months. Following manufacturers' instructions is the first step in avoiding electrical hazards.

Power strips and extension cords do not provide more power, but increase access to electrical outlets. As we try to meet 21st century power needs in homes and buildings with too few outlets to meet needs, our use of power strips and extension cords increases. Use of improperly rated extension cords and power strips is among the causes of thousands of electrical fires each year.

The introduction of counterfeit electrical products into the marketplace is on the rise. Counterfeit electrical products, which have not met testing and safety standards, can cause death, injury and property damage. To avoid electrical hazards caused by counterfeit electrical products, purchase products from reputable distributors and retailers, and check certification marks, such as CSA, UL or ETL.

APPLIANCES, ELECTRONICS AND LIGHTING

If an appliance repeatedly blows a fuse, trips a circuit breaker or has given you an electrical shock, immediately unplug it and have it repaired or replaced. Look for cracks or damage in wiring, plugs and connectors. Use surge protectors to protect expensive electronics.

Check the wattage of bulbs in lamps and light fixtures to make sure they are the correct wattage. Replace bulbs that have a higher than recommended wattage; they are a fire hazard. Make sure bulbs are screwed in securely because loose bulbs can overheat.

Halogen lamps operate at high temperatures. Make sure halogen bulbs do not come into contact with draperies, clothing or other flammable materials.

Combined with shorter days and moving the clocks back to standard time, parents and caregivers often turn to lamps and nightlights to help small children become accustomed to the dark. A number of such lamps and nightlights manufactured and sold today with cartoon-like designs may have a toy-like appearance and are attractive to children. The Electrical Safety Foundation International (ESFI) is warning parents and caregivers that such lights can pose safety hazards when not used properly, and recommends these safety tips:

- Parents and other caregivers should operate electrical lamps and other equipment. Small children should never be allowed to operate portable lamps or nightlights.
- Children should not plug in or unplug portable lamps or nightlights. Instead, remind children to ask an adult for help.
- Parents should check to make sure the proper wattage bulb is being used in lights.
- Consumers should handle nightlights carefully to ensure that the plug blades are fully inserted into the receptacle. Use caution when handling nightlights, and avoid twisting or using pressure, which can cause components to break off and expose wiring. This can result in risks of electrical shock and burns.
- Consumers should make sure the nightlights or lamps they purchase have a safety certification mark, such as the CSA, UL or ETL.

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To avoid disaster, children need to be aware of improper uses of electric items and the consequences of unsafe behavior. Practicing safe electrical habits early in life will be valuable through out adulthood.

FOR HAPPY HOLIDAYS, FOLLOW ELECTRICAL SAFETY TIPS

The Electrical Safety Foundation International (ESFI) is reminding those at home and in the workplace to keep electrical safety in mind when decorating for the holiday season:

- Before decorating, read and follow the manufacturers' instructions concerning installation and maintenance of all decorative electrical products.
- Indoors and out, use lights and other electrical decorations certified by a recognized independent testing laboratory such as CSA, UL, or ETL.
- Outdoors, use lights and other electrical decorations certified for outdoor use.
- Carefully inspect each decoration before plugging into an outlet. Cracked, frayed, loose or bare wires, and loose connections may cause a serious electric shock or start a fire. Replace damaged items.
- Always unplug an electrical decoration before replacing light bulbs or fuses.
- Don't mount or support light strings in any way that might damage the cord's insulation. Never nail or staple light strings or extension cords.
- Do not connect more than three light string sets together. Light strings with screw-in bulbs should have no more than 50 bulbs connected together.
- Don't overload extension cords – they can overheat and start a fire.
- Keep all outdoor extension cords and light strings clear of snow and standing water and well protected from weather.
- Use caution when decorating near power lines. Contact with a high-voltage line could lead to electrocution.
- Never use electric lights on a metallic tree. The tree can become charged with electricity from faulty lights, and a person touching a branch could be electrocuted.
- Don't allow children or pets to play with electrical decorations. Even small light decorations can produce a deadly electric shock if they are misused.
- Turn off all electrical decorations before leaving home or going to bed.
- Plug outdoor electric lights and decorations into circuits protected by ground fault circuit interrupters (GFCIs). Portable GFCIs can be purchased wherever electrical supplies are sold.

PORTABLE HEATER SAFETY

ESFI offers the following safety tips and precautions regarding space heaters, baseboard, and in-wall heaters as you head into cooler weather:

- Electric in-wall fan heaters should be cleaned a minimum of twice per year.
- Keep all furniture, draperies, and other household objects at least three feet from the in-wall fan heaters and 12 inches from baseboard heaters. Keep portable space heaters at least three feet away from all flammable materials, such as furniture and draperies.
- Plug portable space heaters directly into the outlet; do not use an extension cord.
- If an in-wall or baseboard heater is shut off at the circuit breaker, be sure to lock or tag the circuit breaker to prevent someone from inadvertently turning it back on.
- If installing a new heater, read all information labels, follow all safety precautions, and verify the electrical supply wires are rated high enough for the electrical demand of the heater.
- Some portable space heaters, electric in-wall fan heaters and baseboard heaters have been subject to product recalls. Check your brand and model number and visit www.cpsc.gov for possible information on your heater.

Check out ESFI's Indoor Electrical Safety Check booklet to help make your home electrically safe this fall.

PORTABLE ELECTRIC GENERATORS

Portable electric generators are a good source of power for heat, light, refrigeration and cooking during electrical outages. But, if generators are improperly installed or operated, they can become deadly, notes the Electrical Safety Foundation International (ESFI). Safety awareness can prevent needless deaths.

- Never operate the generator in enclosed or partially enclosed spaces, including homes, garages and basements. Generators produce high levels of carbon monoxide very quickly, a colorless, odorless, deadly gas.
- Keep the generator dry. To protect it from moisture, operate on a dry surface under an open canopy-like structure.
- Plug appliances directly into the generator. Or, use a heavy-duty outdoor-rated extension cord that is rated in watts or amps at least equal to the sum of the connected appliance loads.
- Do not connect your generator directly to your household wiring, as this can backfeed along the power lines and electrocute anyone coming in contact with them, including lineworkers making repairs.
- Make sure the generator is properly grounded.
- Do not overload the generator. A portable generator should be used only when necessary, and only to power essential equipment or appliances.
- Make sure fuel for the generator is stored safely, away from living areas, in properly labeled containers, and away from fuel-burning appliances. And before re-fueling, always turn the generator off and let it cool down.
- Turn off all appliances powered by the generator before shutting down the generator.
- Follow the manufacturer's instructions for safe operation and maintenance.

Keep children away from portable generators at all times.

ELECTRICAL CORD SAFETY

Extension cords, with their ability to bring any appliance or lamp within easy reach of an electrical outlet, are one of the most convenient products in the home. But when they are misused, they can also be a source of potential danger.

Extension cords are generally rated in amps and volts. To determine if an extension cord is properly rated, add the total wattage of each bulb or electrical device, then divide by 120 to calculate the total number of amps. If the total number of amps is equal to or greater than the maximum rating of the cord, you must use a higher rated extension cord.

If you were to use a thin cord for a device that draws a lot of current, such as an electric space heater, the cord could overheat and start an electrical fire.

Select the right cord for the job. Larger appliances and power tools use cords with three prongs, or conductors, one of which is the ground wire.

Choose a replacement cord with the correct insulation. Electric space heaters, for example, are required to use cords with a thermosetting insulation to prevent the cord from melting. Look for the letter "H" on the cord.

Lamp cords are usually flat, and the individual conductors parallel to each other. This type of cord is limited to indoor use and light duty. Appliance cords are usually round and have larger diameters because they are made using two layers of insulation over the copper conductors. The individual conductors are insulated and a second layer of insulation, called a jacket, is also applied.

- The U.S. Consumer Product Safety Commission (CPSC) estimates that over 300 people are killed or injured each year as a result of fires caused by extension cords. The CPSC reports that improperly

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functioning extension cords cause 3,300 residential fires annually. To reduce extension cord hazards:

- Never run extension cords through walls, under rugs or furniture, or across doorways.
- Never try to repair a damaged extension cord with electrical tape; instead, replace it.
- Never overload an extension cord. If any part of the cord feels warm to the touch, the cord is drawing too much power and could present a fire or shock hazard.
- Never cut off the ground pin to connect a 3-prong appliance cord to a 2-wire extension cord or receptacle. Always use a CSA, UL or ETL listed adapter for this purpose.
- Replace older extension cords if one of the prongs in the plug is not "polarized." In a polarized plug, one prong will be wider than the other.
- Avoid placing cords where someone could accidentally pull them down or trip over them.
- Always plug an appliance into the extension cord before plugging the extension cord into a wall receptacle. Make sure the appliance is turned off before plugging it in.
- When disconnecting an extension cord, always pull from the plug, never the cord itself.
- Cover unused outlets on the extension cord to prevent children from making contact with a live circuit.
- Before buying any extension cord, check the product to ensure that a nationally recognized laboratory, such as CSA, UL, or ETL, has certified the product.
- Use special, heavy-duty extension cords for high-wattage appliances such as air conditioners, portable electric heaters and freezers.
- When placing furniture or an appliance directly up against a wall where a cord is plugged into a receptacle, use a low-profile type of plug. These plugs will let the appliance or furniture get closer to the wall, and there is less chance of the plug coming loose.
- Outside the home, use extension cords designed for outdoor use.

Finally, make sure that you have not overloaded any circuit or extension cord. Remember that extension

cords are not intended to permanently extend a home's wiring system.

Before any work is done on your electrical system, always disconnect power from the circuit breaker panel or fuse box before attempting to replace a worn or damaged wall outlet, or call a licensed electrician to perform the work.

COUNTERFEIT ELECTRICAL PRODUCTS POSE MAJOR SAFETY HAZARDS

Trademark counterfeiting has reached the electrical sector. Counterfeiters have targeted well-known industrial and consumer brands, and registered certification marks of testing and certification laboratories. Counterfeit electrical products can pose significant safety hazards and left undetected, can cause deaths, injuries and substantial property loss in the home and the workplace, according to the Electrical Safety Foundation International (ESFI).

The electrical products targeted by counterfeiters apply to those used by both consumers and industry. The list includes control relays for industrial equipment, lamps, electronic lamp ballasts, dry cell batteries, lithium ion batteries, smoke detectors, fuses, circuit breakers, electrical receptacles, ground fault circuit interrupters, conduit fittings, power strips and surge suppressors, electrical cordsets (extension cords), power cords, telecommunications cable, and electrical connectors.

While some counterfeit products appear as excellent copies of the genuine product, investigations show that many are substandard and fail to pass minimum safety tests. Detection based on appearance can be difficult, and may only be determined by opening suspicious products and performing tests. Counterfeit electrical products may contain inferior materials, with little or no concern for consumer and workplace safety.

Counterfeit electrical products can overheat or cause short circuits and lead to fire, shock or explosion. For

example, some counterfeit dry cell batteries use designs that fail to prevent explosion in electronic products when mistakenly installed backwards. Counterfeit electrical cord sets may contain thinner wire gauges than normally required, posing fire hazards.

Often, counterfeiters use inferior materials and avoid key manufacturing steps to reduce the cost of their products, allowing them to be sold at prices no genuine brand manufacturer can match. For the unsuspecting consumer of this product, the risk of fire causing injury to person or property is substantially enhanced. Counterfeit electrical wire and cable products can contain substandard materials or eliminate product design requirements established by product safety standards used in product certification. Other counterfeit electrical products, such as control relays, fuses, receptacles, and circuit breakers, are often poorly designed and use parts that are substandard and incompatible. Many lack safety features and fail prematurely, creating the risk of damage to person or property. The use of counterfeit conduit fittings, inaccurately represented as suitable for hazardous locations, could have been catastrophic because they were not designed to prevent explosion.

ESFI noted that the following tips could help avoid potentially dangerous counterfeit electrical products:

- Look for the CSA, UL or ETL-SEMKO Certification marks. If you have concerns about the marks, contact the certifier.
- Buyers should 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. Fly-by-night vendors may not be willing to grant refunds for electrical products that do not perform as they should.
- Check the warning label. It should be free of grammatical errors and not conflict with information elsewhere on the package.
- Look for the name and contact information of the manufacturer. If this information is missing, considering purchasing electrical products elsewhere.
- Avoid no-name products.



ADDITIONAL RESOURCES AND LINKS

For more on consumer product safety, contact the Consumer Product Safety Commission at www.cpsc.gov. For information on product recalls, visit www.recalls.gov. For more on work place safety, contact the U.S. Department of Labor's Occupational Safety and Health Administration at www.osha.gov.