

Panasonic's Environmental Policies

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ECO-MANUFACTURING

Over the life of a product — from concept to retirement — manufacturing can often have the biggest impact on the environment. Panasonic is committed to making sure the manufacturing of Toughbook® rugged laptops has the smallest environmental effect possible.

Panasonic's eco-friendly computer manufacturing policy mandates that all products are built using lead-free soldering. Lead can trigger brain and blood disorders — especially in children — if the metal is accumulated in the body. Toughbook mobile computers also are increasingly manufactured with fewer halogenated plastics. These plastics are widely used for their fire-resistant attributes but they can emit toxic gasses when incinerated. In addition, all Toughbook laptops are manufactured with minimal use of plastic resins, which makes the products easier to recycle.

Not only are the materials that make up Toughbook laptops getting more environmentally-friendly, the factories that manufacture them are as well. In fiscal year 2006, Panasonic introduced the Clean Factory Accreditation System, which is based on tough global environmental standards such as ISO 14000 and includes global warming prevention guidelines. Panasonic's basic principle for the Clean Factory initiative is reducing inputs to — and discharges from — company factories. In order to be labeled a Clean Factory, a plant must recycle 98 percent of the waste it generates.

The accreditation determined that 250 of Panasonic's 319 factories — 78 percent — were indeed Clean. Panasonic is working to make the rest of its factories Clean.

ENVIRONMENTAL COMPLIANCE

Worldwide, there are numerous environmental regulations and guidelines — set forth by the private sector and government — that Panasonic strives to meet. All Toughbook® product lines meet these standards including EPEAT, ISO 14000, RoHS and Energy Star. Panasonic is not only dedicated to meeting these standards but also to surpassing them.

PANASONIC CONTINUES TO REDUCE GLOBAL FOOTPRINT

"Panasonic is committed to being environmentally responsible. I personally believe that we can continue to dramatically reduce our environmental impact by working together as a team. Our continued commitment to understanding and preserving the delicate systems of our Earth enables us to design and produce environmentally-friendly products."

-Jim King, Panasonic Computer Solutions Company vice president

EPEAT

All Panasonic Toughbook laptops are certified as "Silver Compliant" by an environmental impact scoring system known as the Electronic Product Environmental Assessment Tool (EPEAT). The program is overseen by a board of eco-advocates, electronics recyclers and others to help purchasers compare and evaluate computer desktops, laptops and monitors based on their environmental attributes. EPEAT grades factors such as elimination of environmentally-sensitive materials and energy conservation. The Silver Compliant designation guarantees that Toughbook environmentally-friendly computers meet all 23 required criteria of the system as well as 50 percent of optional criteria.

ISO 14000

Panasonic Toughbook mobile computers are compliant with all International Organization for Standardization (ISO) rules dealing with reducing energy use, limiting waste and increasing recycling. In accordance with ISO 14000 standards, Panasonic has also established an environmental control policy to continually monitor environmental performance as well as educate employees about these procedures.

RoHS

As a green computer company, Panasonic has been proactive in complying with directives that restrict the use of toxic materials. Toughbook laptops and all Panasonic products since 2006 have been compliant with one of the most rigid directives, the European Union's Restriction on Use of Certain Hazardous Substances, which greatly limits the use of lead, mercury, cadmium and other dangerous materials in electronics.

ENERGY STAR

Panasonic Toughbook environmentally-friendly laptops have earned the ENERGY STAR seal of approval. ENERGY STAR, a joint program between the U.S. Environmental Protection Agency and U.S. Department of Energy, offers voluntary certification for products that are energy efficient. Panasonic has accomplished this through the use of advanced circuitry that uses 81 percent less energy than conventional circuitry. Panasonic is proud of its involvement with ENERGY STAR because the program has substantially reduced greenhouse gasses and saved consumers \$16 billion on utility bills in 2007 alone.

ENERGY SAVINGS

Toughbook mobile computers use less energy because they're installed with either Intel low or ultra low voltage chips. Intel's ultra low voltage chips consume only 5.5 watts of power at most, allowing Panasonic to build select laptops without cooling fans. This fanless design saves energy while keeping out water and dust. The design also reduces weight and noise while eliminating points of failure.

Other Toughbook attributes that reduce energy consumption include:

- * Power management features such as hibernation and ACPI BIOS
- * State-of-the-art LCD technology that provides superior sunlight viewability while minimizing power consumption
- * High efficiency Light Emitting Diode (LED) backlighting on select models that is designed to operate on a minimum of milliwatts
- * Highly adjustable brightness controls which make screens dimmer while maintaining high usability. The dimmer the screen, the less energy used
- * Wireless on/off switches that disable wireless components to reduce energy consumption

REDUCTION OF WASTE

Toughbook laptops are designed with more resilient materials than other mobile computers. One example is the use of eco-friendly magnesium alloys, which are lightweight and have high corrosion resistance. These materials correlate to longer life spans — and less waste. In addition, Toughbook computers have other attributes that make them better to use and safer for the environment including batteries that have longer life spans and require fewer charges. The U1 ultra-mobile PC operates nine hours on one charge, and many Toughbook laptops come equipped with a battery that can run seven hours in-between charges.

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