

## PRODUCT BASED ENVIRONMENTAL REGULATIONS ALERT

**Waste Electrical and Electronic Equipment (WEEE) Directive now in effect.  
Restriction of Hazardous Substances (RoHS) Directive becomes effective July 1, 2006**

As electronics products proliferate throughout the world, concerns have developed over the effect on landfills from discarded electronics products. Technological progress creates demands for newer products; old products end up as mountainous volumes of waste. In



addition, recycling often take the highest toll on the poorest of the poor nations, to whom the developed nations ship their obsolete CRTs, printed circuit boards, computers and other electronic scrap. In developing nations such as India, China and the Philippines, manual labor is often used to separate valuable, but toxic, materials from CRTs and other products; this puts the laborers who perform this duty at risk for illness and other maladies contracted by contact with these substances. Clearly, some effort must be mounted to address these concerns and to try to stem the tide of

electronic waste, *product-based environmental regulations* are becoming more common worldwide. Several new Directives are coming into force in the European Union and various requirements are coming to the US and other countries. If you produce electrical or electronic products, these directives most likely apply to you.

Manufacturers now must consider the life cycle management of products from initial design through recovery and recycling. Many companies are finding that, in order to manage these new requirements, additional business resources are necessary.

Following is a list of the new regulations manufacturers need to be aware of as well as specific information on the two Directives with the greatest immediate impact, the RoHS and WEEE directives.



## EUROPE

**RoHS DIRECTIVE (2002/95/EC):** Restriction of Hazardous Substances.

This Directive limits use of lead, cadmium, mercury, hexavalent chromium, PBB and PBDE in electronic products effective July 1, 2006.

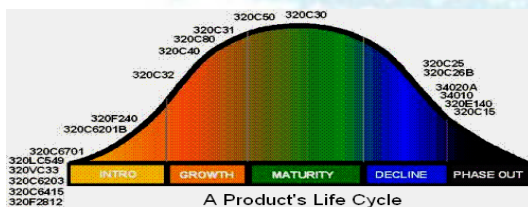
**WEEE DIRECTIVE (2002/96/EC):** Waste Electrical & Electronic Equipment. This Directive requires producers to manage post-consumer recycling and disposal of electronic products effective August 13, 2005.

**EuP DIRECTIVE (2005/32/EC):** Energy-using Products.

This requires producers to design products to meet specific eco-design criteria over entire life cycle effective 2007 for certain specific products.

**REACH DIRECTIVE:** Registration, Evaluation and Authorization of Chemicals.

This requires registration and risk assessment of chemical substances effective 2007.



## USA

Some states are restricting the use of RoHS substances. For example, California has the Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65) which prohibits contamination of drinking water with certain chemicals. Massachusetts has the Toxics Use Reduction Act which is aimed at reducing unnecessary use of toxic chemicals.

Some states are enacting or considering WEEE laws. For example, California has the Electronic Waste Recycling Act of 2003 which provides for collecting and recycling of computers and TVs.

California also has new energy efficiency standards for certain electronic products.

## CHINA

China has management methods similar to RoHS effective January 18, 2006.

Developing regulations parallel to WEEE.

Has new energy efficiency standards for certain products.



## RoHS Directive:

The RoHS Directive restricts the use of lead, mercury, cadmium, hexavalent chromium and the flame retardants polybrominated biphenyls (PBB) and polybrominated diphenyl ethers (PBDE). The directive covers all equipment dependent on electrical currents or electromagnetic fields in 8 categories:

1. IT / Telecommunications
2. Electrical and Electronic Tools
3. Consumer Equipment
4. Large Household Appliances
5. Small Household Appliances
6. Lighting Equipment
7. Toys, Leisure and Sport
8. Automatic Dispenser

A key issue is how manufacturers will have to change their production process in order to eliminate these restricted substances. Another issue is how to show compliance with the requirements. The directive specifies the amount of these substances that are permissible, however, there are no compliance criteria provided. The good news is that the requirements must be the same for each country in the European Union. The directive allows for

Self-Declaration; the problem is that there are currently no harmonized standards or test methods. Various working groups are drafting standards but none have been adopted yet and it does not appear that any will be published prior to the July 1, 2006 deadline. Therefore, manufacturers are left to decide themselves how to show compliance.

One option is to perform materials testing on all homogeneous materials (components that cannot be mechanically separated into different materials). The most common test methods are X-Ray Fluorescent screening using EDXF or XRF equipment. For more detailed analysis, Gas Chromatography and Mass Spectroscopy equipment can be used. Another option is to obtain declaration of conformity from each supplier for all materials used in their product. However, the manufacturer is then relying on an external (and by its nature, uncontrolled) declaration in order to claim compliance for the final product as ultimately responsible. Therefore, manufacturers must decide whether or not to accept the declarations, or to do limited materials testing, or to perform full materials testing. In the future it may be that a



management system is in place to track parts, such as a database of certified materials, so that not everyone is testing the same materials. Once you have determined how your company is going to prove compliance, you must then determine how to report this information, as no common format currently exists.

The RoHS directive will be enforced by market surveillance. The UK currently has an enforcement plan in place and can be found at [www.rohs.gov.uk](http://www.rohs.gov.uk). Other countries are still working on their enforcement methods. There are no marking requirements for products per this directive.

### **WEEE Directive:**

The WEEE Directive requires producers to manage post-consumer recycling and disposal of electronic products. The directive covers all equipment dependent on electrical currents or electromagnetic fields in 10 categories:

1. IT / Telecommunications
2. Medical Devices
3. Monitoring and Control Instruments
4. Electrical and Electronic Tools
5. Consumer Equipment
6. Large Household Appliances
7. Small Household Appliances
8. Lighting Equipment
9. Toys, Leisure and Sport
10. Automatic Dispenser

The key issue for the WEEE directive is the principle that producers are financially responsible for the collection and treatment of electrical and electronic equipment waste based on the amount of products that they place on the

market. Each country will implement a recycling scheme that will involve recyclers, administrators, and a fee structure, which means that each member state could have different requirements. There will be a registration agency in each member state. Companies must keep records on how much product they place on the market and report this to the agencies. The European representative of the company register with the agencies (except in Germany; US exporters can register directly).

The WEEE directive does require that the equipment be marked with the “wheelie bin” mark per EN50419, along with the date of shipment to Europe. Since this directive is in effect now, you must place this symbol on your product now if your equipment is within the scope of the directive. Although the recovery and recycling programs are not yet in place, this



at least informs consumers not to put the product into the general garbage.

Washington Laboratories provides consultation services in regards to these Directives.

If you have any questions or would like further assistance with these directives, please feel free

to contact Berri Remenick at 301-473-1255 or e-mail [berrir@wll.com](mailto:berrir@wll.com).

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## New EMC Directive Comes into Force July 20, 2007.

Question: *What the heck does that mean?*

Answer: Really not much, unless you have something that's affected. Read on for changes affecting fixed installations, notified bodies and flying monkeys.



Directive 2004/108/EC, so lyrically moniker-ed: *On the Approximation of the Laws of the Member States Relating to Electromagnetic Compatibility and Repealing Directive 89/336/EEC* was released on December 15, 2004. The Directive established a transition period and repeal date for the old Directive of July 29, 2007.

The transition period requires that Member States adopt and publish the laws, regulations and administrative provisions necessary to comply with the Directive by January 20, 2007. The provisions shall apply by July 20, 2007. Transitional provisions require the Member States to not impede the “placing on the market” and/or “putting into service” equipment which is compliant with provisions of Directive 89/336/EEC. This provides for a two year period of overlap between the implementation of the new directive (July 20, 2007). The “old” Directive is history on July 20, 2009; equipment solely conforming to said to-be-expired Directive must not be placed on the market after that date.

Directive 2004/108/EC embodies two essential requirements:

## 1) Protection requirements

Equipment shall be so designed and manufactured, having regard to the state of the art, as to ensure that:

a. the electromagnetic disturbance generated does not exceed the level above which radio and telecommunications equipment or other equipment cannot operate as intended.

b. it has a level of immunity to the electromagnetic disturbance to be expected in its intended use which allows it to operate without unacceptable degradation of its intended use.

## 2) Specific requirements for fixed installations

### Installation and intended use of components

A fixed installation shall be installed applying good engineering practices and respecting the information on the intended use of its components, with a view to meeting the protection requirements set out in point 1. Those good engineering practices shall be documented and the documentation shall be held by the person (s) responsible at the disposal of the relevant national authorities for inspection purposes for as long as the fixed installation is in operation.

Compliance to the essential requirements is demonstrated by test and evaluation using the applicable harmonized standards, preparing the associated technical file and declaring conformity, the fundamental compliance route used for Directive 89/336/EEC. If harmonized standards are not used, the documentation shall be presented to a Notified Body for assessment and the attestation of the Notified Body shall be incorporated into the technical file.

However the provisions for testing to the harmonized standards are not compulsory for the special case for fixed installation equipment.

What prevents the network printer from being declared as fixed installation equipment?

Article 13 of the directive states that the fixed installation "...otherwise not commercially available" presenting the intent to define the fixed installation as a unique configuration with limited distribution. In addition the documentation associated with a unique file preparation for each installation justifying compliance declarations would not be economically sound for commercial products. And the reminder in given that if an issue is brought forward the manufacturer is responsible to make changes to resolve the issue.



Qualifying your commercial product to the new directive may be started prior to the implementation the same standards apply and only the declaration to 2004/108/EC is necessary. Acceptance of “good engineering practices” as the route to compliance for fixed installations is not generally acknowledged as acceptable prior to implementation.



Now, you can't ask flying monkeys to help you out. But Washington Laboratories, Ltd can provide support as

you bring your products into compliance with Directive 2004/104/EC, including the engineering analysis to support the “good engineering practices” for EMC compliance for fixed installation equipment. Bringing us in at the beginning of your project allows us to guide the installation of EMC control measures and document the guidance to aid your design teams, and ensure that the final design will support the definition of “good engineering practices”. For more information e-mail us: [info@wll.com](mailto:info@wll.com).

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