



EU directives WEEE and RoHS

Information and notes

Active support from Weidmüller

The new EU directives, WEEE and RoHS, affect everyone – from manufacturers to end-users. As a leading manufacturer of components for electrical connection technology, Weidmüller already offers products with virtually complete WEEE and RoHS conformity. This brochure aims to give you the most important information on the new EU directives at a glance: definitions, classifications, disposal regulations and components which Weidmüller will have modified by the end of 2005.

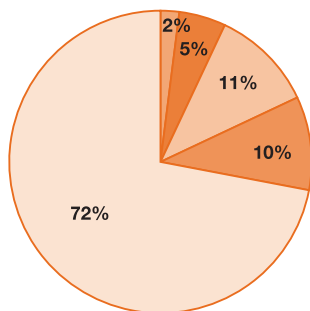
Weidmüller offers you all the assistance you need, particularly when it comes to lead-free soldering. With components that are designed for all soldering processes and a team of experts who can offer reliable advice on the following topics:

- Optimising logistics when converting to lead-free soldering
- Improving your systems in conjunction with PCB terminals
- Dealing with higher soldering temperatures

We offer you active support during the conversion process required by the EU directives WEEE and RoHS. Just ask!

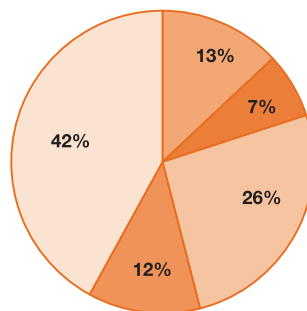
Electronic waste: quantities and reprocessing costs

KG



Predicted quantities as of 2005: 1.1 million tonnes p.a. in total

EUR



Predicted total costs as of 2005: 350 to 500 million euros p.a.

- Large household appliances
- IT and telecommunications equipment
- Miscellaneous
- Consumer electronics
- Small domestic appliances

The diagrams show the costs and quantities predicted for Germany as of 2005. For the purposes of comparison, Europe generated 6 million tonnes of electronic waste in 1998.

Scope of the EU directive WEEE

WEEE is EU directive 2002/96/EC of the European Parliament and of the Council on waste electrical and electronic equipment.

The purpose of this Directive is, as a first priority, the prevention of waste electrical and electronic equipment (WEEE), and in addition, the reuse, recycling and other forms of recovery of such wastes so as to reduce the disposal of waste.

It also seeks to improve the environmental performance of all operators involved in the life cycle of electrical and electronic equipment, e.g. producers, distributors and consumers and in particular those operators directly involved in the treatment of waste electrical and electronic equipment.

The objectives of WEEE

- Limiting the overall quantity of waste equipment for final disposal.
- Mastering the ever-increasing flow of waste electrical and electronic equipment. The quantity currently grows by 16–28 % every 5 years.
- Increasing the amount of electrical and electronic equipment which is recycled to achieve a recovery rate of 75 %, with 65 % (by weight) being reused and recycled by 12/2006.
- Defining new goals by 12/2008.
- EU-wide collecting systems from August 2005.

Scope of the EU directive RoHS

RoHS is EU directive 2002/95/EC of the European Parliament and of the Council on the restriction of certain hazardous substances in electrical and electronic equipment.

It aims to regulate the use of hazardous substances in appliances, and thus contributes to the protection of human health and recovery or disposing of waste electrical and electronic equipment in an eco-friendly way.

Certain hazardous substances, such as lead, may no longer be used in electrical and electronic equipment which goes into circulation as of 01/07/2006.

The objectives of RoHS

- Protecting human health.
- Reducing the amount of hazardous substances in waste by limiting such substances in products and production processes. For example, 40–50 % of lead at disposal sites or in heat-treated waste comes from waste electrical equipment.
- Complementing EU directive WEEE in the field of hazardous substances.
- Approximate the laws of the Member States.
- Substances exempt from this ban will be checked every 4 years.

NB:

The EU directives WEEE and RoHS should only ever be considered together!

Appliance categories

The following categories of electrical and electronic equipment covered by the EU directive WEEE:

WEEE

- 1 Large household appliances
- 2 Small household appliances
- 3 IT and telecommunications equipment
- 4 Consumer equipment
- 5 Lighting equipment
- 6 Electrical and electronic tools
(with the exception of large-scale stationary industrial tools)
- 7 Toys, leisure and sports equipment
- 8 Medical devices (with the exception of all implanted and infected products)
- 9 Monitoring and control instruments
- 10 Automatic dispensers

The EU directive RoHS applies to the following categories of electrical and electronic equipment:

RoHS

- 1 Large household appliances
- 2 Small household appliances
- 3 IT and telecommunications equipment
- 4 Consumer equipment
- 5 Lighting equipment
- 6 Electrical and electronic tools
(with the exception of large-scale stationary industrial tools)
- 7 Toys, leisure and sports equipment
- 8 Automatic dispensers
- 9 Household light bulbs and lamps

The guidelines only apply to the electrical and electronic equipment listed in the various appliance categories and components used in those appliances.



RoHS – hazardous substances

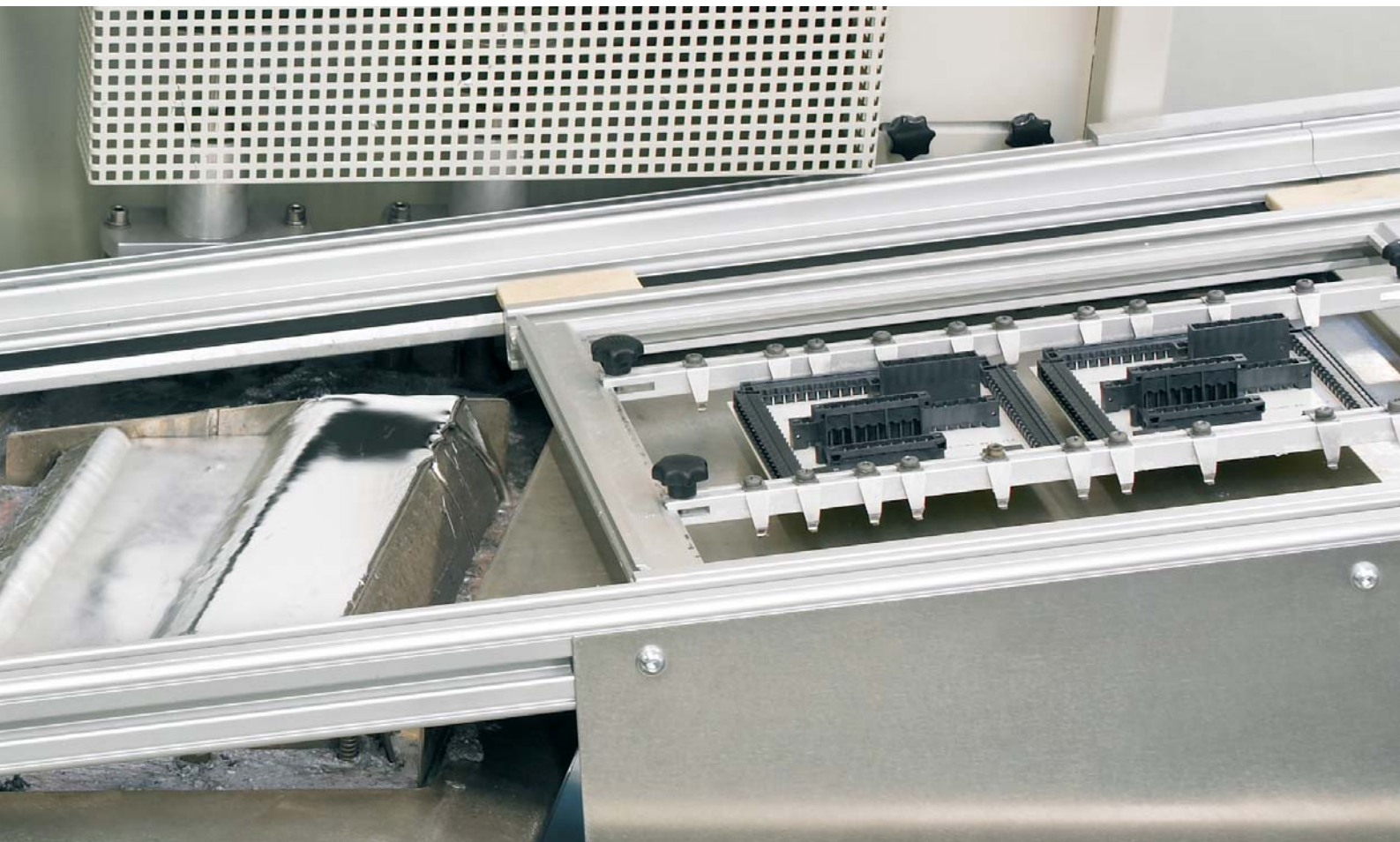
From 01/07/2006, the following hazardous substances in electrical and electronic equipment covered by the appliance categories are banned under the EU directive:

Hazardous substances	Areas of application
Lead	Electronics (PCBs, components, solders), surface protection
Mercury	Alloying constituents
Cadmium	Colourants
Hexavalent chromium	Corrosion protection for metal components
PBB (Poly Brominated Biphenyl)	Flame retardants in plastics
PBDE (Poly Brominated Diphenyl Ether)	Flame retardants in plastics

Higher soldering temperatures

From 01/07/2006, greater requirements are made of components due to the ban on lead under RoHS. The table below gives you an overview of the new solders that may be used and the corresponding soldering temperatures:

	Material	Soldering temperature	Note
Old	SnPb (tin/lead)	220 °C	Standard alloy banned as of 2006
New	SnCu (tin/copper)	270 °C	Components must be specially designed (resistant to soldering temperature)
	SnAgCu (tin/silver/copper)	260 °C	Solder paste currently recommended, best results with various alloy percentages
	SnAgBi (tin/silver/bismuth)	230 °C	Lower soldering temperature



Return concept

Weidmüller's WEEE policy

We will, of course, take back any equipment affected by WEEE once their life cycle is over!

BtoB products (business to business)

These are, for example, products Weidmüller supplies to wholesalers or distributors who only sell them on to trade customers, or deliveries made to large-scale or individual customers who use these products commercially. According to WEEE, the equipment affected can be returned to the manufacturer free of charge from 13/08/2005. This category encompasses Weidmüller products such as printers and machines.

BtoC products (business to customer)

Private end-users who bought their products directly from us or from DIY shops/specialist stores can dispose of them directly at local collection points.

Appliance manufacturers are responsible for financing collection points as well as for treating, recovering and disposing of the equipment.

Dual-use products

This refers to products where it is impossible to draw a clear line between BtoB and BtoC. Weidmüller products such as electrical testers or power tools belong to this category. They are accepted by local collection points.

WEEE equipment from Weidmüller

The following products conform to the categories given and are distributed by Weidmüller and accepted back in line with the regulations.

- Printers (PrintJet, etc.)
- Machines (CrimpFix, etc.)
- Electrical testers (LSP1 tester, etc.)
- Power tools (DMS3 cordless screwdriver, etc.)

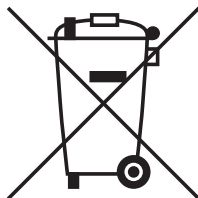
No other products are affected by take back obligation of the EU directive WEEE.

Uniform labelling

This directive symbol is valid throughout the EU.

WEEE

All products which can be returned by end-users must bear this symbol in order to prevent them being discarded with household waste.



The following symbols are specific Weidmüller logos.

RoHS

All products and components which are lead-free and can be used in lead-free soldering processes bear this symbol on their packaging.



All products and components which fully comply with the RoHS substance ban bear this symbol on their packaging.



There are plans to develop a uniform international labelling system.

Converting to lead-free soldering processes

Combinations of lead-free components and solders/PCBs containing lead

We have tested combinations for you: no reduction in the quality of the soldering joint was observed when mixing a soldering wave containing lead with lead-free pin blocks. When using lead-free soldering equipment, the use of products containing lead is not to be recommended for financial reasons, as they contaminate the soldering bath. Here too, no reduction in the quality of the soldering joint was observed. Our PCB components are suitable for all standard soldering processes, whether they involve the use of lead or not (e.g. following the ZVEI reflow soldering profile). This makes our

SMT/THR products compliant with all existing - and especially lead-free - soldering processes such as hand, wave and reflow soldering thanks to state-of-the-art high-temperature insulation materials (LCP - liquid crystal polymer).

Preventing whisker growth

We have taken all precautions to prevent whisker growth: instead of using an electrolytic capacitor, the tin coatings are applied hot. The pin blocks, contacts, etc. are plated using molten tin with fixed coating thicknesses.

Adapting electroplating

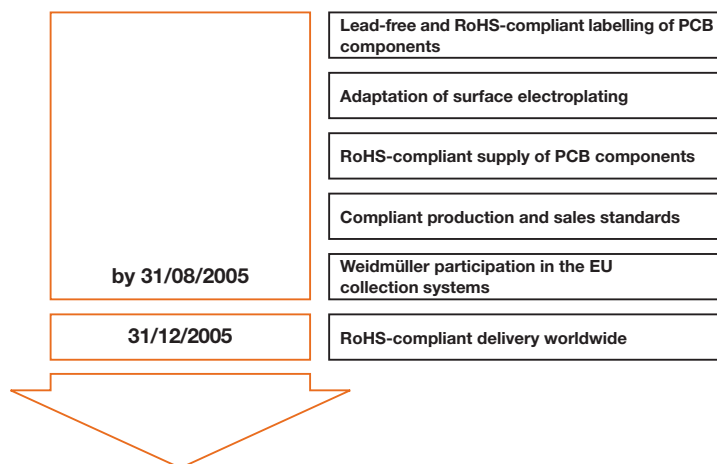
New surface system at Weidmüller

Systems drawing on Cr III-based thick-film passivation offer superior protection in line with yellow chromating. There is thus no reduction in quality compared with Cr VI-based yellow chromating.

Our new surface system has passed the following tests with flying colours:

- Compliance with the required corrosion resistances in the salt spray corrosion test according to DIN 50021-SS.
- Corrosion resistances following the SO₂ test DIN 50018-KFW.
- Examination of the thread coefficient of friction and the mechanical running of the screws.
- Trial mounting with subsequent corrosion test and torque check.

Road map



NB

For further information, go to our website www.weidmueller.com.

www.weidmueller.com

Argentina	Indonesia	Saudi Arabia
Australia	Iran	Singapore
Austria	Ireland	Slovakia
Bahrain	Israel	Slovenia
Belarus	Italy	South Africa
Belgium	Japan	South Korea
Bosnia- Herzegovina	Jordan	Spain
Brazil	Kuwait	Sweden
Bulgaria	Latvia	Switzerland
Canada	Lebanon	Syria
Chile	Lithuania	Taiwan
China	Luxembourg	Thailand
Colombia	Macedonia	Turkey
Costa Rica	Malaysia	Ukraine
Croatia	Morocco	United Arab Emirates
Czech Republic	Mexico	United Kingdom
Denmark	Netherlands	USA
Egypt	New Zealand	Venezuela
El Salvador	Nicaragua	Vietnam
Estonia	Norway	Yemen
Finland	Oman	Yugoslavia
France	Pakistan	
Germany	Panama	
Greece	Paraguay	
Guatemala	Peru	
Honduras	Philippines	
Hong Kong	Poland	
Hungary	Portugal	
Iceland	Qatar	
India	Romania	
	Russia	

Weidmüller is the leading manufacturer of components for electrical connection technology. The Weidmüller product portfolio ranges from terminal blocks, PCB connectors and terminals, protected components and relay sockets to power supply and overvoltage protection modules suitable for all applications. Electrical installation and marking material, basic I/O components and a variety of tools round off the range. As an OEM supplier, the company sets global standards in the field of electrical connection technology.

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