



Batteries Directive compliance information:
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Batteries Directive Legislation Compliance

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Introduction to the “new” EU Battery Directive

The European Union (EU) adopted the “Batteries Directive” (91/157/EEC) in March 1991. This introduced restrictions on the use of mercury in most batteries and encouraged collection and recycling. However, the objectives of this Directive were not achieved as most portable batteries were still sent to landfill (although some countries have efficient collection schemes in place). As a result, the EU has introduced, and adopted, a new battery directive (2006/66/EC) that came into force on the 26th of September 2008 and repealed the previous Directive. However, batteries placed on the market on, or before, the 25th September only need to comply with 91/157/EEC.

Definitions

Batteries and accumulators are sources of electricity generated by chemical energy. These may consist of one or more battery cells. For example, small rectangular 9V batteries consist of six individual 1.5V cells connected in series and packaged as one unit. The difference between a battery and an accumulator is not defined by the Directive but the proposed UK regulations define “batteries” as non-rechargeable primary batteries and “accumulators” as rechargeable or secondary batteries. Both are referred to here as “batteries”.

Automotive batteries are:

Used for starting, or the ignition of, a vehicle engine, or

for powering the lights of a vehicle

Industrial batteries are:

Designed entirely for industrial or professional uses

Used for powering electric vehicles

Unsealed but not automotive or

Sealed but not portable

Portable batteries are:

Sealed

Capable of being hand-carried by the average person without difficulty and

Not automotive or industrial

Definition of “Producer”

Producers	Examples
Manufactures and sells batteries in a Member State	Battery manufacturer
Private label owner	Battery distributor or retailer who sells batteries with an own brand label
Domestic OEM selling equipment with batteries	Equipment manufacturer who sells equipment that contains one or more batteries
Battery importer	Distributor or retailer who imports batteries for sale
Importer of appliances and vehicles that contain batteries	Electrical equipment and vehicle importers
EU based distance sellers	Sell batteries or equipment containing batteries to users in a different EU Member State
Distance sellers based outside the EU	Sell batteries or equipment containing batteries to users in an EU Member State

Farnell UK Producer Registration Number - BPRN00563

For UK 2008 and 2009 Regulations - See page 5

Definition and obligations for portable, industrial and automotive batteries

	Portable	Industrial	Automotive
Definition	Sealed, can be hand carried and is not industrial or automotive. UK assumes that this includes any portable, sealed battery that can be used in consumer equipment.	Designed exclusively for industrial or professional use. Intended for electric vehicles as a power source. Unsealed but not automotive. Sealed but not portable.	Used for automotive starting, lighting and ignition. Excludes vehicle power source batteries which are classed as industrial.
Collection targets	25% by September 2012. 45% by September 2016.	100% (landfill and incineration banned).	100% (landfill and incineration banned).
Compliance options proposed for collection and recycling	Either a single national or multiple compliance schemes.	Allow businesses to continue existing private schemes or set up producer compliance schemes.	Allow businesses to continue existing private schemes or set up producer compliance schemes.
Producers obligations	All must register. May need to join a compliance scheme.	All must register. Collect and recycle batteries, join a scheme that does this or may make alternative arrangements with customers.	All must register. Collect and recycle batteries or join a scheme that does this.

Producers' obligations

All battery producers will be obliged to register in each EU State where they place batteries on the market (with the possible exception of distance sellers in some States).

Different approaches for portable batteries and industrial and automotive batteries will be adopted in some countries. Collection rates for portable batteries are currently very low in many EU States, including the *UK (although countries such as Germany, Holland and France already have efficient portable battery collection schemes in place and these will continue to operate) whereas collection rates for many types of industrial and automotive lead-acid batteries are already very high.

*UK collection rate currently less than 5%, target 25% by 2012

Farnell UK Producer Registration Number - BPRN00563



Portable

Portable batteries are used by both consumers and by industry. These are sold as individual batteries and also in equipment. Primary batteries reach end-of-life (when discharged) before the equipment and so many waste primary batteries will be available for recycling. Rechargeable batteries are sold as individual batteries or in electrical equipment and so many will reach end-of-life when the equipment's life ends. As a result, the user will remove some and others would be removed by WEEE recycling schemes. Therefore any system for collection of portable batteries will need to account for all of these routes.

Options include:

- Take-back by retailers: This could be similar to existing distributor take-back schemes that are available for waste electrical equipment.
- Take-back by battery or equipment supplier: This approach is mainly appropriate for professional and industrial batteries although larger manufacturers could collect batteries from consumers.
- Use of compliance schemes: Several compliance scheme options are in place.
- Companies could be caught under both producer and retailer responsibilities in some countries (such as the UK)

It is probable that a combination of approaches will be used in a similar way that the WEEE Directive is implemented. One option is for the authorities to set targets for collection of waste batteries either for individual producers that have opted to collect batteries or for schemes that collect on behalf of members.

Batteries are already collected by WEEE compliance schemes when waste electrical equipment is disassembled. Most of these batteries will be portable and should be recycled.

Going forward batteries in equipment may have to be reported separately.



Industrial and automotive

If you are a Producer of Industrial and/or automotive batteries you need to register

with BIS in the UK. You will also need to record the amount of batteries you placed on the market.

Although all producers must register, Member States may exclude "Small" producers (who sell only small numbers of batteries) from any obligation to finance collection and recycling of batteries.

For further information visit

www.environment-agency.gov.uk/batteries

Substance restrictions

The Directive will restrict the use of mercury and cadmium in batteries. The mercury restriction is unchanged from the 1991 Battery Directive but the cadmium restriction is new.

- Mercury in batteries except button cells
Maximum of 0.0005% mercury by weight of battery
- Mercury in button cells
Maximum of 2% mercury by weight of battery
- Cadmium in batteries
Maximum of 0.002% cadmium by weight of battery but with three exemptions - Emergency and alarm systems including emergency lighting
- Medical equipment
- Cordless power tools (this exclusion will be reviewed by September 2010 and may be withdrawn)

Note that there is no restriction on lead in batteries but if present at > 0.004% by weight the battery must be labelled with "Pb".

As the End-of-Life Vehicle (ELV) Directive pre-dates the new Battery Directive, the ELV substance restrictions should take precedence over those in the Battery Directive. The UK government interprets this as the concentrations of cadmium and mercury in automotive batteries would be permitted, in theory, to be higher than the Battery Directive's upper limits although in practice, lead-acid batteries are nearly always used and do not normally contain these metals.

Battery labelling requirement

– on the battery unless this is too small then on packaging

Crossed wheelie bin symbol

*Capacity of batteries (see page 4)

was originally required from 26 September 2009

“Hg” printed below wheelee bin symbol if battery contains >0.0005% mercury

“Cd” printed below wheelee bin symbol if battery contains >0.002% cadmium

“Pb” printed below wheelee bin symbol if battery contains >0.004% lead

Information requirements for users

There are also requirements to provide information to consumers on:

Potential effect of substances used in batteries on health and the environment

Not disposing of batteries with other waste

Details of collection and recycling schemes

Explanation of symbols printed on batteries

Member States are likely to require producers, distributors and retailers to provide this information.

*Battery capacity proposals

The European Commission (EC) circulated its proposals for the capacity marking of rechargeable, or secondary, portable batteries during February 2010. Currently there are no proposals for capacity labelling of primary batteries and the commission has not indicated when proposals are likely to be published for these.

The EC was originally due to publish proposals in March 2009 to enter into force during September, twelve months on from the implementation of the new battery directive (2006/66/EC) but has failed to meet the deadline. The proposals are to use IEC/EN standards for calculating capacity.

Portable batteries would be marked by the abbreviations mAh (milliampere hours) or Ah (amp hours) and the regulations will also provide details of the label size and location etc.

Button cells, batteries used as memory back-up and battery packs will be excluded from this regulation. There are also capacity proposals for automotive batteries.

As the regulation will enter into force 18 months plus 20 days after official publication it is unlikely to be in effect before 2012 if not later as many Member States, and

some manufacturers are not happy with the proposals. The problem is that batteries of the same class might be used differently with some designed for high current output whereas others are designed for long life, low current output.

Requirement for easy removal of batteries from equipment

Article 11 of the new Directive affects the design of electrical equipment which must be made in such a way as to allow batteries either for replacement or at end-of-life for disposal to be “readily removed”. However, “readily removed” is not defined; the EC has published brief draft guidance but this is of only limited assistance. Removal may be achieved either by hand or with tools.

This requirement is clearly intended to ensure that equipment users are able to remove batteries by opening a cover by hand or after removal of one or a small number of screws. Lengthy dismantling that takes considerable time would not be permitted. However, the “boundary” is not defined and seems to rely on common sense.

The Directive also requires the producer to provide the user with instructions on how to safely remove the battery and these must be provided with the product.

There are exemptions from this requirement where “for safety, performance, medical or data integrity reasons, continuity of power supply is necessary and requires a permanent connection”. Under these circumstances, the battery can be built in to the product so that its removal is difficult.

Impact on batteries and equipment design

Many millions of batteries are used in the EU, with most of them being made in the Far East. The increase in substance restrictions and the requirement for labelling with Hg, Cd or Pb if present would imply that analysis might be expected if there is a risk of non-compliance.

The requirement to mark batteries with their capacity could have the effect of encouraging consumers to select higher capacity batteries resulting in a shift in the market. Battery capacity is not the only important characteristic of a battery, however, so consumers may need educating to understand their requirements.

The requirement for easy battery removal from equipment has so far not been defined but could, in many cases, require equipment designs to be changed.

Legislation

Many EU States have transposed either some or all of the New Battery Directive's obligations. Some EU States have already set up battery collection and recycling schemes to comply with the original directive and these are likely to continue. Although all manufacturers and importers are obliged to register in

all EU States that they operate, some EU States such as UK plan to exclude "small producers" from financing battery collection and recycling whereas others, such as Netherlands do not exclude small producers from this requirement.

Guidance on the 2008 & 2009 Battery Regulations

2008 UK Battery Regulations

These requirements should be the same in all European Union (EU) Member States.

Chemical restrictions and labelling

Substance restrictions and chemical symbol marking requirements from the UK 2008 regulations are listed in the table below:

Substance	Restriction	Marking required (all batteries)
Mercury	0.0005% except button cells limit is 2%	Hg if > 0.0005%
Cadmium	0.002% in portable batteries*	Cd if > 0.002%
Lead	None	Pb if > 0.004%

* Exemptions from the cadmium restriction apply to medical applications, power tools and emergency and alarm systems including lighting.

The concentrations above are percentage by weight of the battery or battery pack.

Note that batteries in vehicles covered by the ELV (End of Life Vehicles)

Marking batteries

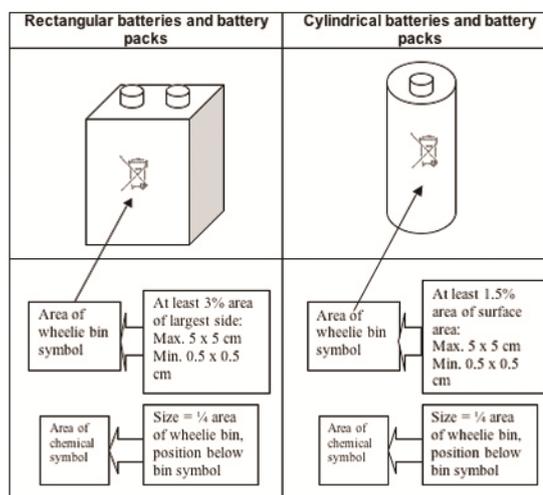
All batteries must be marked with the crossed wheelie bin symbol unless there is insufficient space for a symbol of at least 0.5 x 0.5 cm. If there is not enough space then mark the packaging instead with a symbol of at least 1 x 1 cm.

Also mark batteries (beneath the wheelie bin symbol) with chemical symbols if required (see above table) – the chemical symbols must be marked on the battery even if there is insufficient space for the wheelie bin symbol.

Battery capacity marking - see page 4

Battery packs

Battery pack marking is the same as for batteries sold individually. However, the individual cells within battery packs do not need to be marked as users are not intended to separate cells within packs.



Batteries in electrical equipment

Batteries supplied in equipment have the same substance restrictions and must be marked in the same way as batteries supplied separately. Where there is insufficient space on the battery for the wheelie bin symbol, this is printed on the equipment packaging although there is no need to print this symbol twice if it is already present for compliance with WEEE (Waste Electrical and Electronic Equipment) legislation.

There are specific requirements for equipment design and equipment that is within the scope of the WEEE directive must have the following characteristics:

- Equipment must be designed to enable users to replace batteries.
- Instructions for replacing batteries must be supplied with the equipment.
- The requirement for equipment to be designed to enable the user to replace batteries is interpreted as replacement of batteries in the normal way. It would be acceptable for this to be carried out by a professional engineer if this is standard practice whereas if consumers would normally expect to be able to change batteries, then this must be possible.

There are exemptions from the requirement that replacement of batteries should be possible by the user:

- Safety – removal of the battery creates a safety risk
- Performance – where this would be affected by removal of the battery
- Medical – exemption for all medical devices
- Data integrity – where data would be lost if the battery were removed. If this exemption is utilised, the reasons should be clearly explained in the product's technical documentation.

Enforcement

Enforcement of the 2008 UK battery regulations is the responsibility of NMO (National Measurement Office) who also enforce RoHS in the UK. NMO has already examined batteries from the UK market and found many to be non-compliant. The most common failure is the size of the crossed wheelie bin symbol. Batteries with mercury or cadmium beyond the permitted levels

and batteries with >0.004% lead but not having the Pb symbol are also common. NMO has also found equipment where batteries could not be easily removed or there were no removal instructions supplied with the product.

2009 UK Battery Regulations

Requirements from these regulations may be different to other EU Member States.

Who is responsible?

Producers as defined by:

- Manufacturers of batteries in the UK
- Importers of batteries into the UK from other EU States or outside of the EU
- Manufacturers of equipment in the UK who sell equipment containing batteries
- Importers of equipment containing batteries into the UK from other EU States or outside of the EU
- A UK company that supplies batteries or equipment containing batteries is not a battery producer if they obtain the batteries from a supplier in the UK, and therefore would not have the responsibilities of a battery producer.
- Distributors of batteries and equipment containing batteries also includes retailers. If a distributor imports batteries or equipment containing batteries into the UK, they would also be battery producers.

Note that distance sellers located outside the UK who sell batteries directly to UK users have no responsibilities unlike distance sellers of electrical equipment covered by the UK WEEE legislation.

There are three types of batteries each having different obligations which are summarised below:

	Portable	Industrial	Automotive
Definition	Sealed and can be hand carried and is not industrial or automotive	Designed exclusively for use in industrial applications or for running electric vehicles	Designed specifically for vehicle ignition and lights, etc. Excludes electric vehicle batteries
Registration	Yes if supply < 1 tonne p.a. (via BCS if > 1 tonne)	Yes	Yes
Joining Battery Compliance Schemes (BCS)	Yes if supply > 1 tonne p.a.	Compulsory only if they also sell portable batteries	Compulsory only if they also sell portable batteries
Disposal	Should be recycled (to meet targets)but landfill is permitted	Landfill and incineration are not permitted	Landfill and incineration are not permitted
Collection	Arranged by BCS	Producer take-back industrial batteries	Producer take-back automotive batteries
Reporting	Quarterly sales data to BCS	Sales and collection data to BIS	Sales and collection data to BIS

Portable batteries

Obligations for Producers

Different obligations apply depending on the quantity placed on the UK market. Note that batteries that are exported out of the UK should not be counted. Batteries Put On The Market (POTM) > 1 tonne per year: Producers must join an approved Battery Compliance Scheme (BCS) that will register their members, report relevant data to the authorities and collect and recycle portable batteries. Producers need to report data quarterly and broken down into lead-acid, nickel-cadmium and "other" portable batteries. Producers do not normally need to collect portable batteries unless their battery compliance scheme fails.

Batteries POTM < 1 tonne per year: Producers must register directly with the relevant Environment Agency, there is a £30 fee but do not need to join a BCS.

Distributor obligations

From 1 February 2010, distributors of batteries who

supply more than 32 kg of portable batteries per year must provide take-back facilities and collect all types of portable batteries. This obligation does not apply to UK distributors of equipment that contain batteries unless they also sell portable batteries separately. Retailers should provide collection points in stores and UK distance sellers could provide free return by post.

Distributors of batteries must also provide information to users about their take-back arrangements.

Portable batteries collected by distributors must be collected free of charge by Battery Compliance Schemes (BCS) however should a distributor that supplies less than 32kg of portable batteries per year decide to collect used batteries, the BCS would not be obliged to collect the batteries from these distributors.

Please note:

The information contained in this guide is of a general nature and is not intended to address the circumstances of any particular individual or entity. Although we endeavour to provide accurate and timely information, there can be no guarantee that such information is accurate as of the date it is received or that it will continue to be accurate in the future. No one should act on such information without appropriate professional advice after a thorough examination of the particular situation.

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