

7.0 Waste Treatment



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Audience: This section of the guidance is aimed at all organisations involved in the treatment and reuse of WEEE.

Benefits: The benefit of implementing the guidance below is that it provides treatment facilities with initiatives they can implement which can reduce the waste they produce and can lead to cost savings.

Summary: When WEEE arrives at a treatment facility, non-WEEE contamination can arise from items such as food left in fridges etc. Items which may pose a hazard can also be present. In addition to these waste arisings, process waste can also arise from the treatment of WEEE.

This section of the guidance provides treatment facilities with initiatives they can implement to ensure waste materials are recovered and disposed of in a legal and environmentally responsible manner. Treatment facilities should include systems for identifying and segregating wastes appropriate to their composition and nature. Facilities should provide adequate quarantine areas (where necessary), suitable storage facilities and washing facilities.

7.1 Contamination

Treatment facilities should implement procedures that identify and remove 'non-conforming' wastes as early as possible in the process (which may be at source) to increase the quality of WEEE collected for treatment. Contamination should be removed as early as possible in the treatment process.

Key benefit of taking action

By identifying areas with high waste, treatment facilities are able to focus on identifying opportunities for improvement which may lead to cost savings.

Good practice

Procedures considered to be good practice in identifying and removing contamination include:

- establishing several points in the collection and treatment system for the identification and removal of contamination. This helps remove contaminants and improve the quality of the WEEE derived materials. It also reduces the risk from hazardous items. This may also have been addressed through the development of the risk assessments;
- arranging for the treatment facility to provide training for staff at the source of WEEE on how to identify and remove items which can contaminate the load or pose a hazard; and

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- taking photographic evidence of contaminated loads which can be shown to the source. This enables treatment facilities to record the type of contamination present to help liaise with the source (where permitted) to reduce contamination in future loads. The benefits of this are that they can develop good working relationships with their source to reduce contamination, which can help improve the quality of WEEE derived materials.



EXAMPLE:

RDC: I.T. Reuse & Recycling Zero Waste Philosophy

RDC is a computer reuse and recycling specialist, which offers end of life IT asset management services. They focus on the reuse of whole items and components, which not only creates environmental benefits but also yields the maximum potential revenue. When items are not repairable they recycle them with a view to recovering the greatest quantity of material as well as the highest value.

Gary Griffiths, Head of Sustainable Development states that:

“RDC exceeds the EU targets of 75% recovery of waste electrical and electronic equipment (WEEE) with a mass balance of the weight of the 100% of materials recovered from the waste stream”.

Since 2002, RDC has reported zero landfill on IT waste, some of which is hazardous to human health and the natural environment. Gary adds:

“Over 98% of packaging and general waste is recycled, the amount of material disposed of to landfill accounts for less than 1% of overall material handled by RDC”. (Source: www.rdc.co.uk).

They have a recycling services area designed to recover all materials including packaging.

The treatment and recycling process for their IT equipment includes the recycling of all related process and general waste when possible. They place a component and material specific focus on identifying and securing recycling outlets no matter what the material or outlet destination. Examples of this are demonstrated by their metal cases being baled and recycled in steel furnaces in Spain whereas their packaging waste is recycled locally.

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7.2 Treatment process and general wastes

Process and general wastes usually do not have a value to the treatment facility and can include materials such as food, paper, film and wood. However it is considered good practice to identify whether these materials can potentially be recycled. Through the reduction of these wastes there is reduced waste to landfill and possible cost savings. Treatment facilities should ensure that this waste is handled and disposed of in an appropriate manner.

Good practice

Examples considered to be good practice include:

- reviewing the quantity and type of waste produced to help identify material specific options for reducing and recycling the waste, which may reduce disposal costs. Support regarding end markets for recycle materials can be obtained from organisations such as WRAP, Remade Network UK and National Industrial Symbiosis Programme (NISP);
- assessing all other available options for the waste before disposal. For example, recovery through energy from waste (EfW) can be more cost effective than landfill and moves the treatment of the material higher up the waste hierarchy. However treatment facilities should take into consideration transport costs to the disposal facility;
- ensuring that only licensed waste carriers and sites are used when engaging contractors for the treatment or disposal of the waste; and
- keeping up to date with new advances in recycle treatment technologies. These may provide treatment facilities with new downstream opportunities for recycling materials which have historically been sent to landfill.

7.3 Hazardous wastes

Treatment facilities will typically implement initiatives which identify and remove items which can pose a hazard from the WEEE. The items will then be appropriately stored until suitable end markets or disposal routes can be identified.

In order to identify and control the risk posed from hazardous substances, treatment facilities should perform risk assessments to identify the risks from various items or substances within the WEEE (including WEEE for reuse).

The risk assessment process should also cover hazardous items and substances which can be used by the facility for operational purposes, such as solvents and cleansers. Treatment facilities should then implement safe working practices which advise staff on how to identify and manage hazardous items or substances whilst working in a safe manner (See *Risk Assessments section*).

Specific guidance on the handling of potentially hazardous substances and components, their removal, treatment and storage can be found in the Guidance on Best Available Treatment Recovery and Recycling Techniques (BATRRRT) .



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Good practice

Examples of good practice for the identification and management of hazardous wastes include:

- performing risk assessments and implementation of systems for mitigation of risks. Mitigation procedures can include H&S policies, H&S training, signage and the provision of personal protective equipment (PPE). Enforcement of these policies and procedures is also important;
- implementing procedures to identify and prevent potential hazards from items such as:
 - broken CRTs – when these are not recycled they should be recorded to ensure that no evidence is raised on that material. The disposal route should also be recorded;
 - small mixed WEEE (SMW) stream containing gas cylinders, loose batteries, petrol lawnmowers, paint tins and other flammables;
- recording and documenting items considered hazardous, so that the treatment facility could report back to the source to help reduce the risk of these items in future. Training should be provided to staff at source to help them identify and safely remove those items from the WEEE;
- ensuring the availability of suitable containment areas for storing items or residues which can potentially pose a hazard. Signage should also be provided to ensure that staff are aware of how to handle the items; and
- ensuring organisations contracted to treat or dispose of the hazardous waste, hold the necessary transportation and site licenses required for the handling and treatment of hazardous waste.

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