Working document

WEEELABEX

Watchlist

2 May 2011

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Rationale for a WEEELABEX watchlist

Standards and normative documents can never be considered carved in stone for eternity. Generally speaking, and in the world of WEEE management in particular, standards should be goal-oriented, i.e. they must not pre-empt operators' investments in new technologies or new work methods aimed at meeting the requirements more efficiently.

- That is the first reason why this WEEELABEX 'watchlist' was created: To provide guidance as regards collection, storage, transport, de-pollution and recycling, whilst acknowledging that further research, pilot projects and gathering of experience is required.
- Furthermore, the watchlist also compiles all the signposts in earlier versions of the WEEELABEX normative documents concerning methods of auditing and conformity assessment to be performed by the future WEEELABEX organisation. Most of these items will be subject of further discussions in WG WEEELABEX TF Audit.
- A third reason why this watchlist was created is that in 2011-12 WG WEEELABEX TF Measurement will lay down concentration and target values to allow WEEELABEX auditors to verify conformity.
- And finally, some items will be monitored to account for legislative developments.

This version 9.0 of the WEEELABEX normative documents will not undergo modifications for a period of 18 months, i.e. until 1 October 2012. This watchlist will be a tool to allow the WEEELABEX project management to prepare a review of the documents.

In this watchlist, the green text refers to narrative (mostly notes or comments) in the previous version of the normative documents that was removed. The term '[WEEELABEX]' refers to an entity or body that will govern and regulate the implementation of the WEEELABEX deliverables, including conformity verification.

Clause no.	Clause	Issue	Actions
Collection 4.6.2	No operator shall initiate, contribute to, or otherwise allow shipments of WEEE that would result in treatment that is not in compliance with the objectives of the WEEELABEX normative requirements for treatment and with Directive 2002/96/EC. COMMENT WEEE shall not be transferred to facilities the conformity of which with the requirements laid down in this normative document has not been verified in accordance with [WEEELABEX]. [WEEELABEX] refers to an entity or body that will govern and regulate the implementation of the WEEELABEX deliverables.	Concerns implementation and methods of conformity assessment.	WG WEEELABEX TF Audit
Collection 5.1.3	All handling of WEEE including the loading, unloading and transport shall be carried out with appropriate tools, containers and fixing to avoid damage to WEEE. NOTE 1 In order to minimise damage during loading, unloading and transport, flat panel displays with a flat panel size of	Decision GA 01/04/2011. Subject to further research and gathering of experience.	WG WEEELABEX

	greater than 100 cm (40 inches) across the diagonal the appliance should be handled vertically and stored vertically unless the containers could assure that flat panel displays are not damaged even if stored and transported horizontally. NOTE 2 During handling and storage special attention shall be given to the unloading of lamp containers in an efficient way and in a safe manner as to avoid damage to containers, lamps and fractions thereof, and employee's health and safety.		
Collection 5.3.2	WEEE shall be sorted into the WEEE collection categories or any other groups of WEEE based on legislation or agreed contractually with take-back organisations or other customers. CRT display appliances and flat panel displays shall be kept in separate WEEE streams. Sorting of different types of flat panel displays shall only be carried out at flat panel displays treatment facility.	Decision GA 01/04/2011. Subject to further research and gathering of experience.	WG WEEELABEX
Collection 5.4.2	Appropriate methods shall be used to prevent the breakage of flat panel displays during transport. NOTE Precautions to prevent damages of flat panel displays include: • the use of containers not bigger than 2 cubic metre (m3) • loading of the container piece by piece, displays standing upwards and if necessary on their smaller side; • tightly packing the containers to prevent moving of the units during transport. • If flat panel displays do not fit into the container they should be transported separately provided that they are also stored and transported vertically or in such a way that they are not damaged.	Decision GA 01/04/2011. Subject to further research and gathering of experience.	WG WEEELABEX
Logistics 4.7.2	No operator shall initiate, contribute to, or otherwise allow shipments of WEEE that would result in treatment that is not in compliance with the objectives of the WEEELABEX normative requirements for treatment and with Directive 2002/96/EC. COMMENT WEEE shall not be transferred to facilities the conformity of which with the requirements laid down in this normative document has not been verified in accordance with [WEEELABEX].	Concerns implementation and methods of conformity assessment.	WG WEEELABEX TF Audit
Logistics 5.1.3	All handling of WEEE including the loading, unloading and transport shall be carried out with appropriate tools, containers and fixing to avoid damage to WEEE. NOTE 1 In order to minimise damage during loading, unloading and transport, flat panel displays with a flat panel size of greater than 100 cm (40 inches) across the diagonal the appliance should be handled vertically and stored vertically unless the containers could assure that flat panel displays are not damaged even if stored and transported horizontally. NOTE 2 During handling and storage special attention shall be given to the unloading of lamp containers in an efficient way and in a safe manner as to avoid damage to containers, lamps and fractions thereof, and employee's health and safety.	Decision GA 01/04/2011. Subject to further research.	WG WEEELABEX
Logistics 5.3.2	WEEE shall be sorted into the WEEE collection categories or any other groups of WEEE based on legislation or agreed contractually with take-back organisations or other customers. CRT display appliances and flat panel displays shall be kept in separate WEEE streams. Sorting of different types of flat panel displays shall only be carried out at flat panel displays treatment facility.	Decision GA 01/04/2011. Subject to further research.	WG WEEELABEX
Logistics 5.4.2	Appropriate methods shall be used to prevent the breakage of flat panel displays during transport.	Decision GA 01/04/2011. Subject to further research and	WG WEEELABEX

	NOTE Precautions to prevent damages of flat panel displays include: • the use of containers no bigger than 2 cubic meter (m3) • loading of the container piece by piece, displays standing upwards and if necessary on their smaller side; • tightly packing the containers to prevent moving of the units during transport. • If flat panel displays do not fit into the container they should be transported separately provided that they are stored and transported vertically, or in such a way that they are not damaged.	gathering of practical experience.	
Treatment 3.18	Definition of Material recovery: "any recovery operation excluding energy recovery and reprocessing into materials which are to be used as fuel" NOTE In accordance with Article 1(5) of Draft Commission Decision of […] establishing rules and calculation methods for verifying compliance with the targets set in Article 11 (2) of Directive 2008/98/EC of the European Parliament and of the Council	Decision GA 01/04/2011. Requires update upon publication of the Decision.	WG WEEELABEX
Treatments 3.10	Definition of End-of-waste: "fractions may cease to become waste and be regarded as a secondary product following a recovery or recycling operation in compliance with specific criteria according to Article 6 of Directive 2008/98/EC" COMMENT Subject of discussions in [WEEELABEX]	Subject to further discussions	WG WEEELABEX TF WF_RepTool
Treatment 5.1.3	All handling of WEEE including the loading, unloading and transport shall be carried out with appropriate tools, containers and fixing to avoid damage to WEEE. NOTE In order to minimise damage during loading, unloading and transport, flat panel displays with a flat panel size of greater than 100 cm (40 inches) across the diagonal the appliance should be handled vertically and stored vertically unless the containers could assure that flat panel displays are not damaged even if stored and transported horizontally.	Decision GA 01/04/2011. Subject to further research.	WG WEEELABEX
Treatment 5.4	De-pollution monitoring Monitoring of de-pollution performance shall be determined by one or several of the three following methodologies: • quantification of the outgoing stream and comparison with a target value or assessment of progress, • establishment of a mass balance between incoming and outgoing streams, and • analysis of representative samples of relevant fractions from treatment of de-polluted WEEE. NOTE Benchmarks and target values relative to the first methodology may be established on the basis of collected data and statistical analyses. The target values will be provided by the WEEELABEX organisation. Mass balance assessment may be measured by means of batches or annual data comparison. COMMENT 1 Before being used, the reliability of each of these possible methodologies shall be demonstrated, depending on treatment technologies and types of WEEE stream processed. COMMENT 2 [WEEELABEX 2011-12] shall validate which methodologies are applicable to specific flows and technologies, and provide the necessary target values.	Subject to assessment of the reliability of methodologies and definition of target values.	WG WEEELABEX TF Measurement

Treatment 5.9.1	The operator shall be in a position to make available simple and understandable documents including: [List] COMMENT Without prejudice to the principle of freedom of contract between an operator, on the one hand, and a WEEE system, on the other, some of the documents that operators must be in a position to make available to [WEEELABEX] are of a confidential nature and can only be provided to external entitled parties who are subject to non-disclosure agreements.	Concerns implementation and methods of conformity assessment.	WG WEEELABEX TF Audit WG WEEELABEX TF Governance
Treatment Annex A A.2.1	Annex II (Selective treatment of materials and components of WEEE) of Directive 2002/96/EC requires that the following components shall be removed from separately collected WEEE: • polychlorinated biphenyls (PCB) containing capacitors in accordance with Council Directive 96/59/EC of 16 September 1996 on the disposal of polychlorinated biphenyls and polychlorinated terphenyls (PCB/PCT) • capacitors containing mineral or synthetic oil • electrolyte capacitors containing substances of concern (either height > 25 mm, or diameter > 25 mm, or proportionately similar volume) COMMENT There is no definition of the term “substances of concern” available in legislation.	Requires scrutiny of other pieces of legislation.	
Treatment Annex A, A.4.2	Special precautions and safety measures shall be in place for operations concerning used lithium batteries and for mixed batteries if any lithium battery is present in the mixture. NOTE 1 The share of lithium batteries in public collection bins or removed from WEEE is about 3-5 percent (2010). *In B2B and professional disassembly activity, there may be opportunities where only Lithium batteries are removed from equipment. These Lithium batteries cannot be short-circuited; therefore the most appropriate packaging is the use of individual packaging and/or protection of terminals to avoid short-circuit. When and where possible, the use of original packaging trails is advisable. The highest risk comes from primary lithium batteries, cylindrical or button cells; individual packaging is strongly recommended during the disassembly operation.*	Italics text subject to review.	WG WEEELABEX TF Measurement
Treatment Annex B, B.1.3	Monitoring and control of the quality of de-pollution of capacitors, batteries, and printed circuit boards of all flows is based on two different methodologies. First batch results are compared with a benchmark system provided and maintained by [WEEELABEX] (clause B.2.2). Secondly a chemical analysis of shredder light fractions as defined in B.3 is required. These values are compared with the limit values laid down in B.3. COMMENT [WEEELABEX] The limit values will be established in [WEEELABEX].	Concerns definition of limit values and therefore subject to further discussions.	WG WEEELABEX TF Measurement
Treatment Annex B, B.2.2	To verify the quality of de-pollution during the batch target values of removed batteries, capacitors, and printed circuit boards shall be reached. The target values are set up by a benchmark system laid down by [WEEELABEX]. NOTE The benchmark system is based on experience data from batches, special investigations or annual mass balances, with different input categories or distinct mixtures of it and in different geographical regions. It will be coordinated, approved and updated by [WEEELABEX]. COMMENT [WEEELABEX] refers to an entity or body that will govern and regulate the implementation of the WEEELABEX deliverables.	Concerns implementation and methods of conformity assessment. Subject to further discussions.	WG WEEELABEX TF Measurement WG WEEELABEX TF Audit

Treatment Annex B, B.3.3	To verify the quality of mechanical de-pollution, the following preliminary limit values in the light shredder fraction of the first mechanical treatment operation shall apply: • Copper (Cu) [10.000] mg/kg (see note) • Cadmium (Cd) [100] mg/kg (see note) • Polychlorinated Biphenyls (PCB) [50] mg/kg (see note) Copper limit value shall not apply, if further treatment step involves copper separation. Chemical analysis shall be carried out in accredited laboratories authorised to process and analyse waste fractions. NOTE 1 6 PCB-congeners in accordance with DIN 51 527 Part 1 should be determined and assessed in accordance with Council Directive 96/59/EC on PCBs and PCTs and the standards and national legislation derived from this. European standard IEC 61619 and subsequent revisions shall be applied as the reference method for the determination of PCBs in insulating liquids. NOTE 2 The preliminary target values shall be verified during the implementation of the normative document and will be approved and updated by [WEEELABEX]. COMMENT [WEEELABEX] refers to an entity or body that will govern and regulate the implementation of the WEEELABEX deliverables. NOTE 3 The limit values do not cover all the possible pollutants in the light shredder fraction; only for possible pollutants which are efficient de-pollution indicators have limit values been established.	Concerns implementation and methods of conformity assessment. Subject to further discussions.	WG WEEELABEX TF Measurement WG WEEELABEX TF Audit
Treatment Annex B, B.4.2	Representative product samples shall be taken and analysed at least once per quarter and recorded in the compliance documentation of the recycling operator. The analyses shall at least cover the substances mentioned under B.4.1. NOTE 1 For plastic fractions from temperature exchange equipment and non-cooling large household appliances, monitoring of compliance with relevant product legislation of the end-of-waste status is not required. For all other categories, the downstream monitoring and verification in accordance with A.6.2. shall be fulfilled. COMMENT [WEEELABEX] refers to an entity or body that will govern and regulate the implementation of the WEEELABEX deliverables. COMMENT In 2011-12 [WEEELABEX] will assess the costs involved in the analyses.	Concerns implementation and methods of conformity assessment. Subject to further discussions.	WG WEEELABEX TF Measurement WG WEEELABEX TF Audit
Treatment Annex C, C.5.3	The batch has to be validated by a person mandated to perform conformity verification in compliance with [WEEELABEX]. Validation shall comprise: a visual check during the batch, a visual check of all input and output fractions, verification of the documentation, and assessment of compliance with this Annex. COMMENT [WEEELABEX] refers to an entity or body that will govern and regulate the implementation of the WEEELABEX deliverables.	Concerns implementation and methods of conformity assessment. Subject to further discussions.	WG WEEELABEX TF Audit
Treatment Annex D, D.3.2	Simplifying assumptions shall be allowed for the following components if no specific data are available: [Table]	Concerns implementation and methods of conformity assessment. Subject to further	WG WEEELABEX TF WF_RepTool

	COMMENT Details on these assumptions and data or packages will be set up and provided for by [WEEELABEX].	discussions.	WG WEEELABEX TF Audit
Treatment Annex D, D.5.3	In the following table the method of classification of the use of the components or fractions in final technologies is provided: [Table] COMMENT Further details on classification will be set up by [WEEELABEX].	Concerns implementation and methods of conformity assessment. Subject to further discussions.	WG WEEELABEX TF WF_RepTool
Treatment CRT, 3.2	Definition of Cathode Ray Tube (CRT): "vacuum tube containing an electron gun and a fluorescent screen used to create images in the form of light emitted from the fluorescent screen" Individual parts of CRT are shown on the following scheme: NOTE 1 The CRT vacuum tube consists of a screen, cone, frit glass, shadow mask (only for colour CRTs), anti-implosive metal frame, and an electron gun. COMMENT This illustration will be reviewed when the definitions will be finally fixed.	Subject of review.	
Treatment CRT, 3.3	Fluorescent coatings: Coatings laid on the inner side of a screen which contain wide range of metals, rare-metals (e.g. europium and yttrium), and heavy metals (very often cadmium) NOTE There is a risk that fluorescent coatings may have H6 and H13 and H14 hazardous properties according to the annex 3 of Directive 91/689/EEC on hazardous waste. When it is proven that fluorescent coatings do not have any hazardous properties they can be considered as non-hazardous waste otherwise they shall be considered as a hazardous waste.	Decision GA 01/04/2011. Subject to further research and gathering of experience.	WG WEEELABEX
Treatment CRT, 4.2.6	If crushing, shredding, splitting, or cleaning of CRT or CRT display appliances is carried out by the treatment operator, a regular airborne dust monitoring of inner working environment shall be established at the treatment plant, following the periodicity and protocols described in respective European legislation on Health and Safety and its corresponding national transposition. NOTE Monitoring of dust with a possible fibrogenous effect and a possible content of heavy metals (especially lead and cadmium) in dust shall be determined by accredited laboratory.	Concerns implementation and methods of conformity assessment. Subject to further discussions.	WG WEEELABEX TF Audit
Treatment CRT, 5.1.3	Other components and fractions of CRT display appliances after de-pollution operations shall not contain CRT glass. This shall be proven by controlling that each fraction and component contains less than 2 % by weight of CRT glass. Exceptions are: • deflection coil components where the content of CRT glass shall be less than 4 % by weight of CRT glass, • waste sludge from wet method of processing, • dust from air filtration system and the finest waste fraction from sieving process, • removed fluorescent coatings fraction. COMMENT In 2011-12 [WEEELABEX] will assess the costs involved in the analyses.	Decision GA 01/04/2011. Refers to methods of conformity assessment.	WG WEEELABEX TF Measurement
Treatment CRT, 5.2.3	Treatment operations shall avoid contamination of components and fractions of CRT display appliances by fluorescent coatings. CRT glass fractions after de-pollution shall not contain fluorescent coatings. This shall be proven by controlling that any glass fraction does not contain more than [XX] milligrams of [yttrium/yttrium oxide] per one kilogram of dry basis or less then 0,1	Concerns implementation and methods of conformity assessment. Subject to further	WG WEEELABEX TF Measurement

	milligram of yttrium per one litre of acid leach. COMMENT The method of measurement of fluorescent coatings content will be demonstrated by WG WEEELABEX TF Measurement project in 2011-12. Reference to the analytical norms will be provided by EERA and will be added later on. Limit values can change according to the results of this project. It is also necessary to prove that those limits can be applied to both kinds of cleaning methods – wet and dry. NOTE During mechanical treatment when whole CRT display appliances is crushed there is a risk that also other fraction than glass can be polluted by fluorescent coatings. Research by WEEELABEX TF Measurement will be made if it is necessary to limit pollution of other fractions by fluorescent coatings.	discussions.	
Treatment FPD, 5.3.1	For treatment of flat panel displays with CCFL backlights, evidence shall be provided showing that at least (XX percent) in mass of mercury from backlight lamps is removed from the input content of the non-treated appliances. COMMENT The target values will be set up by a benchmark system laid down by [WEEELABEX]. [WEEELABEX] refers to an entity or body that will govern and regulate the implementation of the WEEELABEX deliverables.	Concerns implementation and/or methods of conformity assessment. Subject to further discussions.	WG WEEELABEX TF Measurement
Treatment FPD, 5.3.2	This can also be demonstrated by verifying that less than [XX mg/m3 or mg/kg] of mercury is present in the fractions that are intended to be recycled and that the fractions where the mercury is concentrated are directed to appropriate disposal.	Concerns implementation and/or methods of conformity assessment. Subject to further discussions.	WG WEEELABEX TF Measurement
Treatment FPD, 5.5	Liquid crystals In case of thermal treatment, liquid crystal display (LCD) panels containing liquid crystals and their fractions shall only be sent to treatment acceptors that are authorised to treat these chemicals. NOTE 1 The presence of aromatic hydrocarbons chains in the chemical structure of the liquid crystals with the possible presence of chlorine in the waste incinerated could lead to the formation of dioxins and furans. NOTE 2 Incineration plants that comply with the Waste Incineration Directive 2000/76/EC are authorised to treat LCD panels or fractions coming out of LCD treatment	Decision GA 01/04/2011.	
Treatment FPD, 5.5.1	Flat panel displays and fractions shall be sent to treatment facilities that guarantee recovery or disposal of the fluorescent coatings and glass according to clause 5.8.2 of WEEELABEX normative document on Treatment – Part I General Requirements. COMMENT This clause will be revised when evidence becomes available to confirm or deny that fluorescent coating is hazardous	Subject of further research.	WG WEEELABEX TF Measurement
Treatment FPD, 5.5.2	Fluorescent coatings and fractions containing fluorescent coatings shall be disposed of in landfill or treated by suitable thermal processes, designed and approved for hazardous substances. COMMENT This clause will be revised when evidence becomes available to confirm or deny that fluorescent coating is hazardous	Subject of further research.	WG WEEELABEX TF Measurement
Treatment Lamps, 5.4.3	Other lamps fractions intended for recycling shall have a mercury level below [XX] mg/kg. NOTE The other fractions generated from the separation process of lamps are the separated metallic fractions, separated plastics fractions and the separated phosphor powders. COMMENT The limit and target values will be laid down by [WEEELABEX] in 2011-2012.	Concerns the definition of target values.	WG WEEELABEX TF Measurement