INTERNATIONAL STANDARD

ISO/IEC 24700

First edition
2005-07-01

Quality and performance of office equipment that contains reused components

Qualité et performance d'équipement de bureau qui contient des composants réutilisés

Reference number
ISO/IEC 24700:2005(E)

© ISO/IEC 2005

Copyright International Organization for Standardization
Reproduced by IHS under license with ISO
No reproduction or networking permitted without license from IHS

Not for Resale

PDF disclaimer

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

© ISO/IEC 2005

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

Copyright International Organization for Standardization
Reproduced by IHS under license with ISO
No reproduction or networking permitted without license from IHS

© ISO/IEC 2005 – All rights reserved

Not for Resale

Contents

Page

Foreword ... **iv**

Introduction ... **v**

1 Scope ... **1**

2 Normative references ... **1**

3 Terms and definitions ... **2**

4 Office equipment requirements ... **2**
4.1 Performance ... **2**
4.2 Upgrades ... **2**
4.3 Testing ... **3**
4.4 Quality ... **3**
4.5 Safety and electromagnetic emissions ... **3**
4.6 Warranties/Guarantees ... **3**
4.7 Service ... **3**
4.8 Environmental responsibility ... **3**

5 Demonstration of conformance ... **4**
5.1 Supplier Declaration of conformity ... **4**
5.2 Documentation ... **4**

Annex A (normative) **Supplier's declaration of conformity** In accordance with ISO/IEC 17050-1 ... **5**

Annex B (informative) **Regulatory summaries** ... **7**

Annex C (informative) **Schematic of recycling related technology** ... **10**

© ISO/IEC 2005 – All rights reserved

Copyright International Organization for Standardization
Reproduced by IHS under license with ISO
No reproduction or networking permitted without license from IHS
Not for Resale

Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work. In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of the joint technical committee is to prepare International Standards. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75 % of the national bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights.

ISO/IEC 24700 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 28, *Office equipment*.

© ISO/IEC 2005 – All rights reserved
Copyright International Organization for Standardization
Reproduced by IHS under license with ISO
No reproduction or networking permitted without license from IHS
Not for Resale

Introduction

This International Standard, which applies to office equipment that contains reused components, defines a way to describe office equipment products that ensures that the quality and performance of such products is equivalent to new, independent of whether the product contains reused components that have been reprocessed to original product specifications. This International Standard also ensures that the equipment continues to meet current applicable international equipment safety and environmental standards. This International Standard may be useful for the procurement, selling and marketing of equipment in today's world where a) governments are promoting the use of recyclable resources to achieve waste reduction and conservation of resources; b) industry recognizes the environmental benefits and potential cost savings of reuse; and c) customers need assurance that products containing reused parts perform equivalent to new and meet applicable safety standards. It complements governmental regulations and sales and marketing information in communicating the office equipment's quality and performance and the environmental responsibility of the supplier. This International Standard is complementary to other International Standards dealing with quality systems and performance.

This International Standard is purposefully technology-neutral. When its model and supporting methodology are combined with regulatory and procurement requirements, it yields an approach to describe equipment, regardless of its product content. This International Standard provides a user / consumer perspective and will be useful in answering questions such as:

- Does this office equipment that contains reused components perform equivalent to equipment containing all new components?
- How does this office equipment meet the technical, safety, and environmental requirements of my organization?

This International Standard is suitable for conformity assessment. As such, this International Standard can be applied by a supplier or first party (e.g. the manufacturer of a product), a user or purchaser (second party), and/or a third party qualified as an authorized third party. The Technical Committee that developed this International Standard considered the related International Standards and Guides pertaining to conformity assessment. The sample requirements of the normative references should be followed in order to meet the sample requirements of the conformity assessment.

--`,,`,,`-`-`,,`,,`,`,,`---

© ISO/IEC 2005 All rights reserved

Copyright International Organization for Standardization
Reproduced by IHS under license with ISO
No reproduction or networking permitted without license from IHS
Not for Resale

Copyright International Organization for Standardization
Reproduced by IHS under license with ISO
No reproduction or networking permitted without license from IHS
Not for Resale

Quality and performance of office equipment that contains reused components

1 Scope

This International Standard specifies product characteristics for use in an original equipment manufacturer's or authorized third party's declaration of conformity to demonstrate that an office equipment product that contains reused components performs equivalent to new, meeting equivalent to new component specifications and performance criteria, and continues to meet all the safety and environmental criteria required by responsibly built products. The International Standard is relevant to office equipment products whose manufacturing and recovery processes result in the reuse of components. Annex C has a description of how reuse relates to other recycling processes.

This International Standard specifically addresses office equipment. Consumable items such as customer replaceable toner cartridges are not in the scope of this International Standard. Equipment reprocessed by the original manufacturer or an authorized third party that does NOT meet the equipment's original design performance specification is not in the scope of this International Standard. This International Standard is applicable to:

— A situation in which a government requires a neutral benchmark to evaluate the quality, safety and performance of equipment that contains reused components and to demonstrate the environmental responsibility of the supplier. When regulations mandate a neutral benchmark for equipment, this International Standard provides the benchmark for proving compliance with such regulation.

— A situation in which a commercial supplier requires a neutral benchmark to demonstrate and communicate the quality, safety and performance of equipment that contains reused components and to demonstrate the environmental responsibility of the supplier.

— Situations in which consumers require a neutral benchmark to identify or distinguish environmentally responsible products.

This International Standard reflects the world's current approaches that yield products from many manufacturing processes including the reuse of components, with the equipment's warranties and guarantees playing an important role in the market acceptance. In today's procurement processes, technical equipment definitions used by the regulators must be addressed and, in that sense, this International Standard will be useful in procurement and, in the trade facilitation area, to communicate with the regulators. This International Standard specifically addresses office equipment. However, in the future it may provide valuable directions for other industries and industrial sectors.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 9001, *Quality management systems — Requirements*

ISO 14001, *Environmental management systems — Specification with guidance for use*

ISO/IEC 17050 (all parts), *Conformity assessment — Supplier's declaration of conformity — Part 1: General Requirements; Part 2: Supporting documentation*

© ISO/IEC 2005 All rights reserved

Copyright International Organization for Standardization
Reproduced by IHS under license with ISO
No reproduction or networking permitted without license from IHS
Not for Resale

EN 60950, *Safety of Information Technology Equipment*

CISPR 14, *Electromagnetic Compatibility — Requirements for household appliances, electric tools and similar apparatus — Part 1: Emission — Product Family Standard; Part 2: Immunity — Product family standard*

CISPR 22, *Information Technology Equipment — Radio Disturbance Characteristics — Limits and methods of measurement*

CISPR 24, *Information Technology Equipment — Immunity Characteristics — Limits and methods of measurement*

IEC 61000, *Electromagnetic compatibility (EMC) — Part 3-2: Limits — Limits for harmonic current emissions (equipment input current <= 16 A per phase)*

IEC 61000, *Electromagnetic compatibility (EMC) — Part 3-3: Limits — Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current <= 16 A per phase and not subject to conditional connection*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/IEC 17050, EN 60950, CISPR 14, CISPR 22, CISPR 24, IEC 61000, ISO 9001 and ISO 14001 and the following, apply.

3.1 Conformity assessment: Any activity concerned with determining directly or indirectly that relevant requirements are fulfilled.

3.2 Supplier's declaration: Procedure by which a supplier gives written assurance that a product, process or service conforms to specified requirements.

NOTE The supplier is the party that supplies the product, process or service and may be a manufacturer, distributor, importer, assembler, service organization, etc. In order to avoid any confusion, the expression "self-certification" should not be used.

3.3 Office equipment: Printers, copying equipment, digital scanners, facsimile equipment and systems composed of combinations of these types of equipment.

4 Office equipment requirements

4.1 Performance

The equipment must be assured, by the original equipment manufacturer or authorized party, to perform per the original product design specifications as documented by the original manufacturer in its product literature and guaranties.

This means that the equipment, when comprised of reused parts should have the same cosmetic, functional and performance characteristics as the equipment when comprised of all new parts.

4.2 Upgrades

The equipment must be manufactured using components that, if functionally critical, represent the most up-to-date specification of the components, regardless of whether or not the components are new or reused.

NOTE This means that the equipment that contains reused parts must be upgraded with components that significantly affect the function of the equipment. An example might be an upgraded electronic board, with changes that fix a problem discovered soon after product introduction.

© ISO/IEC 2005 – All rights reserved
Copyright International Organization for Standardization
Reproduced by IHS under license with ISO
No reproduction or networking permitted without license from IHS
Not for Resale

4.3 Testing

The equipment must be tested using the equivalent procedures as defined by the manufacturer regardless of whether or not the product contains all new components or if it contains reused components.

4.4 Quality

If the equipment is originally manufactured in an ISO 9001 certified factory, then this condition must be maintained. Factory certification to the ISO 9001, *Quality management systems — Requirements* may ensure that the product conforms to the product's established design.

4.5 Safety and electromagnetic emissions

The equipment must meet, at a minimum, the requirements of the international product safety International Standard IEC 60950, *Safety of Information Technology Equipment*.

The equipment must also meet, if applicable to the equipment type and required by the market in which the product is sold, the requirements of the following standards:

CISPR 14, *Electromagnetic Compatibility — Requirements for household appliances, electric tools and similar apparatus — Part 1: Emission — Product Family Standard; Part 2: Immunity — Product family standard.*

CISPR 22, *Information Technology Equipment — Radio Disturbance Characteristics — Limits and methods of measurement.*

CISPR 24, *Information Technology Equipment — Immunity Characteristics — Limits and methods of measurement.*

IEC 61000, *Electromagnetic compatibility (EMC) — Part 3-2: Limits — Limits for harmonic current emissions (equipment input current <= 16 A per phase).*

IEC 61000, *Electromagnetic compatibility (EMC) — Part 3-3: Limits — Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current <= 16 A per phase and not subject to conditional connection.*

4.6 Warranties/Guarantees

The equipment's warranties and guaranties must apply equally to equipment manufactured of all new components and to equipment that contains reused components.

4.7 Service

Service agreements offered to customers must be equivalent regardless of whether or not the equipment contains all new components or if it contains reused components.

4.8 Environmental responsibility

If the equipment is originally manufactured in an ISO 14001 certified factory, then this condition must be maintained. Factory certification to the ISO 14001, *Environmental Management System* may ensure a commitment to continuous improvement in environmental performance.

© ISO/IEC 2005 All rights reserved

Copyright International Organization for Standardization
Reproduced by IHS under license with ISO
No reproduction or networking permitted without license from IHS
Not for Resale

5 Demonstration of conformance

5.1 Supplier Declaration of conformity

When it is required that a supplier demonstrate conformance with the requirements of this International Standard and the normative references in 2.1, the supplier shall complete Annex A, “Supplier’s declaration of conformity in accordance with ISO/IEC 17050-1.”

5.2 Documentation

Documentation prepared in meeting the requirements of the normative references in 2.1 shall be available upon request in accordance with ISO/IEC 17050-2. Other documentation prepared in meeting requirements specifically pertaining to the characteristics of office equipment shall also be available upon request.

NOTE Characteristics of office equipment are specified by ISO standards such as ISO/IEC 11159, and ISO/IEC 11160.

© ISO/IEC 2005 – All rights reserved
Copyright International Organization for Standardization
Reproduced by IHS under license with ISO
No reproduction or networking permitted without license from IHS
Not for Resale

Annex A
(normative)

Supplier's declaration of conformity
In accordance with ISO/IEC 17050-1

1) No. _____

2) Issuer's name: _____

3) Issuer's address: _____

_____

_____

4) Object of the declaration (i.e. product identifier)

_____

_____

_____

5) The object of the declaration (i.e. product) described above is in conformity with the requirements of the following documents:

	Document No.	Title	Edition/Date of Issue
6)	_____	_____	_____
	_____	_____	_____
	_____	_____	_____

Additional Information:

7) _____

_____

_____

Signed for and on behalf of:

_____

_____

_____

(Place and Date of Issue)

8) _____ _____

(Name, function) (Signature or equivalent authorized by the issuer)

© ISO/IEC 2005 All rights reserved

Copyright International Organization for Standardization
Reproduced by IHS under license with ISO
No reproduction or networking permitted without license from IHS
Not for Resale

A.1 Guidance to complete the form of declaration

(numbers in parentheses refer to the previous page of this annex)

1) Every declaration should be uniquely identified.

2) The responsible issuer should be unequivocally specified. For larger companies, it may be necessary to specify operational groups or departments.

3) The “object” should be unequivocally described so that the declaration may be related to the product in question. For mass-produced products, it is not necessary to give individual serial numbers. In such cases it is sufficient to give the name, type, model number/batch number, etc.

4) For products, an alternative conformity statement can be: “As delivered, the object of the declaration described above is in conformity with the requirements of the following documents”.

5) Requirements documents should be listed with their document identification, title and date of issue.

6) The sub-heading text should appear only if additional information is given. Such information may, for example, correspond to 6.2 (of the conformity assessment standard) or may make reference to related product marking in accordance with Clause 9 (of the conformity assessment standard). Such product marking or other indication (e.g. on the product) may be an attachment to the declaration.

7) Full name and function of the signing person(s) authorized by the issuer’s management to sign on its behalf. The number of signatures or equivalent included will be the minimum determined by the legal form of the issuer’s organization.

A.2 Additional information

Additional supporting information may be referenced to relate the declaration to the conformity assessment results on which it is based, for example:

— the name and address of any conformity assessment body involved, e.g. the testing/calibration laboratory, inspection body, certification body.

— reference to relevant conformity assessment reports and the date of the reports.

— reference to any management system involved.

— reference to the accreditation documents of conformity assessment bodies involved.

— reference to existence of associated supporting documentation such as that described in ISO/IEC 17050-2.

A.3 Form of declaration

The declaration may be in hardcopy, electronic media, or any other suitable medium.

© ISO/IEC 2005 – All rights reserved
Copyright International Organization for Standardization
Reproduced by IHS under license with ISO
No reproduction or networking permitted without license from IHS
Not for Resale

Annex B
(informative)

Regulatory summaries

This informative Annex contains information regarding the regulatory and procurement requirements pertaining to the reuse and recycle content of products in Japan, the European Union (EU), Brazil, the United States, Canada, Denmark, Ireland, China and Taiwan. The Annex is not meant to be all-inclusive. It provides a summary of some of the existing requirements.

B.1 Japan

Japan's *Circular Society Law* is umbrella legislation intended to give an overarching structure to all of Japan's waste management legislation. The Law promotes the concepts of "reduce, reuse, recycle" and expanded producer and consumer responsibilities for waste management. A number of laws have been developed under the Circular Society Law umbrella. The following legislation is applicable to electronic equipment and its packaging.

B.1.A. Electronics Appliances Recycling Law, 1998: Requires recycling of large household electric appliances including televisions, air conditioners, washing machines and refrigerators from April 2001. The law may be extended to other electronics products, including information technology (IT) equipment, in the future. Target recycling rates for individual product categories are > 50 % for the first year**.**

B.1.B. Law for the Promotion of Utilization of Recyclable Resources, revised April 2000: Initially established as the basic mechanism for promoting the use of recyclable resources and curbing the generation of waste, Japan revised this law in 2000 to incorporate the "reduce and reuse" policies outlined in the new *Circular Society Law*. The law establishes mandatory requirements for resource-conserving product designs and reuse of components.

B.1.C. Law for Promotion of Sorted Collection and Recycling of Containers and Packaging, 1995: Establishes measures for promoting the sorted collection of waste containers and packaging and the recycling of collected items that meet the sorting criteria. The law's overall aim is to reduce the volume of general waste and increase use of recycled resources.

B.1.D. Green Purchasing Law, 2000: This law mandates the purchase of environmentally-preferable products for the Japanese national government and recommends green purchasing for local governments. Criteria defining a product's environmental preferability are developed for individual product categories. The criteria are designed to consider the environmental impact of a product at all stages of its life cycle. Typical product criteria comprehend resource and energy conservation, reusability, recyclability, longevity/durability, incorporation of reused/recycled content and ease of disposal at product end-of-life.

B.2 European Union

B.2.A. Waste Electrical and Electronic Equipment (WEEE) Directive, (as of April 2002)

The objectives of this Directive, which entered into force on Febuary 13, 2003, are prevention of waste electrical and electronic equipment (WEEE). The Directive also aims to increase recovery, reuse and recycling and to reduce disposal of WEEE. In addition the Directive aims to improve the environmental performance of all economic operators, particularly treatment facilities. The European Union (EU) Member States are to implement measures by August 13, 2004 to ensure separate collection, treatment, recovery, and financing of WEEE. Targets of 75 % recovery and 65 % re-use and recycling are to be met by December 31, 2006 for information technology equipment. The Directive also encourages the design and production of electrical and electronic equipment which take into account and facilitate dismantling and recovery, in particular, the reuse

© ISO/IEC 2005 All rights reserved

Copyright International Organization for Standardization
Reproduced by IHS under license with ISO
No reproduction or networking permitted without license from IHS
Not for Resale

and recycling of WEEE, their components and materials. In this context, Member States are directed to take appropriate measures so that producers do not prevent, through specific design features or manufacturing processes, WEEE from being reused.

B.2.B. DRAFT Directive on the Impact on the Environment of Electrical Equipment (EEE / EuE)

In November 2002, the European Commission replaced the third draft of Directive on the Impact on the Environment of Electrical Equipment (EEE) Directive with the EuE (energy using equipment) Directive. EuE is a framework Directive that will give the Commission powers to adopt “implementing measures” prescribing environmental performance criteria for specific types of energy-using equipment. The product-specific criteria will require either life cycle “eco-profile” assessment aimed at environmental improvement, or compliance with specific requirements on one environmental issue, particularly energy efficiency.

B.2.C. European Green Purchasing Network: is supported by the European Commission and is attempting to harmonize and promote environmentally preferable procurement specifications and evaluation practices.

B.3 Brazil

B.3.A. Industry, Trade and Tourism Ministry Regulation No. 370, Articles 22-25; November 28, 1994

The importation of used machines and equipment is only allowed if the product is not produced in Brazil. The importation of refurbished parts for the maintenance of machines and equipment is allowed only if 1) the refurbishing process has been performed by the manufacturer of the machine or equipment, 2) the product to be imported has the same guaranty as a new product, and 3) such product is not produced in the Brazil.

Import exemptions apply for machines and equipment meant to be reconstructed in Brazil, by companies that meet international technical standards. Such machines, equipment, apparatuses, and instruments must achieve, after their reconstruction, a technological level not yet available in Brazil; have a guaranty identical to the one granted to new products; and include components made in Brazil.

B.3.B. Note on other Brazilian legislation: A proposal for take-back legislation for end-of-life information technology products, based on European Union directives, is currently under study by the Federal Government.

B.4 United States

B.4.A. Federal Trade Commission (FTC) [6750-01] 16 Code of Federal Regulations (CFR) Part 260

Guides for the Use of Environmental Marketing Claims, Effective date: May 1, 1998

The guides, apply to all forms of marketing. This includes electronic media (Internet and e-mail) and the marketing of services, as well as products and packages. The U.S. Federal Trade Commission's guides allow the use of the the term "recyclable" when a package or product can be recovered from the solid waste stream for reuse or for the manufacture of another package or product. The Recycled Content guide has been amended to clarify that recycled content may consist of used, reconditioned, or remanufactured components, as well as raw materials.

B.4.B. Executive Order (E.O.) 13101 Greening the Government through Waste Prevention, Recycling & Federal Acquisition; September 14, 1998

This executive order is intended to improve the U.S. Federal Government's use of recycled products and environmentally preferable products and services. The head of each executive agency is required to incorporate waste prevention and recycling in the agencies' daily operations and work to increase and expand markets for recovered materials through preference and demand for such products. To assist Federal agencies in meeting the goals of this executive order, the US Environmental Protection Agency (EPA) issued a “Final Guidance on Environmentally Preferable Purchasing for Executive Agencies" that seeks to provide guidance to federal agencies on ways to integrate environmental considerations into procurement decisions.

© ISO/IEC 2005 – All rights reserved
Copyright International Organization for Standardization
Reproduced by IHS under license with ISO
No reproduction or networking permitted without license from IHS
Not for Resale

B.5 Other Nations' Green Purchasing Policies and Initiatives Promoting Reuse

B.5.A. Canada: 1997, each federal government department and agency must prepare a sustainable development strategy. The Commissioner of Environment and Sustainable Development audits the implementation of these plans annually. Green procurement plays a major role in the plans. Additionally, Ontario, Quebec and Manitoba all have regulatory authority to require takeback of end-of-life electronic equipment.

B.5.B. Denmark: As of March 1999, 90 % of Denmark's state institutions had developed a green purchasing policy.

B.5.C. Ireland: Green Government Guide, 1996, promotes government procurement of environmentally preferable products.

B.5.D. China: 1999, The Green Environmental Label Standard for Copiers (HJBZ 40-2000) "Environmental Label Product Specification: Electrostatic Copying Machines" was published by the Government of China (People's Republic of China Environmental Protection Bureau). The Government of China will start to certify copier compliance with the standard in 2003. The standard's requirements are similar to those of Germany's Blue Angel ecolabel, encompassing product reusability/recyclability among other considerations.

© ISO/IEC 2005 All rights reserved

Copyright International Organization for Standardization
Reproduced by IHS under license with ISO
No reproduction or networking permitted without license from IHS
Not for Resale

Annex C
(informative)

Schematic of recycling related technology

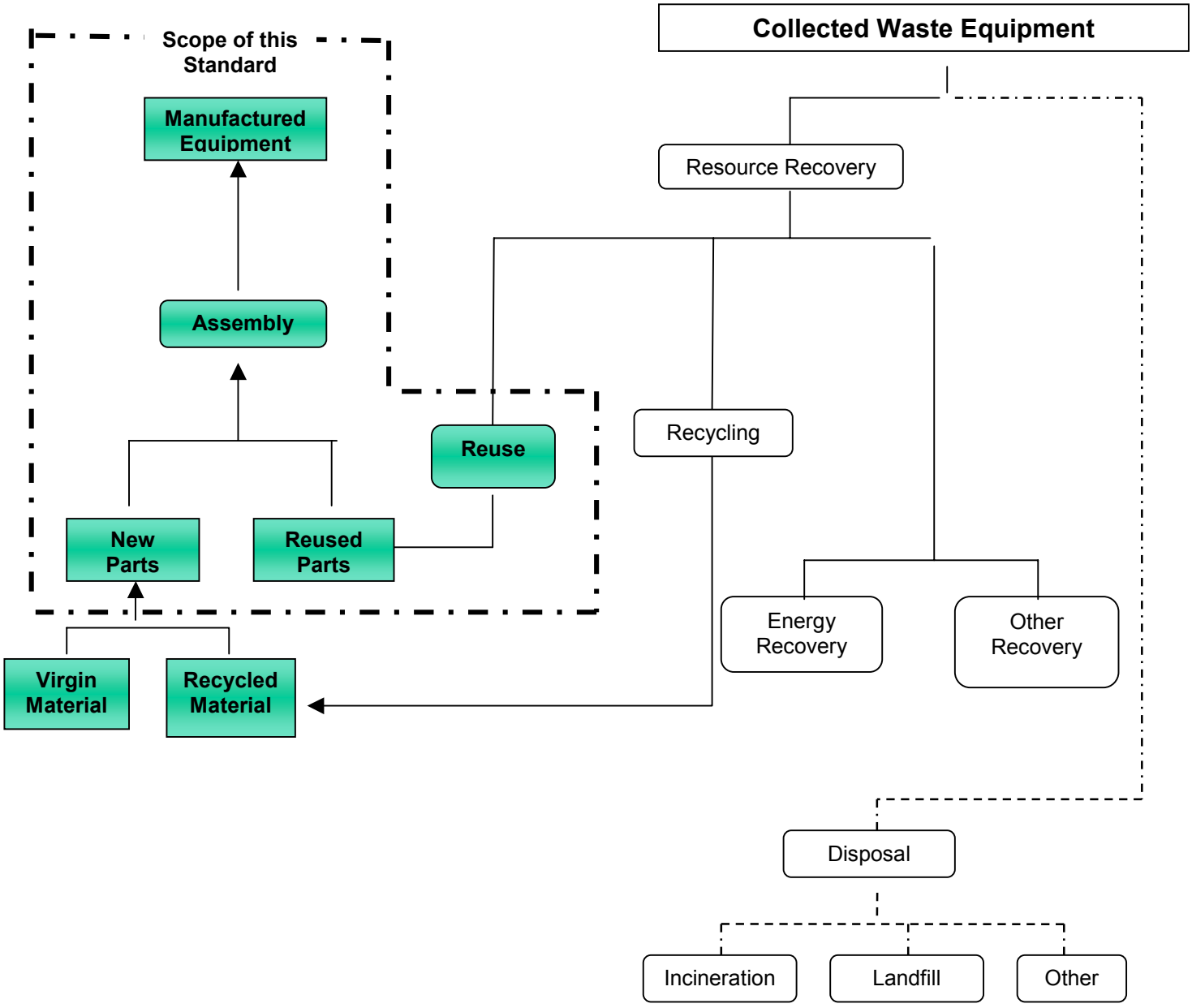

Figure C.1 — Schematic of recycling related technology

Copyright International Organization for Standardization
Reproduced by IHS under license with ISO
No reproduction or networking permitted without license from IHS
Not for Resale
© ISO/IEC 2005 – All rights reserved

Copyright International Organization for Standardization
Reproduced by IHS under license with ISO
No reproduction or networking permitted without license from IHS
Not for Resale

ICS 35.260

Price based on 10 pages

© ISO/IEC 2005 – All rights reserved
Copyright International Organization for Standardization
Reproduced by IHS under license with ISO
No reproduction or networking permitted without license from IHS
Not for Resale