



Quick Guide: **Independent Verification** **in TCO Certified**

TCO Certified is an international sustainability certification for IT products, making it easier for IT buyers, brand owners and manufacturers to make more responsible choices.

TCO Certified includes a wide range of environmental and social responsibility criteria throughout the product life cycle, including manufacturing, use and end of life.

Product models, manufacturing facilities and brand owner responsibility are independently verified for compliance.

TCO Development is the organization behind TCO Certified. For over 25 years we have provided solutions for sustainability challenges connected to IT products.

Contents

IT Products - Sustainability Challenges	4
More sustainability claims than ever	5
Environmental and social issues	6
What is an Independent Certification?	7
The Value of Independent Verification	8
About TCO Certified	9
Life cycle criteria for social and environmental responsibility	10
Independent Verification in TCO Certified	11
Verification pre and post certification.....	11
Overview of verification program in TCO Certified	12
1 - Pre certification verification	13
Product compliance	13
Brand owner and factory compliance	13
2 - Post certification verification	14
Follow up product verification	14
Annual brand review - socially responsible manufacturing.....	14
Follow up factory verification.....	14
Additional quality assurance measures	15
Review of TCO Certified certification system.....	15
Review of test and verification partners.....	15
Brand claims monitoring.....	15

IT Products - Sustainability Challenges

- why verification of criteria is key

Demand for sustainably designed and made products is higher than ever. Private and public sector organizations are under pressure to implement environmentally and socially responsible practices in all aspects of their business. IT products in particular present purchasers and industry with a unique set of risks and challenges throughout the life cycle, from working conditions in manufacturing, through energy consumption, toxic content and responsible end of life handling.

Knowing how to set relevant criteria and verify product compliance is a challenge that buyers face as they design purchasing practices that contribute to the organization's sustainability targets. Relevant product certifications that include life cycle criteria and independent verification are a useful tool for meeting both these challenges, and alleviate the need for purchasers to do this work themselves.

For manufacturers, certifications can offer a system to guide continuous improvement in areas of social and environmental responsibility, as well as provide independent validation of product claims.

This Quick Guide outlines the principles of independent verification and the specific initiatives included in the TCO Certified sustainability certification for IT products.

More sustainability claims than ever

In response to buyer demands, many IT brand owners are starting to demonstrate a greater commitment to sustainability. They also risk exposure by activists, NGOs and the media when they don't. The result is a growing awareness of the widespread human rights and environmental problems in the electronics ecosystem.

As brands move to position themselves as more socially and environmentally responsible, product buyers are faced with more sustainability claims than ever before. Coupled with a global, complex supply chain, it's almost impossible for buyers themselves to accurately assess the origin, material content, life cycle impact and human rights issues connected to the computers and other digital devices they buy.

IT purchasers face two key questions:

- how to identify computers and other IT devices that meet relevant sustainability criteria
- how to verify that products actually live up to their sustainability claims throughout the life cycle

Purchasers need tools that can help them meet these challenges. A relevant, independent product certification is such a tool. Verification of compliance against a set of relevant criteria is essential if buyers are to have confidence that the computers and other devices they buy meet those criteria throughout the life cycle.

Environmental and social issues

Computers, tablets and other IT products are associated with environmental and social sustainability challenges, from energy consumption, hazardous material content and e-waste, to user health and safety and working conditions in the product supply chain.

Current sustainability hot-spots include:

1. Working conditions. With multi-tiered, global supply chains and relentless cost and time to market pressures, manufacturers are continually challenged to quickly deliver the latest products at a competitive price. Too often, human rights on the factory floor are compromised in the race to market. Wages and working hours are among the more persistent problems.
2. Chemicals / hazardous substances. We need better knowledge about the characteristics and potential risks of chemicals used in IT products. Of the thousands of chemicals used today, only a small percentage have been tested for human health and environmental impact. While legislation and voluntary initiatives have helped to phase out several hazardous substances, such as heavy metals and halogens, from IT products, we know too little about the substances that are being used to replace them.
3. E-waste - a continuing problem that grows with increased device usage. A 2015 report from the United Nations University shows toxic e-waste is growing at a rate of over two million metric tonnes per year. For Europe, that's the equivalent of over 15 kilograms annually per capita and over 12 per capita for the US.

What is an Independent Certification?

- and why should you trust it?

Today, purchasers are faced with a growing number of product claims, labels and certifications aimed at differentiating products and guiding more sustainable choices.

It's clear that product or manufacturer declarations alone don't offer enough proof of compliance, even if the criteria are relevant. Independent verification of compliance is vital.

As a purchaser, ask these questions when evaluating a certification or label;

- How current and relevant are the criteria?
- Who is behind the certification? An independent party? Do they serve a special interest or group?
- Is independent verification required for a product to be certified?

An independent certification in accordance with ISO 14024 can be the answer.

Product certification confirms that a product has passed specific testing and assessments in order to meet requirements in an established set of criteria or a standard.

TCO Certified is a product sustainability certification in accordance with ISO 14024, Type 1, which means it follows these principles:

Independent testing and verification - Each product model is independently tested and verified to meet an established set of criteria, in accordance with ISO/IEC 17025.

Certification - Once the product, factory and brand owner are verified to meet all the criteria, the brand applies for certification of those products.

Follow up Surveillance - Activities to monitor certified products so that they continue to comply with the certification. e.g follow up testing, factory audits and brand reviews.

The Value of Independent Verification

- reducing risk and increasing trust

Setting relevant sustainability criteria is important. Independent verification of compliance with those criteria is critical. The unique supply chain and composition of IT products means that specialist competence and direct access to industry is required for effective product, brand owner and factory assessment.

Independent verification can help ensure that the products you manufacture or purchase meet relevant criteria. But it's difficult to do yourself. Here's why:

- The technological composition of IT products requires specific expertise for life cycle sustainability assessment
- The IT industry lacks transparency, making access and oversight challenging
- Not knowing whether to trust product claims and how to compare sustainability attributes between products
- The IT product supply chain is global and complex. Tracing the origin and flows of materials requires specialist expertise and industry access

Using an independent certification means verification is included. Built on scientific principles, product expertise, and direct access to industry, independent certification can help reduce social and environmental risks for both purchasers and industry.

For purchasers, this means knowing that products meet relevant criteria throughout the life cycle and an easier way to compare product sustainability factors. For industry, verification provides objective validation of sustainability claims and a structured measure of continual improvement.

About TCO Certified

- *sustainability certification for IT products*

TCO Certified is an independent sustainability certification for IT products, focusing on environmental and social responsibility throughout the product life cycle. Professional IT buyers use TCO Certified to select displays, computers and other devices that have lower environmental and social impacts throughout their life cycle, from manufacturing to use and end of life handling.

TCO Certified offers buyers and brand owners a common tool that helps drive IT products in a more sustainable direction. The program includes independent verification that certified products meet a set of regularly updated environmental and social responsibility criteria.

Benefits for Brand Owners / Manufacturers	Benefits for IT Purchasers
Reduces risk and increases credibility of sustainability claims	Reduces social and environmental risks of IT products throughout life cycle
Easier to meet buyer sustainability demands	Regularly updated, broad criteria scope
Independent measurement of continual improvement	Built-in, independent verification. No need to do it yourself.

Life cycle criteria for social and environmental responsibility

Criteria in TCO Certified are designed to address a broad range of the most pressing sustainability challenges associated with IT products. By launching a new generation of criteria every three years, the goal is to drive more rapid progress in priority areas. For example, enhanced criteria in the latest generation, launched in November, 2015, focus on socially responsible manufacturing and reduction of hazardous substances.

Overview of criteria in TCO Certified



Manufacturing phase

Criteria for socially responsible manufacturing, environmental management system.



Use phase

Criteria for climate, emissions ergonomics, health/safety and extended product life.



End of life phase

Criteria for reduction of hazardous content and chemicals, design for recycling.

TCO Certified is available for eight product categories; displays, notebooks, tablets, smartphones, desktops, All-in-One PCs, projectors and headsets.

In accordance with ISO standards

TCO Certified is a type 1 ecolabel in accordance with ISO 14024. This means that criteria are based on scientific principles and developed in an open, multi-stakeholder process. Compliance with all criteria is independently verified. This applies to environmental and product performance criteria as well as brand owner responsibility for working conditions in facilities where certified products are manufactured.

Independent Verification in TCO Certified

- product, brand owner and factory compliance

The built-in independent verification program in TCO Certified focuses on product compliance throughout the life cycle as well as brand owner and factory responsibility.

All testing and verification in TCO Certified is carried out by independent test and verification partner organizations, typically world-renown test houses that specialize in electronics, social responsibility or sustainability issues.

All organizations verifying for TCO Certified are independently accredited in accordance with ISO/IEC 17025.

TCO Certified includes a system of independent conformity assessment of products, brand owners and manufacturing facilities. Certified product models are independently tested and verified to meet all criteria in TCO Certified. Final assembly factories are also independently audited for compliance with criteria for socially responsible manufacturing. Audit reports and corrective action plans are, in turn also independently verified for accuracy. Brand owner initiatives in supply chain social responsibility are also evaluated.

This verification provides purchasers with a credible way of determining a product's sustainability attributes and offers industry an effective structure for continual improvement and claims validation.

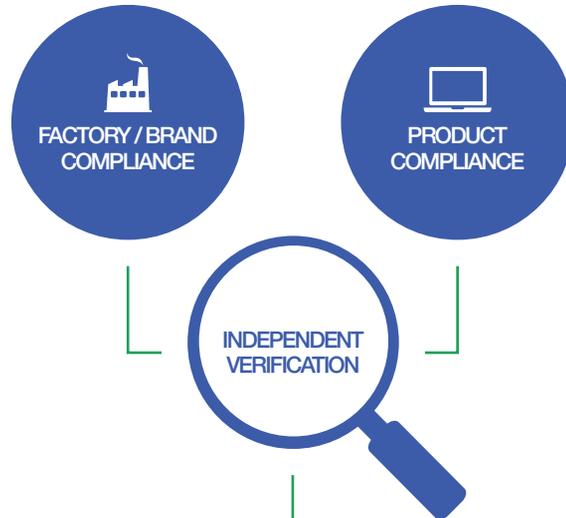
Verification pre and post certification

Our life-cycle approach also extends to our verification program, so that certified products continue to meet the criteria throughout their usable life. Product, brand owner and factory compliance in TCO Certified is assessed both pre and post certification. In addition, product claims, verification partners and brand engagement are also regularly evaluated for accuracy and continual improvement.

Overview of verification program in TCO Certified

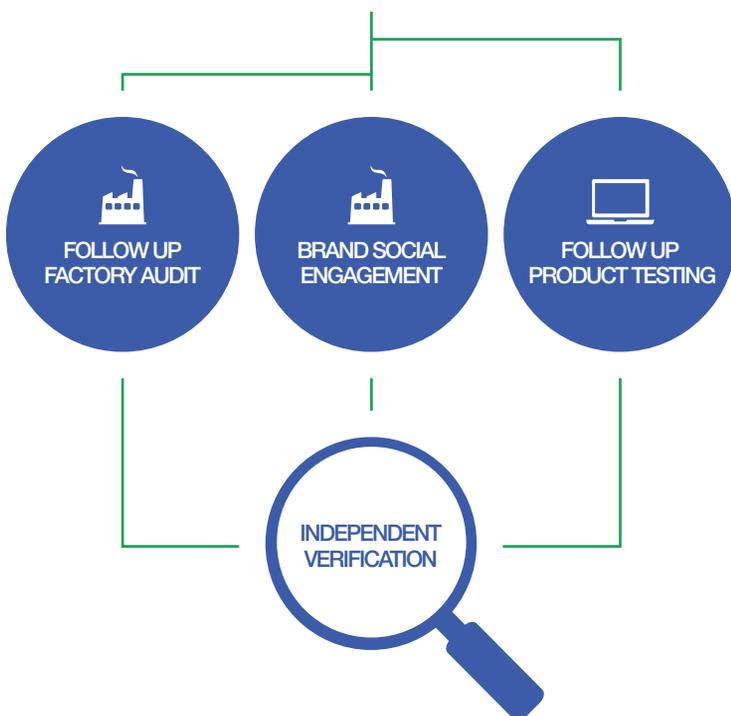
1. Pre certification

Verification of compliance with criteria before we certify a product



Application

Brand applies for TCO Certified



2. Post certification

Annual follow up verification after certification of product

1 - Pre certification verification

Prior to applying for a product certification, the product, brand owner and manufacturing facilities must pass a series of testing and verification measures to assess conformity with all criteria in TCO Certified.

Verification is carried out by independent test and verification bodies accredited to ISO 17025. These steps include:

Product compliance

All product models are tested and verified for compliance with criteria for:

- Performance, ergonomics, health & safety
- Environment - energy, hazardous substances, design for recycling.

Brand owner and factory compliance

Final assembly factories manufacturing TCO Certified products must comply with criteria for socially responsible manufacturing.

- Code of Conduct - based on key ILO and UN conventions, laws for labor rights, wages, social security
- Independent factory social audit reports from facilities manufacturing TCO Certified products
- Corrective Action Plans - CAP
- List of factories manufacturing TCO Certified product models, along with dates of most recent social audit
- Brand communication of Code of Conduct through the supply chain
- Nomination of a brand level representative responsible for factory working conditions

Compliance with all these criteria is verified by accredited independent verifiers, qualified according to SA8000 Advanced Auditor Training or equivalent.

Product environmental and factory social audit reports are independently verified. The social audit report and CAP are submitted to an independent verification organization specialized in social responsibility issues. The report and CAP are analyzed and a report issued, recommending whether the factory should be considered compliant or whether nonconformities need further action.

2 - Post certification verification

As part of the life cycle approach to verification, TCO Certified also includes a series of regular follow up steps post certification, to ensure continued compliance of products, brand owners and manufacturing facilities as well as accuracy of brand communications about certified products.

Follow up product verification

Every year a selection of certified products is subject to follow up spot checks. This process is carried out by an independent test and verification partner. Selected products typically represent multiple brands and product categories.

Annual brand review - socially responsible manufacturing

Each year, together with a representative from each brand owner, we carry out an individual review of the company's progress in socially responsible manufacturing and actions taken to prevent future nonconformities.

Follow up factory verification

Every year we appoint an independent social auditor with SA8000 Advanced Auditor Training, or equivalent, to carry out follow up factory inspections in select manufacturing facilities. The purpose is to monitor the implementations of corrective actions identified in the social audit report. These follow up audit sites are selected either with cause, due to earlier nonconformities that require follow up, or may also be randomly selected.

Additional quality assurance measures

Review of TCO Certified certification system

The certification system in TCO Certified is regularly reviewed both internally and externally for accuracy and consistency with the principles in ISO 14024 for Type 1 Ecolabelling. Internal reviews are carried out annually and the system has also been assessed by the Global Ecolabeling Network as part of the GENICES peer review accreditation.

More information is available at www.globalecolabelling.net/gen-members/genices/

Review of test and verification partners

With multiple accredited test and verification partners, each site must deliver accurate, repeatable results, regardless of location. Each test and verification body is therefore subject to regular review both by TCO Development and independent accreditation organizations.

TCO Development review - To maintain this consistency, we carry out regular 'round robin' product testing at all our verification partner sites. The purpose is to ensure consistency of test methods, equipment calibration and criteria interpretation. Accredited environmental and social reviewers are also assessed on a regular basis.

External review and accreditation - every test and verification site is also subject to annual accreditation by the International Laboratory Accreditation Cooperation (ILAC), the international organization for the accreditation of conformity assessment bodies including calibration laboratories (using ISO/IEC 17025)

Brand claims monitoring

Accuracy in product claims matters. TCO Development carries out continual market surveillance to ensure that only certified products are promoted as such and that brand communications around certified product models are accurate.



tcocertified.com