Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety

Umwelt Bundesamt

IDZ International Design Center Berlin

german federal award ecodesign

The concept of Ecodesign spans the entire life cycle of a product, from the extraction of raw materials to production, distribution and use – all the way to recycling and disposal. The most important criteria for ecodesign are summarised in the form of a criteria matrix compiled by the International Design Center Berlin, in cooperation with the German Federal Environment Ministry and the Federal Environmental Agency. This provides guidance and can be used as a tool in design practice.

„The quality of design is the quality of the world."

Otl Aicher

Ecodesign Criteria Matrix

	Preliminary production stages: creative process, planning, development, selection of raw materials, materials and manufacturing techniques, raw material extraction and processing	**Production**	**Distribution: marketing, packaging, sales**	**Use**	**End of Life: further use/re-use, recycling and disposal**
Idea and overall concept	• level of innovation and originality of craftsmanship • user integration in the creative process and in development • attention to the needs of potential users and not to current fashions and trends	• innovative, environmentally friendly method of production	• innovative distribution concepts that help to conserve energy and resources	• new use concepts (e.g. using instead of owning)	• integrated concept assumes re-use or further use of parts of a product • disposal-compatible design: idea/concept aims at as environmentally sound disposal as possible
Use of materials and energy	• choice of environmentally compatible materials: replenishable/renewable, available in sufficient quantity, certified organic, recycled, locally produced and processed, recyclable, biodegradable, durable, low an inherent energy • non-use of environmentally- and health-damaging substances • resource efficient design (e.g. through lightweight construction, miniaturisation, dematerialisation)	• resource efficiency: savings in manufacturing in terms of raw materials, water and energy • low material diversity • unmixed use of materials, monomaterial, no composites • labelling of used materials and components • utilisation of energy produced in an environmentally responsible manner and from renewable energy sources • local manufacturing, close proximity to suppliers	• packaging comprises environmentally friendly materials • reusable and recyclable packaging • reduction of fuel and energy consumption in transportation	• reduction of consumables (e.g. detergents, printing inks, paper, oil, solvents) • reduction of energy consumption in utilisation through savings programs, automatic functions, default settings, technical measures to mitigate environmentally harmful behaviour (e.g. automatic capacity regulation in washing machines, warning signs upon potentially environmentally harmful behaviour, information on current or aggregated energy consumption)	• separation and recycling of materials and recirculation into the natural and technical material flows • environmentally friendly disposal (e.g. through composting or good combustion properties of materials)
Design and construction	• aesthetic quality of the craftsmanship • quality, longevity • modular construction, choice of robust construction mechanisms • design that is appropriate to the function and materials	• technically high-quality workmanship, low susceptibility to wear • variability, multifunctionality, adaptability • option to upgrade (replacement of obsolete components e.g. high-quality technical equipment) or to refurbish (overhaul and repair for resale) • logistics-oriented manufacturing: reduction of product volume and weight (e.g. folding mechanisms, straightforward dismantling of the product)	• minimal and lightweight packaging • reduction in the loading and storage requirements	• self-explanatory, intuitive • user-friendly, easy to handle, forgiving • easy to read and to understand product graphics, menus and instructions • straightforward to maintain, easy and environmentally sound to clean • repairable	• straightforward disassembly of individual components, to as great extent as possible with standard tools • reparability of materials, pollutants, batteries for environmentally sound disposal
Pollutants (in air, water, soil) and wastes	• in the development of new products: non-use of environmentally harmful materials and manufacturing processes • in the reworking of existing products: identification of pollutants and waste-causing components, processes and substitution with sustainable materials and/or technologies	• low-emission manufacturing, prevention of noise and smells • reduction in CO_2 emissions, carbon-neutral manufacturing • pollution- and waste prevention, minimisation in the manufacturing process • use of Best Available Technology (BAT), cf. BAT reference documents on the Integrated Pollution Prevention and Control Directive (IPPC) • treatment of wastewater including production residues	• reduction of emissions through efficient logistics • choice of environmentally friendly means of transportation, non-use of air freight	• pollution prevention and minimisation in utilisation • waste prevention and minimisation in utilisation	• recycling of waste, recirculation in natural cycles • environmentally sound disposal of waste and pollutants
Social and health compatibility	• non-use of health-threatening materials and processes in the raw material extraction and processing • convention with the ILO's Core Labour Standards	• compliance with the ILO's Core Labour Standards • no child labour, socially just working conditions, fair/appropriate pay, no obstructions for works councils/unions • no hazardous handling and coating processes, protection of biodiversity	• adherance to principles of consumer- and data protection	• safe to use • ergonomic handling • no toxic/hazardous substances in the finished product • prevention/reduction of noise, low radiation exposure (relevant above all for IT products)	• application of social- and health-compatible recycling and disposal processes
Product communication and services	• the symbolic content, function of the design	• utilisation of resource-conserving communication formats and media e.g. digital instruction manuals, use of recycled paper in printed materials etc.	• good quality, consumer-oriented product information • indications provided for higher running costs (e.g. power consumption, consumables such as printer cartridges, coffee pods etc.) • customer-friendly and fair contracts	• clear, understandable, transparent • indications provided for the environmentally sound use of the product, also in the instructions • consumer information, product identification (e.g. Blue Angel) • repair and maintenance services	• return system • upgrading/refurbishment services • indications provided for the environmentally sound disposal of the product, also in the instructions