

Eco-design of shoes - by concurrently implementing a material index tool and joint capacity building

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## Abstract

In 2012, the association of Swedish shoe companies (manufacturers as well as importers and retailers) formed The Swedish Shoe Environmental Initiative, with the purpose to jointly increase the knowledge level regarding the environmental aspects of shoes and long term reduce the impact. Two main applied instruments in this process are 1) a set of environmental fact sheets covering the principal shoe materials, and 2) a material index tool, by which the shoe designers can calculate the environmental profile of a shoe design. This tool is under development and testing during 2014. The tool contains about 30 materials in the current pilot version, distributed on upper layer, middle layer and sole. The designer can choose materials according to the anticipated design and then the tool quickly indicates the environmental profile for a default use situation and similarly default setting for the end of life scenario. The tool covers the production phase of the material, as well as the waste management, which in the current pilot version is set to municipal solid waste incineration, The materials in the shoe will contribute to the energy generated in the incinerator, and the energy will be accounted for to substitute electricity and district heating produced by other means. The environmental profile currently covers five aspects in a life cycle perspective 1) climate impact; 2) resource characterization (e.g. renewable – nonrenewable; 3) toxic risks to humans; 4) toxic risks to ecosystems; 5) water consumption/depletion. The principally used method used for developing the material index is the Life cycle assessment approach and methodologies. For the pilot version some data gaps have been filled by qualified estimates, and in some cases by expert judgment.

The underlying information about the materials , such as typical uses, material properties and production routes, is developed by the members of SSEI themselves, and documented in fact sheets that are shared in the whole group. IVL is assisting specifically in helping developing the environmental assessment, which is also an integrated part of the development.

The prototype tool is tested in a selection of practical cases, and the outcomes will be presented at the conference in terms of results for cases, key findings regarding the usefulness of the tool, and a plan for further development and implementation.

Key words: environmental profile, eco-design, capacity building, SSEI