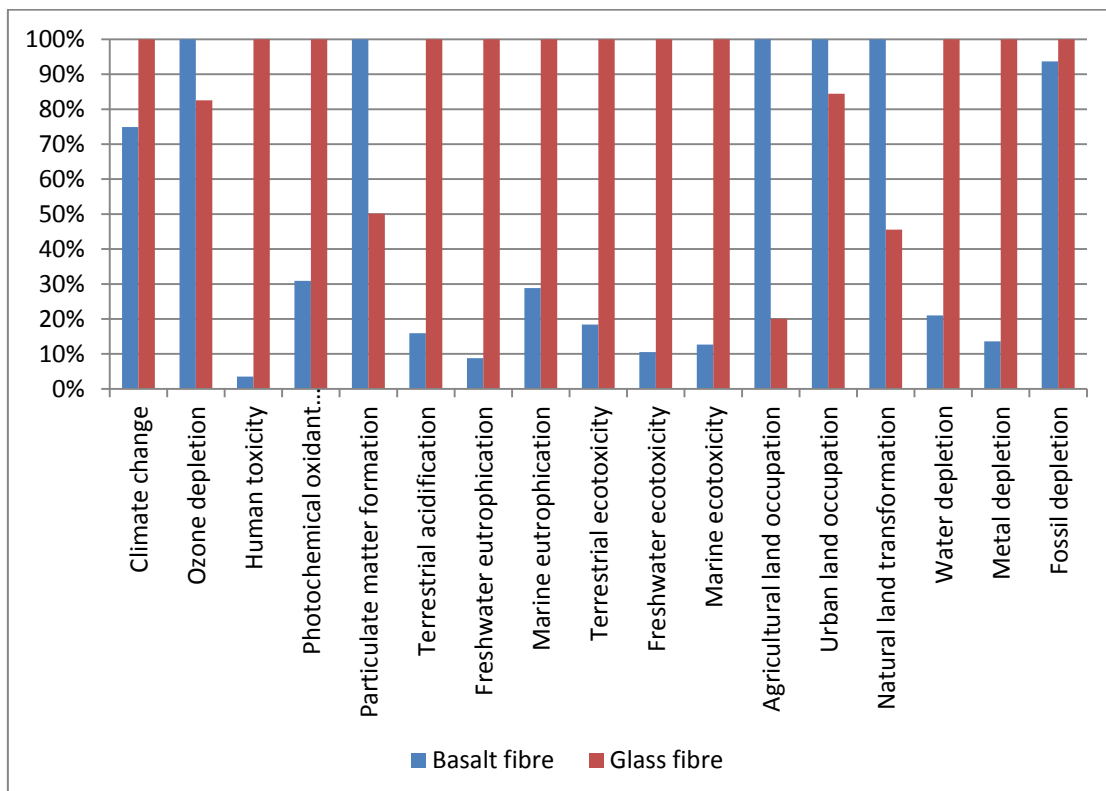


Screening LCA of Basalt fibers versus glass fibers

Together with its European distributor Basaltex, Kamenny Vek has recently performed a project with the Flemish Institute for Technological Research (VITO) from Belgium. The aim of this project was to carry out a screening life cycle assessment (LCA) of Basaltex materials (basalt fiber and BCF woven fabrics) and its alternative glass fiber and glass fiber woven fabrics.

LCA is a suitable method to analyse the environmental impacts of products, processes and/or systems, from an entire life cycle perspective. LCA quantifies the potential environmental effects of a product over its entire life cycle, meaning that the extraction of raw materials, the production of materials and the product, the use and the end-of-life treatment are taken into account.

Figure below presents the comparative environmental profile of basalt roving fibers and glass fiber.



The life cycle of the materials is divided in different life cycle phases:

1. Production of raw materials;
2. Transport of raw materials from supplier to producer of basalt fibers or glass fibers ;
3. Production of basalt fibers or glass fibers;
4. Transport to processing plant (weaver)
5. Weaving/Production of woven fabrics
6. Packaging of basalt woven fabrics or glass fiber woven fabrics ;
7. Transport to customers;
8. Use in composite application;
9. Transport to EoL;
10. EoL treatment.

Conclusion:

When comparing the Basalt fibers (and woven fabrics) with its alternative/competitor, the glass fiber (woven fabric) contributes significantly more to 12 environmental impact categories than the basalt fiber.

In other categories the impacts of the basalt fiber are mainly due to the mining activities of the basalt rocks and the use of natural gas.

VITO, Basaltex, Kamenny Vek
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