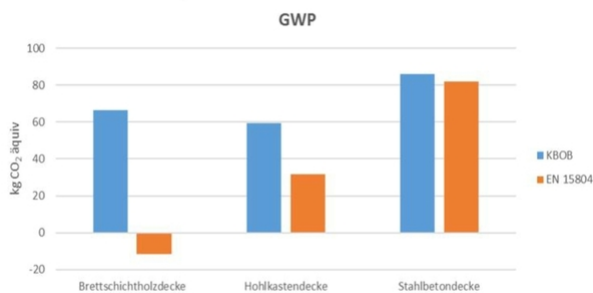


Life cycle assessment data of different ceiling systems

2017



The use of sustainable building products is increasingly in demand. As a result, three conventional ceiling structures were compared with regard to their life cycle assessment on the basis of various standards. This resulted in a calculation table for the evaluation of different building components in terms of their life cycle assessment.

The project

Basic principles and research procedure

The following three ceiling structures were compared: reinforced concrete ceiling, glulam ceiling and hollow core ceiling. In order to obtain meaningful results, three values were standardized: structural safety, sound insulation and fire resistance. The ceiling systems were compared using the following standards: - EN 13804: Building Sustainability - EPD: Health Information Document - Ecoinvent: Environmental Impact Product Database - KBOB: Life Cycle Assessment Building Materials Database

The construction method

Results and Conclusion Depending on the evaluation methods, the ceiling structures perform very differently. If the three ceiling systems are compared on the basis of global warming potential, all ceilings in the future would have to be built with the glulam system. This is because the glulam ceiling has a positive overall balance with regard to environmental compatibility. Through the use of wood, CO₂ is stored, which plays a major role in the balance. Title of work: Analysis of the life cycle assessment data of ceiling systems in timber and solid construction. Type of work: Thesis School: Bern University of Applied Sciences Field of study: Bachelor of Science in Wood Technology, specialization TST Author: Alois Räber