COMPARATIVE LIFE CYCLE ANALYSIS OF AN INTEGRAL ABUTMENT COMPOSITE BRIDGE AND A CONCRETE BRIDGE WITH EXPANSION JOINTS

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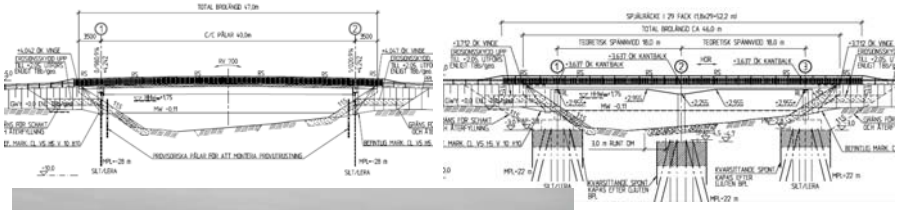
Comparative LCA – Integral bridge vs Concrete bridge

1) **General description:** The case study is comparing a steel-composite integral bridge and a concrete bridge.
Base analysis: An integral bridge, built in 2006 over the river Leduån in northern Sweden, with a span of 40 m.
Comparative analysis: The inititally suggested solution –
A reinforced concrete bridge in two spans with expansion joints.

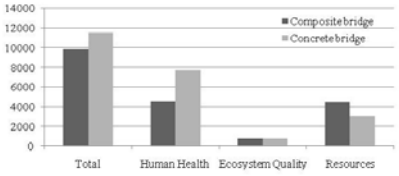


Comparative LCA – Integral bridge vs Concrete bridge

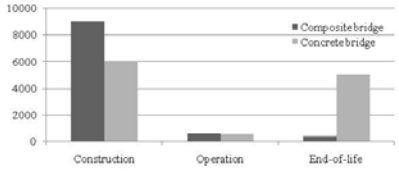
2) Aims of the Case Study:

- To make a comparative life cycle analysis between the suggested bridges.
- To enhance the advantages of the integral abutment bridge, in regard of economical and environmental aspects.
- To reduce initial costs and maintenance efforts.

3) Status of the Case Study: On-going



Total damage analysis per bridge solution



Damage analysis per life cycle stage

4) Possible contribution from other C25 members

- Experience on the maintenance from similar bridges
- LCA of material components from different countries
- LCA of other solutions