NTNU

April 24, 2023

Results from Element Matching

Project name: Bod nidarosdomen

Construction site located at: 63.4269, 10.3969

Summary of results

Total score	Substitutions	Savings
4224.94 kg CO2	65.0%	61.31%

The best results are obtained with the Bipartite plural algorithm. By using the matching tool, 13/20 demand elements (65.0%) are substituted. The metric used for optimization is GWP, and gives a total score of 4224.94 kg CO2 equivalents. To compare, only using new elements would have given a score of 10919.78 kg CO2 equivalents. This results a total saving of 61.31%. To see the substitutions, open the CSV file with file path './Results/substitutions.csv'

Information about datasets

Elements	Filename	Number of elements
Reused	pdf_supply.csv	20
Demand	pdf_demand.csv	20

Constants used in calculations

Constant	Value	Unit
Density timber	491.0	kg/m^3
Density steel	7850	kg/m^3
GWP new timber	28.9	kg C02 equivalents
GWP reused timber	2.25	kg C02 equivalents
GWP new steel	800	kg C02 equivalents
GWP reused steel	4	kg C02 equivalents

Metric used: GWP