CONSTRUCTION OF QATAR’S RAIL USING WASTE STEEL SLAG AS A BALLAST MATERIAL

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Outline

- Goals and objectives
- Achievements and outcomes
- Post projects plans
Goals and objectives

To investigate the feasibility of using steel slag aggregate (SSA) produced in Qatar in railway construction.

To reduce the importation of natural aggregates.

To perform physical, chemical, environmental, mechanical and durability tests on SSA produced in Qatar

To evaluate the environmental impact of the SSA by performing a life cycle assessment (LCA) analysis
Achievements and outcomes

1. SSA generated by Qatar steel companies could be used safely as a replacement for railway ballast, as the chemical compositions were similar to gabbro and limestone aggregates.

2. SSA meets the QCS 2014 requirements for mechanical and physical tests.

3. SSA showed a better performance than the imported aggregate in terms of water absorption, Los Angeles abrasion, and magnesium sulphate soundness loss.
Post projects plans

- Future projects will include more dynamic tests such as vibrations and noise resistance to gain a deeper understanding into the serviceability of the SSA in railroad applications.