Mass Concrete with EAF Steel Slag Aggregate: Workability, Strength, Temperature Rise, and Environmental Performance

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Supplementary data

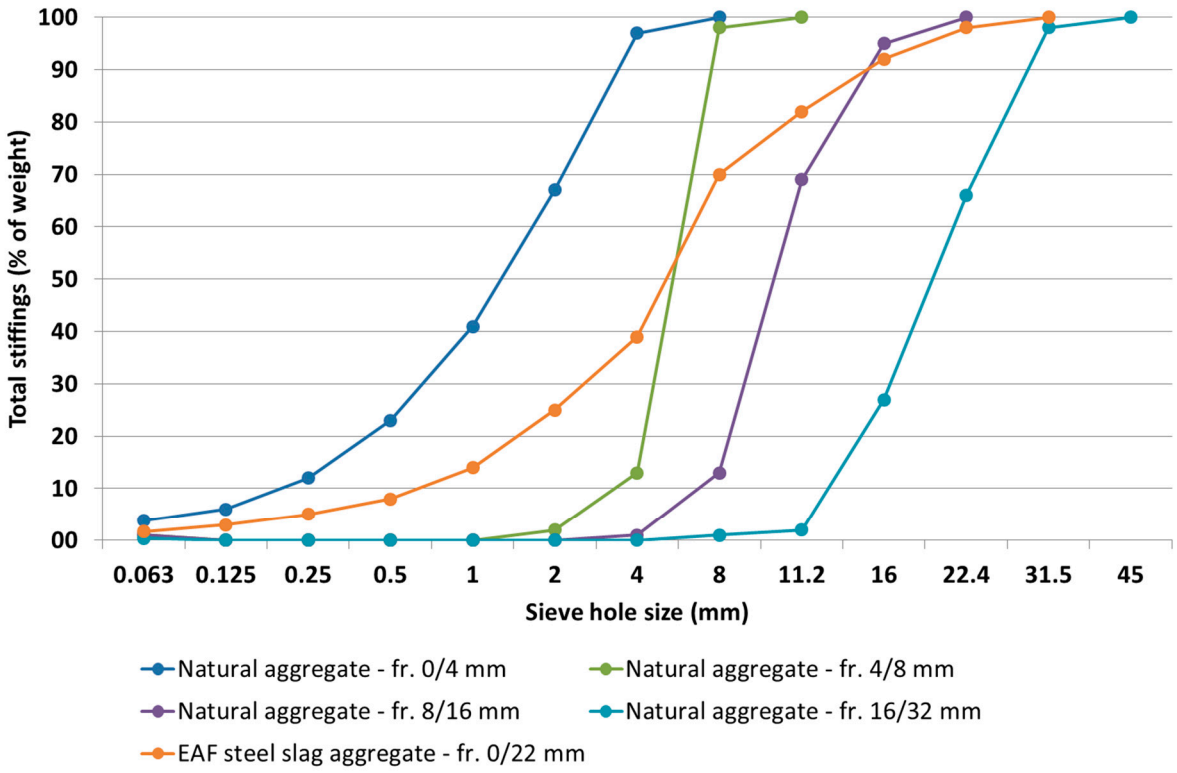

Figure S1. **Grain size distribution curves of natural and EAF steel slag aggregates.**

Table S1. The materials and processes included in the LCA study.

Inputs	MB-1	MB-2	MB-3	MB-4	MB-5	MB-6	MB-7	MB-8
Raw materials								
Cement (Type II) (kg)	320	/	350	/	320	/	350	/
Cement (Type III) (kg)	/	320	/	350	/	320	/	350
Plasticizer (kg)	1.92	1.92	1.75	1.75	1.60	1.60	1.75	1.75
Natural aggregate (kg)	1990	1984	1924	1918	994	991	960	926
EAF steel slag aggregate (kg)	/	/	/	/	1228	1223	1185	1183
Energy and water – concrete production								
Electricity (kWh)	5.6	5.6	5.6	5.6	6.2	6.2	6.2	6.2
Water (kg)	164	164	178	178	216	216	227	227
EAF steel slag processing								
Electricity (kWh)	/	/	/	/	3.56	3.55	3.44	3.43
Diesel fuel (kg)	/	/	/	/	0.21	0.21	0.20	0.20
Water (kg)	/	/	/	/	27	27	26	26
Metal recovery								
Electricity (kWh)	/	/	/	/	34.38	34.24	33.18	33.12
Diesel (kg)	/	/	/	/	1.04	1.04	1.01	1.01
Outputs	**MB-1**	**MB-2**	**MB-3**	**MB-4**	**MB-5**	**MB-6**	**MB-7**	**MB-8**
Emissions – natural aggregate processing (kg)								
The relevant emissions have been calculated based on the values provided in **Table 7 in Marinković et al. [44]**								
Avoided impacts	**MB-1**	**MB-2**	**MB-3**	**MB-4**	**MB-5**	**MB-6**	**MB-7**	**MB-8**
Avoided pig iron production (kg)	/	/	/	/	9.82	9.78	9.48	9.46
Avoided disposal of EAF steel slag (kg)	/	/	/	/	1228	1223	1185	1183

References

44. Marinković, S.; Radonjanin, V.; Malešev, M.; Ignjatović, I. Comparative environmental assessment of natural and recycled aggregate concrete. *Waste Manag.* **2010**, *30*, 2255–2264, https://doi.org/10.1016/j.wasman.2010.04.012.