

Supplementary Materials

Table S1. Life Cycle Impact Assessment considering the mortar with 0% of OSPW and cement type CPV.

Categoria de Impacte	Unit	Totalt	CPV Cement	Conveyor Belt	Electricity	Industrial Machine	Packing. Cement	Sand
Global warming	kg CO ₂ eq	0.1813491	0.136260213	4.3162 × 10 ⁵	5.9466 × 10 ⁷	1.5966 × 10 ⁵	0.0095821	0.03544706
Stratospheric ozone depletion	kg CFC11 eq	2.5194 × 10 ⁸	1.02752 × 10 ⁸	1.24141 × 10 ¹¹	1.5492 × 10 ¹²	5.9831 × 10 ¹²	3.5166 × 10 ⁹	1.1382 × 10 ⁸
Ionizing radiation	kBq Co-60 eq	0.00176875	0.000752016	1.81884 × 10 ⁶	5.1456 × 10 ⁸	8.5558 × 10 ⁷	0.00026569	0.00074832
Ozone formation. Human health	kg NO _x eq	0.00036976	0.000213189	1.02948 × 10 ⁷	8.6011 × 10 ¹⁰	4.2635 × 10 ⁸	1.4336 × 10 ⁵	0.00014209
Fine particulate matter formation	kg PM _{2.5} eq	0.0001639	7.90046 × 10 ⁵	8.78412 × 10 ⁸	9.1375 × 10 ¹⁰	4.2899 × 10 ⁸	1.1436 × 10 ⁵	7.3329 × 10 ⁵
Ozone formation. Terrestrial ecosystems	kg NO _x eq	0.00037443	0.000215219	1.07799 × 10 ⁷	8.7392 × 10 ¹⁰	4.4465 × 10 ⁸	1.4844 × 10 ⁵	0.00014422
Terrestrial acidification	kg SO ₂ eq	0.00040068	0.00019867	1.32282 × 10 ⁷	1.8995 × 10 ⁹	8.0209 × 10 ⁸	1.3745 × 10 ⁵	0.00018805
Freshwater eutrophication	kg P eq	2.0521 × 10 ⁵	1.034 × 10 ⁵	3.20799 × 10 ⁸	1.5427 × 10 ¹⁰	1.9126 × 10 ⁸	1.3061 × 10 ⁶	8.8232 × 10 ⁶
Marine eutrophication	kg N eq	2.4625 × 10 ⁶	6.6089 × 10 ⁷	1.21564 × 10 ⁹	1.0636 × 10 ¹¹	9.1251 × 10 ¹⁰	1.231 × 10 ⁶	5.6848 × 10 ⁷
Terrestrial ecotoxicity	kg 1,4-DCB	0.22557415	0.064117632	0.000233769	8.1859 × 10 ⁷	0.00028064	0.01472912	0.14621217
Freshwater ecotoxicity	kg 1,4-DCB	0.00142172	0.000580212	4.95232 × 10 ⁶	1.3641 × 10 ⁸	2.9836 × 10 ⁶	0.00020439	0.00062917
Marine ecotoxicity	kg 1,4-DCB	0.00206863	0.000830188	6.97044 × 10 ⁶	1.794 × 10 ⁸	4.2584 × 10 ⁶	0.00028718	0.00094001
Human carcinogenic toxicity	kg 1,4-DCB	0.00229859	0.00103429	2.84795 × 10 ⁵	1.2491 × 10 ⁸	1.1112 × 10 ⁵	0.00017978	0.00104491
Human non-carcinogenic toxicity	kg 1,4-DCB	0.0466397	0.018114131	0.00014667	1.8902 × 10 ⁷	9.68 × 10 ⁵	0.00704217	0.02123974
Land use	m ² a crop eq	0.00886759	0.000524948	8.19979 × 10 ⁷	3.2944 × 10 ⁹	3.6663 × 10 ⁷	0.00674001	0.00160144
Mineral resource scarcity	kg Cu eq	0.00078007	0.000716919	1.69136 × 10 ⁶	4.928 × 10 ¹⁰	7.5016 × 10 ⁷	8.0297 × 10 ⁶	5.2683 × 10 ⁵
Fossil resource scarcity	kg oil eq	0.02079447	0.010924265	9.14376 × 10 ⁶	1.3648 × 10 ⁷	3.4009 × 10 ⁶	0.00102539	0.00883214
Water consumption	m ³	0.00160024	0.000259002	5.60071 × 10 ⁷	5.3877 × 10 ⁸	2.0441 × 10 ⁷	9.2755 × 10 ⁵	0.00124766

Table S2. Life Cycle Impact Assessment considering the mortar with 30% of OSPW and cement type CPV.

Categoria de Impacte	Unidade	Total	CPV Cement.	Conveyor Belt	Electricity	Industrial Machine	Packing. Cement	Sand	OSPW
Global warming	kg CO ₂ eq	0.1708662	0.13626021	4.3162×10^5	5.9466×10^7	1.5966×10^5	0.0095821	0.02481294	0.00015122
Stratospheric ozone depletion	kg CFC11 eq	2.1867×10^8	1.0275×10^8	1.2414×10^{11}	1.5492×10^{12}	5.9831×10^{12}	3.5166×10^9	7.9676×10^9	8.7894×10^{11}
Ionizing radiation	kBq Co-60 eq	0.00154741	0.00075202	1.8188×10^6	5.1456×10^8	8.5558×10^7	0.00026569	0.00052383	3.1517×10^6
Ozone formation. Human health	kg NO _x eq	0.00032797	0.00021319	1.0295×10^7	8.6011×10^{10}	4.2635×10^8	1.4336×10^5	9.946×10^5	8.3379×10^7
Fine particulate matter formation	kg PM _{2.5} eq	0.00014212	7.9005×10^5	8.7841×10^8	9.1375×10^{10}	4.2899×10^8	1.1436×10^5	5.133×10^5	2.1284×10^7
Ozone formation. Terrestrial ecosystems	kg NO _x eq	0.00033201	0.00021522	1.078×10^7	8.7392×10^{10}	4.4465×10^8	1.4844×10^5	0.00010095	8.4747×10^7
Terrestrial acidification	kg SO ₂ eq	0.00034477	0.00019867	1.3228×10^7	1.8995×10^9	8.0209×10^8	1.3745×10^5	0.00013163	5.0346×10^7
Freshwater eutrophication	kg P eq	1.7886×10^5	1.034×10^5	3.208×10^8	1.5427×10^{10}	1.9126×10^8	1.3061×10^6	6.1762×10^6	1.224×10^8
Marine eutrophication	kg N eq	2.2929×10^6	6.6089×10^7	1.2156×10^9	1.0636×10^{11}	9.1251×10^{10}	1.231×10^6	3.9794×10^7	9.3385×10^{10}
Terrestrial ecotoxicity	kg 1.4-DCB	0.18261204	0.06411763	0.00023377	8.1859×10^7	0.00028064	0.01472912	0.10234852	0.00090155
Freshwater ecotoxicity	kg 1.4-DCB	0.00123479	0.00058021	4.9523×10^6	1.3641×10^8	2.9836×10^6	0.00020439	0.00044042	1.8251×10^6
Marine ecotoxicity	kg 1.4-DCB	0.00178959	0.00083019	6.9704×10^6	1.794×10^8	4.2584×10^6	0.00028718	0.00065801	2.9661×10^6
Human carcinogenic toxicity	kg 1.4-DCB	0.0019886	0.00103429	2.848×10^5	1.2491×10^8	1.1112×10^5	0.00017978	0.00073144	3.4904×10^6
Human non-carcinogenic toxicity	kg 1.4-DCB	0.04033315	0.01811413	0.00014667	1.8902×10^7	9.68×10^5	0.00704217	0.01486782	6.537×10^5
Land use	m ² a crop eq	0.00839005	0.00052495	8.1998×10^7	3.2944×10^9	3.6663×10^7	0.00674001	0.00112101	2.8903×10^6
Mineral resource scarcity	kg Cu eq	0.00076454	0.00071692	1.6914×10^6	4.928×10^{10}	7.5016×10^7	8.0297×10^6	3.6878×10^5	2.7541×10^7
Fossil resource scarcity	kg oil eq	0.0181947	0.01092427	9.1438×10^6	1.3648×10^7	3.4009×10^6	0.00102539	0.0061825	4.9867×10^5
Water consumption	m ³	0.0012526	0.000259	5.6007×10^7	5.3877×10^8	2.0441×10^7	9.2755×10^5	0.00087336	2.6664×10^5