

Fabrication of Thermal Insulated Bricks-Based on partial replacement of *pleurotus florida* Spent Mushroom Materials as Energy Saving Building Material

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Table S1 demonstrates physico-mechanical and thermal characteristics of bricks substituted with different waste material.

No.	Waste material	Compressive strength (MPa)	Water Absorption (%)	Bulk density (Kg/m ³)	Thermal conductivity (W/mK)	References
1.	Diatomaceous earth residues (3 – 10%)	12.7 –9.5	-	1770 - 1670	0.65-0.45	[1]
2.	Rice husk (10 – 30%), wood ash wastes (10 – 30%)	53.4 –13.5 MPa.	21.2% - 32.9%	1839 – 1394	0.68-0.34	[2]
3.	Waste coal (up to 30 %)	–	11.8 – 13.2	1040 - 1250	0.19 - 0.23	[3]
4.	Olive mill waste (0, 5, and 10%)	36.9 – 10.26	14.5% - 32.5%	1920 - 1450	0.638 - 0.436	[4]
5.						
6.	Olive pomace bottom ash (10, 20, 30, 40, and 50%)	33.9 – 10.5	19% - 3 1.5%	1635 - 1278	0.143 -0.166	[5]
7.	Kindling from vine shoots (5, 11, and 17%)	38.04 – 1.556	16.93% - 36.04%	1684 - 1124	0.738 - 0.208	[6]
8.	Wheat straw, olive stone flour (4% and 8%), and sunflower seed cake (4%)	5.3 – 10.9	17.8% - 30%	1700 - 1460	0.55-0.36	[7]
9.	Marble powder (0, 5, 10, 15, 20, 25, 30, and 35%)	34.2 – 8.2	10.9% - 26.9%	2050 - 1590	0.97 -0.40	[8]
10.	Biomass ash (100- 50%), and dust filter (0 – 50%)	17.3 – 5.9	19.8% - 27.5%	1471 - 1346	0.655 - 0. 42	[9]
11.	Glass powder (20 – 35%) and palm oil fly ash (20 – 35%)	15.39 – 7.21	11.48% - 18.5%	1628 – 1338.7	0.39	[10]

12.	Sawdust (5 - 20 vol%), wood ash (5 -15 vol%), and lime mud (5 -15 vol%)	0.83 - 7.56	11.5% - 24%	2080 - 1380	0.55 – 1.12	[11]
13.	Bio - briquette ash (5 – 55%)	3.64 - 4.19	13% - 25%	1470 - 1170	0.65-0.36	[12]
14.	Recycled fine aggregate (25 -100%)	12.75 – 20.98	9.33 - 11.46 %	1968 – 1962	0.82	[13]
15.	Spent Mushroom Materials (0-15 wt%)	8.69 – 18.45	13.91– 23.58	1419.98 – 1922.03	0.29 – 0.77	This study

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