



(51) International Patent Classification:

C04B 28/02 (2006.01) C04B 111/60 (2006.01)
C04B 28/04 (2006.01) C04B 111/94 (2006.01)
C04B 28/14 (2006.01)

(21) International Application Number:

PCT/IB2023/053459

(22) International Filing Date:

05 April 2023 (05.04.2023)

(25) Filing Language:

Hungarian

(26) Publication Language:

English

(30) Priority Data:

P2200128 25 April 2022 (25.04.2022) HU

(71) Applicant: **VOLTOCRETE INNOVATION KFT.**
[HU/HU]; Jókai utca 45-47. tetőtér 35., 7622 Pécs (HU).

(72) Inventors: **LUDVIG, Péter**; Rua Apucarana 269, apartamento 201, 31.320-520 Belo Horizonte (BR). **CSANÁDY, Dániel**; Dadi út 37, 2890 Tata (HU).

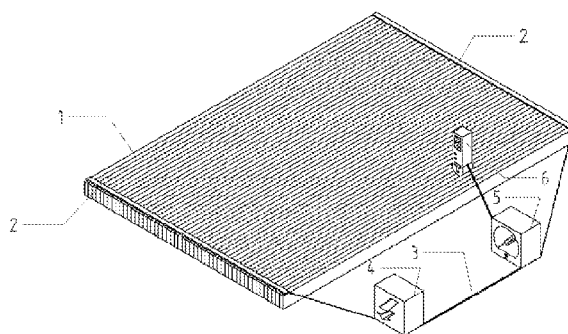
(74) Agent: **PINTZ, György**; Pintz & Partners LLC, Pf. 245, 1444 Budapest (HU).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM,

AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CV, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IQ, IR, IS, IT, JM, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, MG, MK, MN, MU, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, WS, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, CV, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SC, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, ME, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

(54) Title: CEMENT-BASED ELECTRIC SURFACE HEATING STRUCTURE AND METHOD OF MANUFACTURING THE SAME



1. Fig.

(57) Abstract: An electric surface heating structure, comprising a building structural unit (1), contacts (2), electrical wire (3) and power source (4), characterized in that the building structural unit (1) consists of a post-hardening mixture of - water - 15-30 mass% of cement or cementitious binder, - 45-80 mass% of aggregates being an electrically conductive aggregate and a non-conductive aggregate, - 0.5-10 mass% of semiconductor and carbon-based aggregates, - 2-10 mass% of fibrous material, - 0.1-5 mass% of admixtures which improves the processing and/or the mechanical properties. A method for producing an electric surface heating structure according to claim 1, wherein a post-hardening mixture of water, 15-30 mass% cement, 45-80 mass% aggregates and 2-10 mass% fibrous material is produced, characterized in that 0.5-10 mass% of semiconductor and carbon-based aggregates are added to the mixture before post-consolidation, a post-hardening building structural unit (1) is formed by spreading or pouring the mixture into a formwork and contacts (2) are attached to the building structural unit (1) during or after post-consolidation. Such a structure may be an outdoor de-icing pavement, a heatable interior plaster or a heatable masonry element.

