Title (en)

ARRANGEMENT FOR MOUNTING A THERMALLY INSULATED ELECTRIC HEATING COIL, IN PARTICULAR FOR AN INFRARED RADIANT-TYPE COOKING PLATE AS WELL AS A THERMAL INSULATION SHEET FOR THIS PURPOSE AND A METHOD OF ITS MANUFACTURE

Publication

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Application

EP 81107789 A 19810930

Priority

DE 3102935 A 19810129

Abstract (en)

[origin: EP0057252A2] In an arrangement for mounting a thermally insulated electric heating coil (5), a thermal insulation sheet (2) with an insulation layer (9) of high-quality thermal insulation material on the basis of a fine-porous silicic acid aerogel in a retaining shell (1) is used. At least the coil-shaped supporting slots (8) for the turns of the heating coil (5), expediently however the complete surface of the thermal insulation plate (2), are provided with a coating (7) of a mixture having a high proportion of ground mineral fibres and ceramic binding agent, which mixture is solidified at the temperatures in use in the heating coil (5) by ceramic bonding. As a consequence of the mechanical solidification of the coating (7), the turns of the heating coil (5) can be anchored directly, by means of an inorganic, high- temperature resistant adhesive (6), which likewise may contain a ceramic bonding agent, to the coating (7), without mechanical means of attachment being required. Especially if the thermal insulation sheet (2) is coated on all sides by means of a spraying or dipping process, such a thermal insulation sheet is especially suitable for prefabrication at a different point from where the installation of the heating coil (5) takes place, since the coating (7) protects the thermal insulation material, which has little mechanical resistance, during handling, storage and transportation of the thermal insulation sheets (2). After the application of the coating (7) under the addition of water, it is necessary merely to carry out drying at, for example, 100 to 150 DEG C, which takes less energy and time than a hardening process, while the ceramic bonding is produced without additional cost by the temperatures in use in the heating coil (5), at least where mechanical stresses occur as a consequence of thermal dimension changes of the heating coil (5). The bonding of the coating (7) after drying can be improved, if required, by a slight addition of organic binding agent which is combusted, essentially without residue, at the operating temperatures of the heating coil (5) and the function of which is then taken over by the ceramic bonding used. <IMAGE>

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CPC (source: EP)

H05B 3/748 (2013.01); H05B 2203/017 (2013.01)

Citation (search report)

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