

Method of silvering surfaces, especially aluminium surfaces

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Who are we?

Patent information

Technology
readiness
level:
9

Title: Method of silvering surfaces, especially aluminium surfaces

Patent number: EP2447313

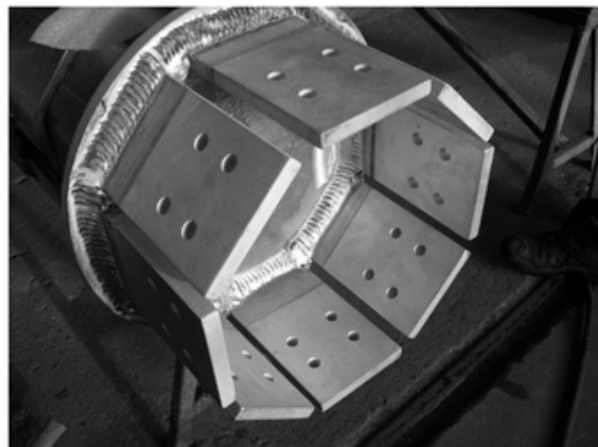
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Jurisdictions: Poland.

The invention relates to a method of silvering surfaces sensitive to high temperatures, as for example aluminium surfaces, foils, paper or fabric. Presented method provides silvering aluminium surfaces, wherein the sintering stage is performed at temperatures significantly below the aluminium melting temperature, preferably within the range of about 200°C – 400°C, so that the aluminium surface being silvered remains undamaged after the sintering stage.

This method includes a stage of applying onto surface a paste consisting of 80–85% by weight of nano – particles of silver and 15–20% by weight of organic carrier based on methyl polymethacrylate. Because the paste used does not contain glaze – after sintering paths or layers that are obtained, it can operate at high temperatures and that provide good heat dissipation. Presented method is capable of silvering the surfaces in a simple, rapid, an economical and an environmental friendly manner with high sensitivity and selectivity.



Technology Summary



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The potential behind the technology

Currently, different methods of aluminium silvering, are commonly known. However, these methods are generally expensive and time-consuming or require the use of chemical compounds, which frequently are toxic, harmful to health and natural environment. On the contrary, our method can be applied to silvering surfaces sensitive to temperature, such as aluminium, plastics (foils), fabrics.

Technology Advantages

- Layers obtained using this method, withstand continuous operation at the temperature of 450°C at current load of 2.5A;
- Silvering using the present method does not require any intermediate layers to be used;
- Presented method is relatively quick and cheap;
- Screen printing as an inexpensive and commonly available method may be applied without excessive outlays even by small and medium-size companies;
- Applied pastes do not comprise lead or other harmful substances so they meet stringent requirements of ecological standards;
- The inventive method is less burdensome to the surroundings, natural environment and health of employees.

Application

Method of silvering surfaces is an innovative solution dedicated for surfaces sensitive to high temperatures, as for example aluminium surfaces, foils, paper and fabric. Potential applications for this technology include:

- electrical power engineering;
- high power industry;
- printed and flexible electronics.



Collaboration type

License agreement or sale agreement

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