Claims

1. Process for production of a functionalized particle foam moulding based on thermoplastic base material with a glass transition temperature of at least 100 °C measured by DSC according to DIN EN ISO 11357-2 (published: 2014-07), comprising the process steps in the sequence specified of:
a) providing base particles comprising at least one blowing agent and at least one nucleating agent;
b) feeding the base particles into a device suitable for moving and heating the base particles;
c) simultaneously pre-foaming and functionalizing the base particles, by bringing them into contact with a solution or dispersion comprising at least one functionalizing agent,
wherein the at least one functionalizing agent is an adhesive and optionally one or more further functionalizing agents are used together with the adhesive to functionalize the base particles, and the particles are treated with a solution or emulsion of water and/or solvent and at least one functionalizing agent,
wherein the functionalizing agent is selected from the group consisting of biocides, fungicides, adhesives, fibers, dyes, pigments, electrically conductive base particles and mixtures of the above,
so that functionalized particles are obtained which have at least partially an adhesive layer and optionally one or more functionalizations on their surface;
d) optionally drying the functionalized particles;
e) optionally interim storage of the functionalized particles;
f) mould foaming of the functionalized particles by heating in a shaping container so that a functionalized particle foam moulding is formed.

2. Process according to Claims 1, wherein the base material is selected from the group consisting of polyimide and polyacrylates, preferably polymethacrylimide (PMI), polyetherimide (PEI), polymethyl (meth)acrylate (PM(M)A) and mixtures of the above.

3. Process according to Claim 1, wherein the blowing agent is selected from the group consisting of volatile organic compounds having a boiling point at standard pressure below the glass transition temperature of the base material, inorganic blowing agents, thermally decomposable blowing agents and mixtures of the above.

4. Use of the functionalized particle foam mouldings, produced by means of the process according to any of Claims 1 to 3, in the production of goods for the aerospace industry, for shipbuilding, for wind power, sport and leisure equipment, for vehicle construction, especially in electrical mobility.