It was a further object to provide a process with which the moulding surface can be configured very variably both with regard to technical aspects and with regard to the visual appearance.

Furthermore, it should be possible by virtue of the process to obtain mouldings with outstanding mechanical properties. More particularly, the mouldings should exhibit a high scratch resistance and hardness. Furthermore, the coated mouldings should have a high weathering and chemical resistance. Furthermore, the process should be able to produce mouldings with a high precision and uniform high quality.

Furthermore, the process should enable a very long service live of an injection moulding system.

Summary

In a first aspect of the present disclosure, there is provided a process for producing coated mouldings, characterized in that structured and multifunctional surfaces are produced alongside high-gloss surfaces in a closed mould in a combination of an injection moulding process step and of a subsequent expansion-flooding-embossing process step, and in that the process is performed without changing the mould.

In a second aspect of the present disclosure, there is provided a system for performing a process as defined above, said system having an alterable injection mould, characterized in that the temperature of at least one part of the injection mould can be altered by more than 10°C within 1 minute.

In a third aspect of the present disclosure, there is provided a coated moulding, characterized in that it is producible by the process as defined above, in that the coated moulding after the coating has shiny surface regions with scratch-resistant coating and/or structured, non-shiny surface regions with scratch-resistant coating, and in that, at the time of injection of the reactive mixture, the moulding has a temperature of at least 70°C, and the reactive mixture is hardened at a temperature of at least 100°C.

Solution

The objects were achieved by a novel process, by means of which coated mouldings can be produced with structured and multifunctional surfaces alongside high-gloss surfaces. More particularly, it is possible to produce mouldings which have multifunctional nanostructured surfaces and multifunctional high-gloss surfaces. The process according to the invention is notable in that it is performed in only one closed mould. One form of the production process is the combination of an injection moulding process step and of a subsequent expansion-flooding-embossing process step. A particular feature of the process according to the invention is that it is performed without changing the mould.

In the context of the present invention, multifunctional surfaces describe the multiply variable configuration of the coating, for example with additives. According to the invention, mouldings are obtained with outstanding mechanical properties by the