

Status and Innovation Trends in Hot Stamping of USIBOR 1500 P

Steel Research Int., 79 (2008), No.2, 85-91 DOI: 10.2374/SRI08SP010-79-2008-85-91

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Thanks to its superior mechanical properties after hot stamping, USIBOR 1500 P experiences a very rapid growth in anti-intrusion applications of automotive structures (bumpers, doors, bodies-in-white). As the blank is stamped at high temperature (typically between 600°C and 800°C) and then immediately quenched in the closed forming die, the very high strength level of 1500 MPa can be achieved without shape deviation or springback, and for very complex shapes. This performance cannot currently be matched by any other cold stamped material. This paper intends to give a short overview of the current status in application of USIBOR 1500 P, with a specific focus on the thermo-mechanical modelling of its stamping behaviour in finite element simulation. Current innovation trends with respect to the material itself, its processing and the opportunities it offers in terms of tailored mechanical properties will be presented and discussed.

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