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POTENTIAL APPLICATIONS OF HYBRID FORMING OF ALUMINUM ALLOYS IN AIRCRAFTS

Abstract

A new forming process, the hybrid forming of aluminum alloys is introduced in this paper. The application of this forming process in the high-class vehicles is reviewed. In the process, the aluminum alloy sheet is formed and quenched simultaneously followed by a second stage precipitation period. The forming process has greatly improved the formability and strength of aluminum alloys. A much lighter and stronger component, with more complex geometry can be obtained. Advanced research on this process is presented in the paper. The potential applications of hybrid formed aluminum alloys components in aircrafts are discussed. Both advantage and disadvantage of the application is reviewed.