

# Production of metallic foam-filled hydroformed tubes as structural parts

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## **Abstract**

Tube HydroForming (THF) represents an interesting alternative to traditional production processes and potentially meets in a very effective way the main applications of the metallic foams. In fact, on the one hand the THF processes are typically used to produce hollow tubular shells, with variable section, that seem to be naturally suited for coupling with an internal metallic foam reinforcement and therefore for structural applications; on the other hand, the possibility to increase the mechanical strength of hydroformed parts allows to plan the process more freely and flexibly. In the first part of this paper the Tube Hydroforming process and its main technological characteristics are shortly described; then, some potential applications of foam-filled hydroformed tubes are presented. The whole production cycle of a simple hydroformed and aluminium foam-filled part is finally shown.