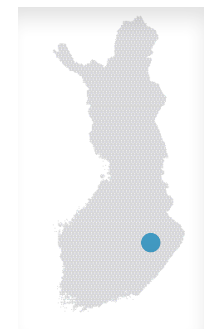






Lightweight Fuel Tank



Fabrication process	Hydroforming
Grade/surface	HyTens
Material supplier	Outokumpu
Source of information	Outokumpu

During the course of their development, fuel tanks for passenger cars have progressed from aluminized steel to polymers, generally in search of weight reduction and ease of formability. High strength austenitic stainless steels now provide an opportunity to make fuel tanks lighter and safer while retaining their inherent strength. A proprietary grade with a fully austenitic structure has been developed which has a more stable price structure, providing an obvious advantage for the automotive industry, which has to specify materials several years ahead of their use. Compared to the current generation of multi-layer polymer counterparts, stainless steel fuel tanks can significantly reduce the wall thickness. Thus, for the same external dimensions, up to three litres of additional fuel capacity can be gained, while the dry weight of the unit can be reduced by up to 3.5 kg. Carefully balanced material engineering, encompassing alloying composition, rolling and heat treatment, ensures a level of formability that is quite exceptional for the strength of the material. Stainless steel fuel tanks can have shapes, which are just as complex as those of their plastic counterparts, so that even the smallest spaces in the bodywork can be used. Furthermore, stainless steel does not permit permeation of fuel and the re-cycling process adds a positive environmental and economic value.