



TECHNOLOGY DESCRIPTION

SPF technology:

SPF (Super Plastic Forming) is a process for the cost-effective production of thin-walled three-dimensional objects made of aluminium, titanium and steel alloys. The main characteristic of SPF is an extremely high flowability. Titanium reaches this condition in a hot press when heated up to 900 °C. Under comparatively low gas pressure, the material forms over the shape of the forming die. Extremely thin-walled but rigid designs are possible.

SPF/DB technology:

SPF/DB (Super Plastic Forming/Diffusion Bonding) is a process for the cost-effective production of three-dimensional objects and sandwich structures made of titanium. A separating agent is placed on defined areas between titanium sheets. Temperatures of over 900 °C and gas pressure are applied and the unmasked areas are bonded by diffusion bonding. The flat sandwich is then inflated.



INNOVATIVE ASPECTS

The application of these forming technologies allows for completely new innovative solutions and savings by means of higher component integration, reduced material thickness and cost-effective processes.



TECHNOLOGY READINESS (in space application)

TRL 9 (2024)

COUNTRY OF ORIGIN

Germany

LATEST UPDATE

06/2024

TAGS #forming #diffus. bonding #flowability #thin-walled #titanium #cost-effective

APPLICATION AREAS

Aviation Construction & Civil Engineering Energy Maritime & Aquatic Mechanical Engineering Safety & Security Space technologies

SPACE
FOR BUSINESS
BUSINESS
FOR SPACE

TECH CARD

