

FEASIBILITY STUDY OF YOUR WHEEL FROM DRAFT TO HARDWARE BY MEANS OF TURBU PRESSURE CASTING ...

PERFORMANCE AT ENTEC-STRACON GMBH IN AALEN, GERMANY.

Step-by-step study with knowledge transfer of all subareas in the form of a comparison with low-pressure die casting. Disclosure of all individual steps offers unprecedented possibilities already during the draft phase. New opportunities in design or optimum results in lightweight construction open up new potentials including in the field of manufacturing costs. In comparison to low-pressure die casting, the TURBU PRESSURE process requires considerably less sub-processes for future-oriented manufacturing.

OUR FEASIBILITY STUDY OFFERS YOU THE FOLLOWING ADVANTAGES

- / Development of a new technology without capacity commitment
- / Fixed and clear development budget according to schedule
- / All individual steps from a single source
- / No investments in machinery in advance
- / Disclosure of all manufacturing costs/times
- / Staff training and machine consulting by us
- / Knowledge transfer with continuous comparison with low-pressure die casting

Whether electro mobility or increasing requirements regarding CO2 emissions, crash or aerodynamics - TURBU PRESSURE CASTING enables realisation of complex solutions.

WE ARE READY FOR THE FUTURE - ARE YOU AS WELL?



Dipl.-Ing. Ralf Bux
Designing engineer for
wheel development / Project leader



Prof. Dr. Friedrich Klein
Expert for
casting processes



Tel: +49 73 61/880 93-90
Mobil: +49 171/570 31 32
Fax: +49 73 61/880 93-91

ENTECS-STRACON GMBH
Robert-Bosch-Straße 80
73431 Aalen, Germany

www.entec-stracon.com/en/services/example-8

ENTECS-STRACON

ENGINEERING
TECHNOLOGY
STRATEGY
CONSULTING

WORLD INNOVATION

REVOLUTION IN MANUFACTURING OF
CAST ALUMINIUM WHEELS BY MEANS OF

**TURBU
PRESSURE
CASTING**

PRESURE CASTING WITHOUT TURBULENCES

LOW PRESSURE DIE CASTING (ND)

PREVIOUS TECHNOLOGICAL STANDARD

WITH MANUFACTURING LIMITS

ND has REACHED ITS LIMITS:

- / Process with high cast weight
- / Low tool life due to high temperatures
- / Heat treatment (T6) required due to low strength after casting
- / High processing effort with high amounts of waste chipping

PROCESS COMPARISON

TURBU PRESSURE CASTING (TD)

REVOLUTION IN MANUFACTURING

OF CAST ALUMINIUM WHEELS

TD is SUSTAINABLE and SAVES RESSOURCES:

- / Reduced aluminium consumption
- / Reduced energy consumption in production
- / Less recycling thanks to reduced machining
- / Lightweight construction for increased range and environmental protection

DRAFT ANGLE

TURBU PRESSURE CASTING

Stylistic design options down to a draft angle of 1°

LOW PRESSURE DIE CASTING

Minimum demoulding angles of 9° must not be fallen below

STEPS IN DESIGN

TURBU PRESSURE CASTING

Low distortion enables fine graduation also for diamond cut

LOW PRESSURE DIE CASTING

High distortion leads a minimum graduation of 2.5mm for diamond cut

CASTABLE THICKNESS

TURBU PRESSURE CASTING

Large surface at the rims and 3mm and partly 1mm in design

LOW PRESSURE DIE CASTING

Minimum thickness of 6mm to 8mm, thinner only by post-processing

CAST WEIGHT & MACHINING

TURBU PRESSURE CASTING

Casting of finished parts [-40% blank] reduces machining by 80%

LOW PRESSURE DIE CASTING

Minimum cross-sections for casting and processes lead to a considerable machining effort

CAST TIME & BURRS

TURBU PRESSURE CASTING

Tool + process reduce the cast time by two thirds and enable casting without burrs

LOW PRESSURE DIE CASTING

Die temperature + process lead to long cast times and considerable formation of burrs

CONTOURS

TURBU PRESSURE CASTING

Fine surfaces with a possible radius of 1mm or even less

LOW PRESSURE DIE CASTING

Minimum radius of 3mm must not be fallen below

STRENGTH

TURBU PRESSURE CASTING

T6 heat treatment not required thanks to quick casting and solidifying with casting skin

LOW PRESSURE DIE CASTING

Rough structure with cavities + high machining effort require T6 to ensure strength

