www.comtesfht.cz

Who we are and what we do

We are **a private research organization** focusing on metal materials research, the development of technologies, their implementation, materials testing and analyses.

We provide **research and development as a service** - the results of our work are applied in practice.

We provide consultancy in the field of **financial support for research and development projects** from public funds.

We are **partners with technology leaders** in many industries, such as Apple, Škoda, Boeing, Swatch, Doosan, and many others.

COMTES FHT®
Complete Technological Service - Forming, Heat Treatment

Why cooperate with us?

- We handle projects comprehensively - **from the initial idea to a prototype.**
- We are flexible in responding to the demands of the research we do **with and for companies.**
- We have **state-of-the-art laboratories and extraordinary know-how** - more than 100 experienced experts in one facility.
- We have **over 20 years of experience** and hundreds of completed development projects whose results have been put into practice.

... take advantage of our know-how and experience to boost your competitiveness!

References

DOOSAN

SKODA

ASTM INTERNATIONAL

voestalpine

BONATRANS

swatch

Mubea

SIEMENS

Agency for Science, Technology and Research
SINGAPORE

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Our key partners in research

ČVUT
ČESKÉ VYSOKÉ UČENÍ TECHNICKÉ V PRAZE

VSB TECHNICAL UNIVERSITY OF OSTRAVA

TAIPEI TECH

CASE WESTERN RESERVE UNIVERSITY
EST 1826

FAU
FRIEDRICH-ALEXANDER UNIVERSITÄT ERLANGEN-NÜRNBERG

University of Southampton

ITRI
Industrial Technology Research Institute

ZÁPADOČESKÁ UNIVERZITA V PLZNI

TECHNISCHE UNIVERSITÄT CHEMNITZ

Universität München

COMTES FHT
Complete Technological Service - Forming, Heat Treatment

Our services

Materials research

Technology development

Testing & material models

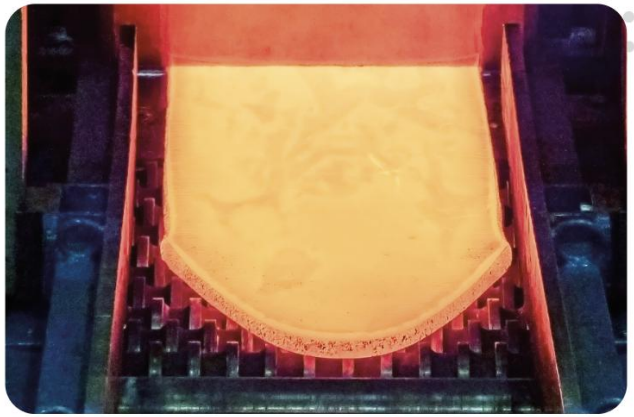
Prototype production

Materials research

Research on metal and non-metal materials - behavior at extreme temperatures, impact and vibration, etc., optimization of properties by targeted processing.

Development of new alloys "tailored" to individual requirements.

Transformation of metal materials into standard semi-finished products in industrial quality (bars, shaped sections, sheets, etc., including heat treatment).



We can advise you regarding materials for

- more energy-efficient products
- longer lifetime of your products and tools
- operation in extreme conditions

Materials research – the ATABOR project

The development of a **comprehensive technological production process** of special austenitic boron-alloyed steel sheets for use in nuclear fuel storage casks.

Developing the necessary **know-how to start production** of these sheets in the Czech Republic.

01 ALLOY DESIGN

02 MELTING AND CASTING TECHNOLOGY

03 SHEET METAL PRODUCTION TECHNOLOGY

Materials research – internal combustion engines

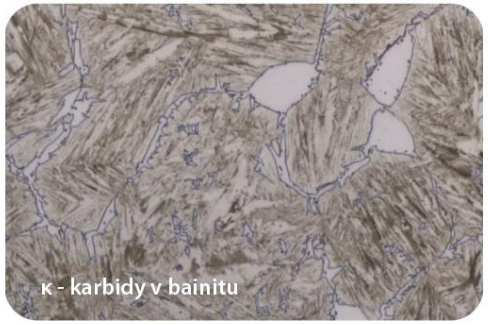
Reducing the weight of moving parts of internal combustion engines (pistons and valves) to achieve higher energy efficiency and reduced vibration.

Solution:

- Developing the optimum alloy chemistry with maximum strength to specific gravity ratio.
- Developing forming and heat treatment technology to eliminate brittleness caused by κ-carbides.

Mechanical values:

KV0.2 = 15 J
Rm = 900 MPa
Rp0.2 = 640 MPa
A5 = 2%



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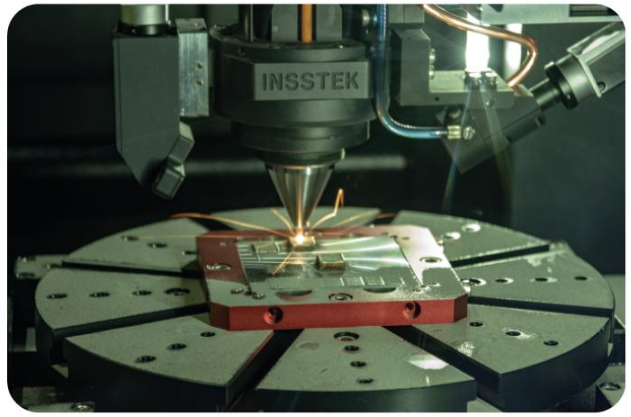
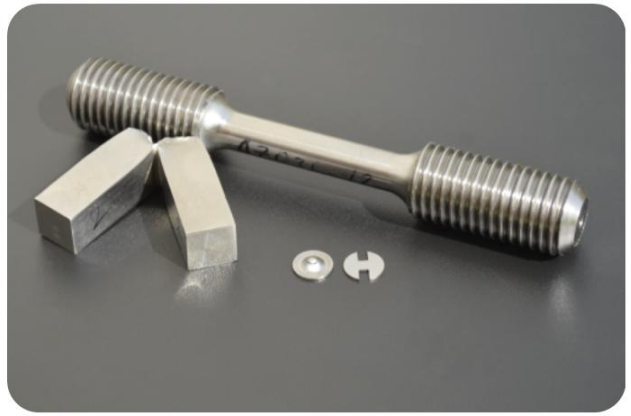
Technology development

Development and optimization of forming and heat treatment technologies, 3D printing and other metal processing techniques.

Use of **computer simulation, sample testing** and final verification **in our prototype laboratory**.

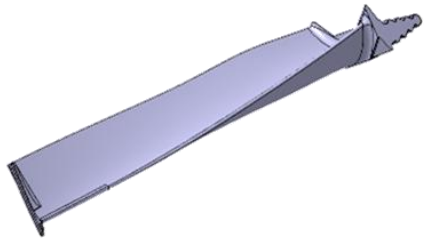




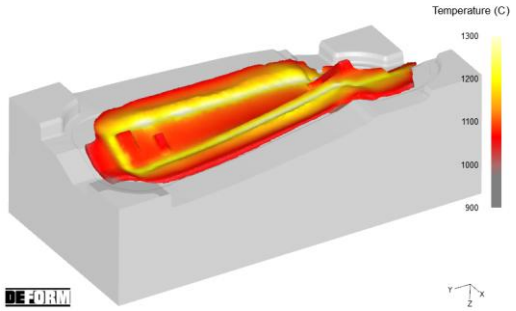
Take advantage of our services for

- accelerating and streamlining the development process
- improving the properties of your products
- cost and energy savings
- achieving higher added value

Technology development – turbine blade production



1. The customer supplies a CAD model
2. We design the forging including the envelope
3. We design and construct the forging die
4. We verify functionality using computer simulation



CZECH PRECISION FORGE

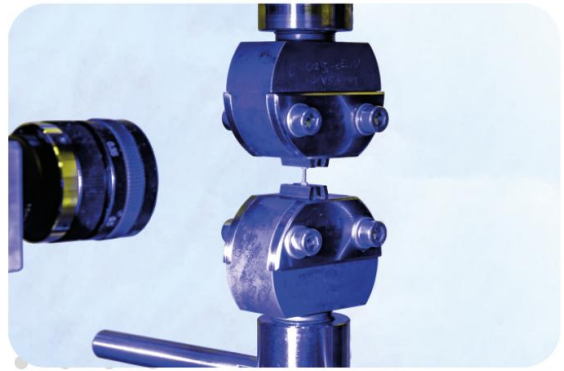
Testing and material models

State-of-the-art **accredited testing laboratory**.

Measuring all common **mechanical values and microstructure parameters** of both metal and non-metal materials.

Development of **non-standard testing methods**.

Creating **material cards** for computational programs used by the customer.



The testing laboratory will provide you with

- the necessary data for your materials
- an accredited protocol and a detailed technical report
- professional consultation in case of disputes about the quality of the material, the cause of an accident, etc.

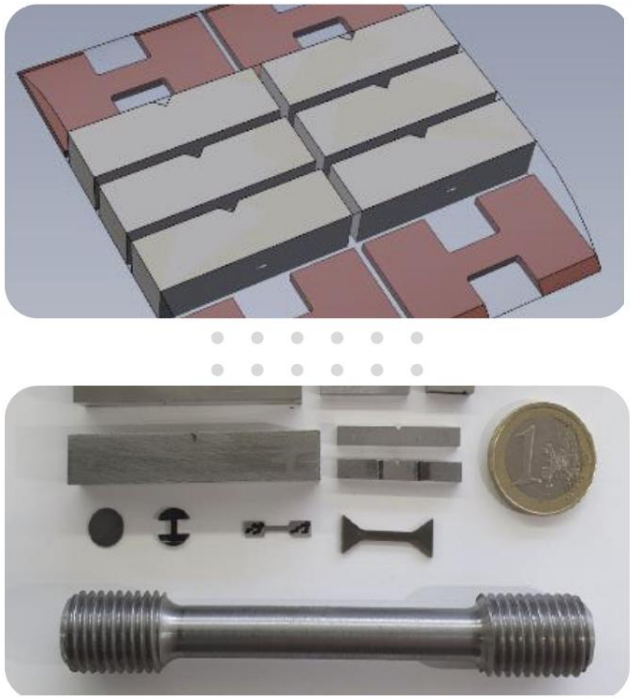
Development and standardization of property measurement methodologies using miniature samples

Determination of **local properties** around welds, after 3D printing, or when there is not enough material available for standard testing.

Applicable to **a wide range of mechanical tests** - tension, compression, notch toughness, fatigue, fracture toughness, etc.

Possibility to **take miniature samples on site** using a portable sampling device.

The methodology has been incorporated into international standards **ISO/ASTM 52909** (testing of 3D printed parts) and **ASTM E8/E8M** (tensile testing).



Development and certification of the methodology of microstructure testing using the replica technique

Non-destructive assessment of microstructure condition – suitable for, e.g., assessing the degree of degradation of materials of power industry equipment.

The technical standard "Microstructure testing using the replica technique" published by the Czech Association of Mechanical Engineers was co-authored by COMTES FHT a.s.

This methodology has been adopted into the policy documents of, for example, **ČEZ a.s.**


OSVĚDČENÍ O KVALIFIKACI

Metalografické repliky – odběr a hodnocení

Evidenční číslo osvědčení: ČEZ/S_1/2019

pro společnost

COMTES FHT a. s.

Průmyslová 995, 334 41 Dobřany

Ing. Jaroslav Koc

(TMID 1061877)

Datum kvalifikace: 20. 11. 2019

Kvalifikace je nepřenosná, viz ČEZ_ME_1119

V Dětmarovicích dne 7. 2. 2020

Ing. Karel Kaleta, Ph.D.
Předseda kvalifikační komise

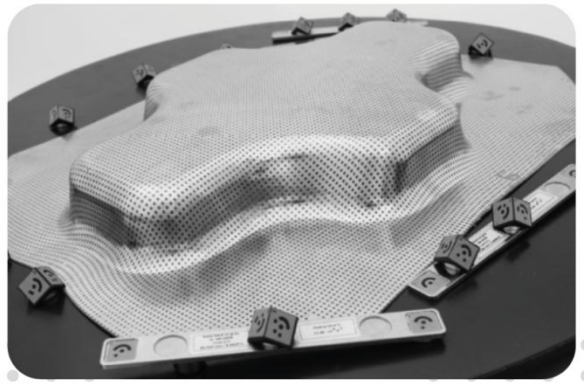
Ing. Radovan Šťastný
VÚ TKaD KE, ČEZ, a. s.

Prototype production

Supply of semi-finished products (ingots, bars, sheets, wires, etc.) from special alloys in standard industrial quality in quantities from approx. 20 kg.

Verification series of castings, forgings, moldings and other types of industrial products.

Utilization of **various production technologies,** including 3D printing and special thermal and surface treatment processes.



The testing laboratory will provide you with

- semi-finished products from special alloys
- prototypes of production tools and finished parts
- components with a high degree of individual customization to specific requirements

Development and production of special wires for repair welding, 3D printing, etc.

Development of **special alloys** and their processing into wire in prototype quantities from approx. 20 kg.

Application in the power industry, tool making, special engineering etc.

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We are located in the heart of Europe

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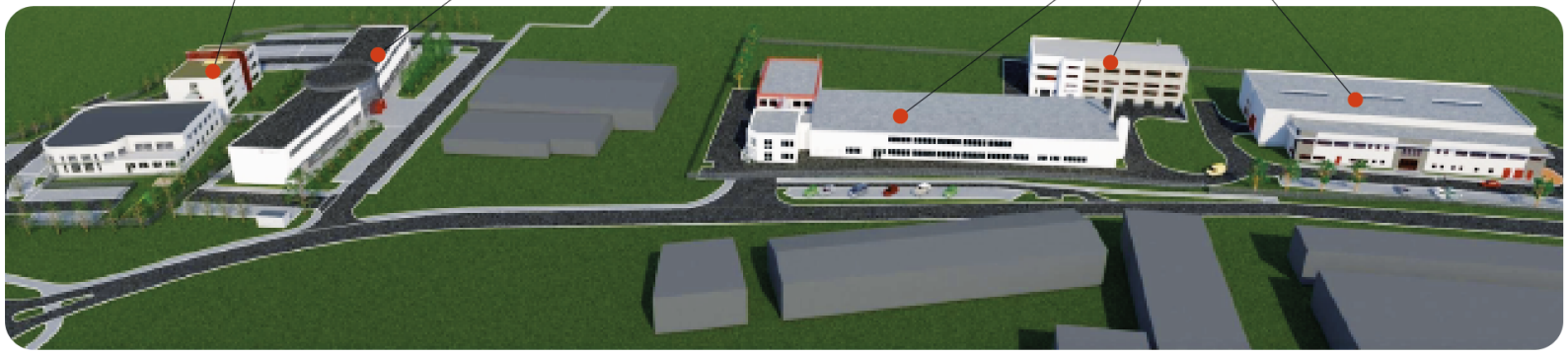
COMTES FHT a.s. facility in Dobřany

Headquarters, meeting rooms, conference hall
2,000 m²

Science and Technology Park
2,000 m²

Laboratories
10,000 m²



Brief history

2000

COMTES FHT was established as an engineering office with 5 employees providing services mainly in **FEM-simulation** and optimization of metal forming processes.

2006

COMTES FHT became the exclusive R&D partner of **Benteler Stahl/Rohr** (leading German producer of steel tubes and profiles for numerous industrial applications). **Metallographic laboratory** has been established.

2007

The company status was transformed into a private non profit research institute according to European legislation **Mechanical testing laboratory** has been established.

2013

Unique **metallurgical laboratory** has been established offering prototyping melts, forging, sheet metal rolling, drawing of wires and profiles etc Parallel, the technical equipment of the mechanical testing and metallography laboratories has been extended significantly.

2018

Workgroup of **additive manufacturing** has been estabilsed as a part of our computer simulation department.

2019

Science and **Technology Park VTP COMTES** has been finished offering approx 4 000 m 2 of production space and offices to startups and innovative companies.

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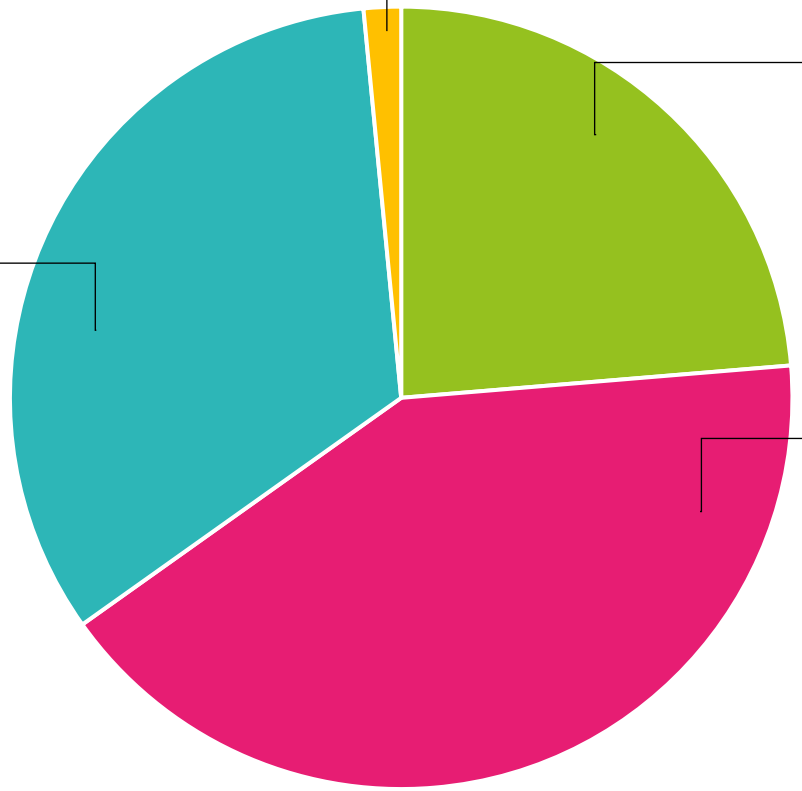
Our budget



Other sources
0,1 mil. EUR

Basic funding
1,8 mil. EUR

Commercial contracts
1,8 mil. EUR

Projects with public funding
2,4 mil. EUR

Total turnover
6,2 mil. EUR (2023)

Projects – industrial segments