



# SCHMELZMETALL

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## HOVADUR®

Copper alloys



High vacuum

[www.schmelzmetall.com](http://www.schmelzmetall.com)

**Die casting moulds**



**Special applications**







# **Schmelzmetall Products and Solutions for gravity casting and low pressure die casting**

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## **Hovadur® application areas**

Gunmetal casting: bronze, brass

Kitchen armatures

Bath armatures

Water meters

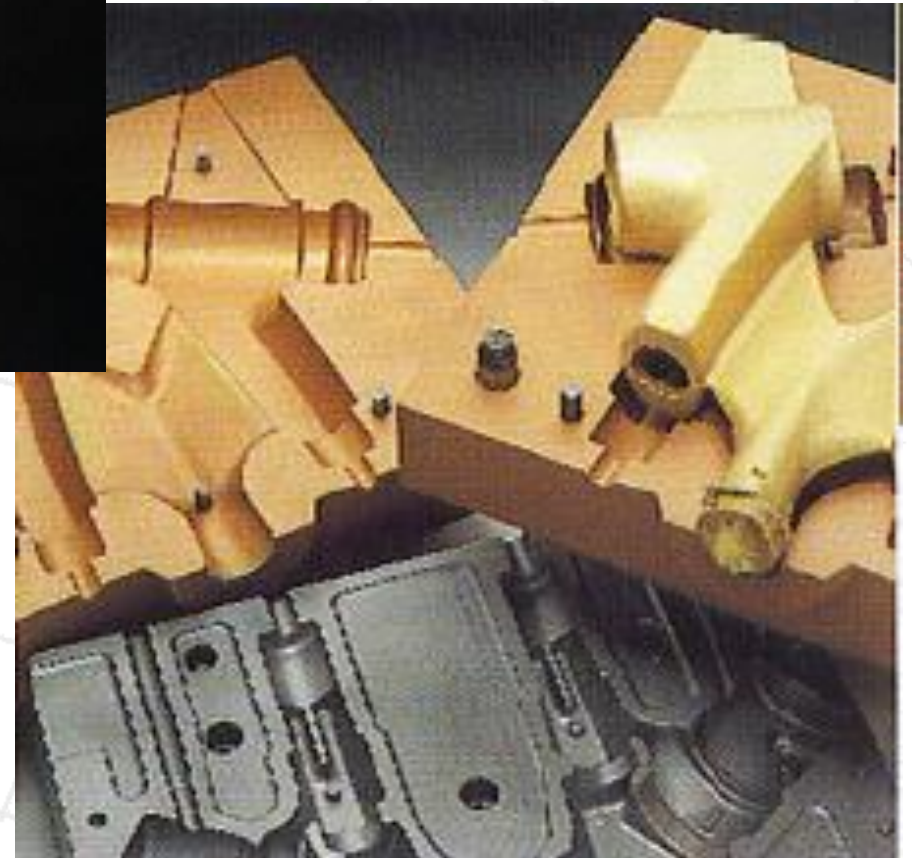
Valves

(first step into aluminum - gravity casting)

# Die casting



**Mould**



## Main requirements for mould materials:

- long life span
- high quality castings
- short hardening times
- best cost/benefit ratio



The life span of a mould depends on the thermal shock behaviour and the ability to resist heat cracking of the mould material

Evaluation of suitable materials

$$W_s = \Delta T * TEC * E$$

$$TSR = TC * SS / TEC * E$$

TC = thermal conductivity (W/mK)

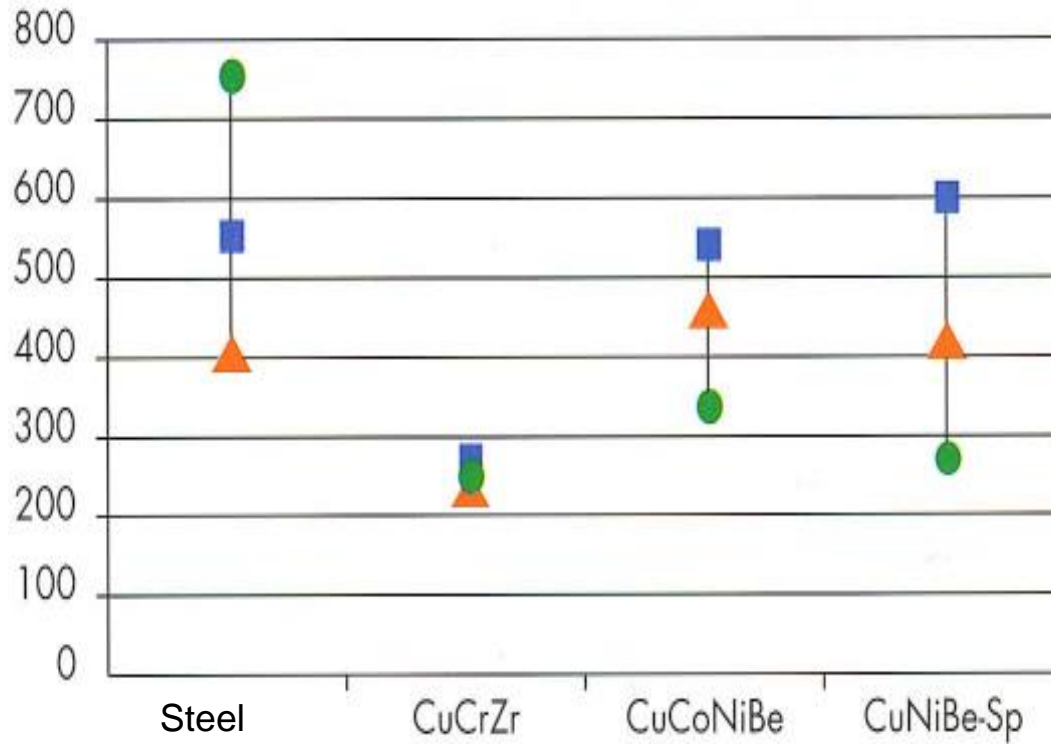
SS = 0.2 % yield strength (N/mm<sup>2</sup>)

TEC = coefficient of thermal expansion (10<sup>-6</sup>/K)

E = E-modulus of elasticity

## Spannungsvergleich der verschiedenen Materialien Stress comparison of the different materials

Stress in  
 $\text{N/mm}^2$



Yield point



Tensile  
strength

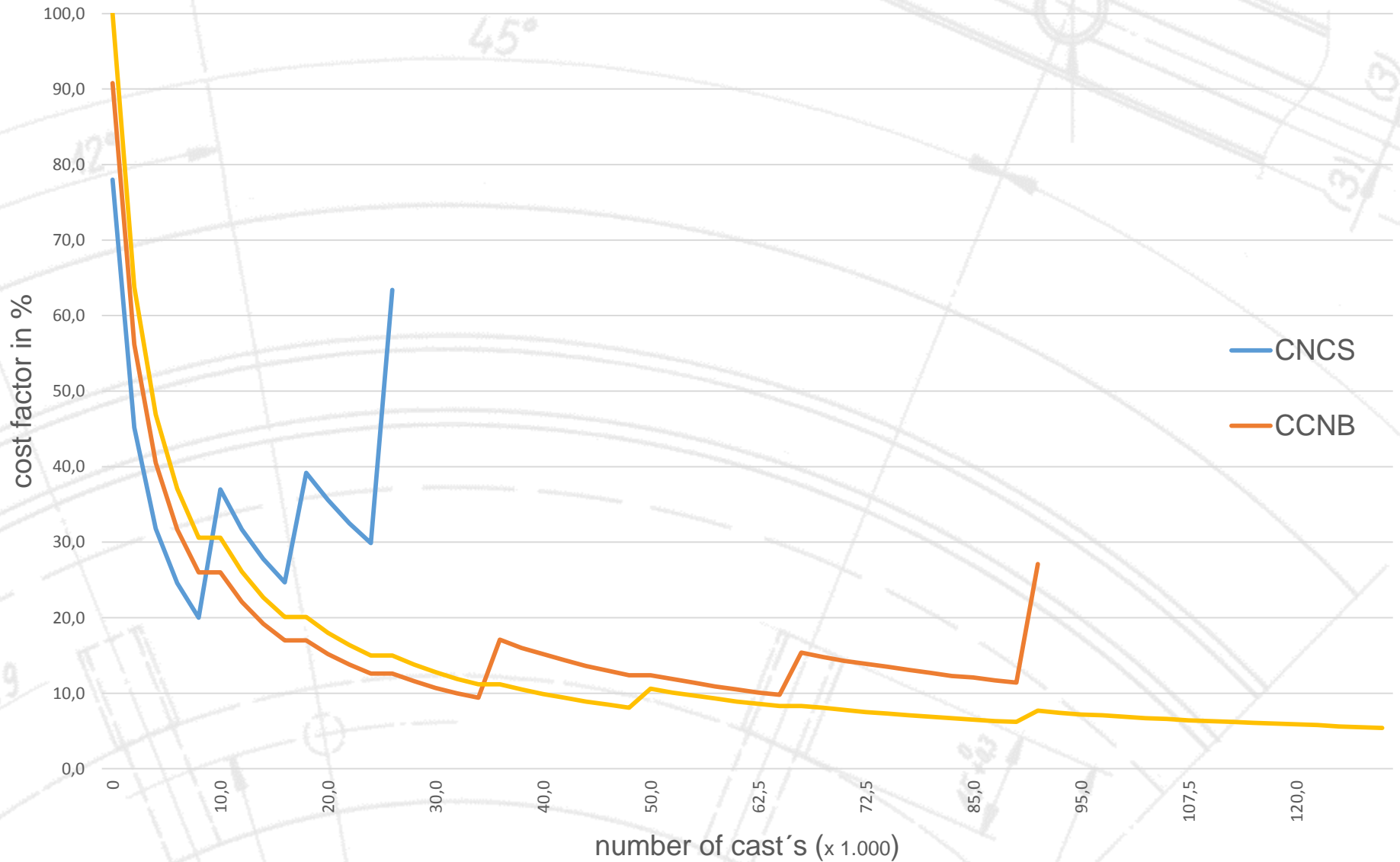


Thermal stress



# LP - DC

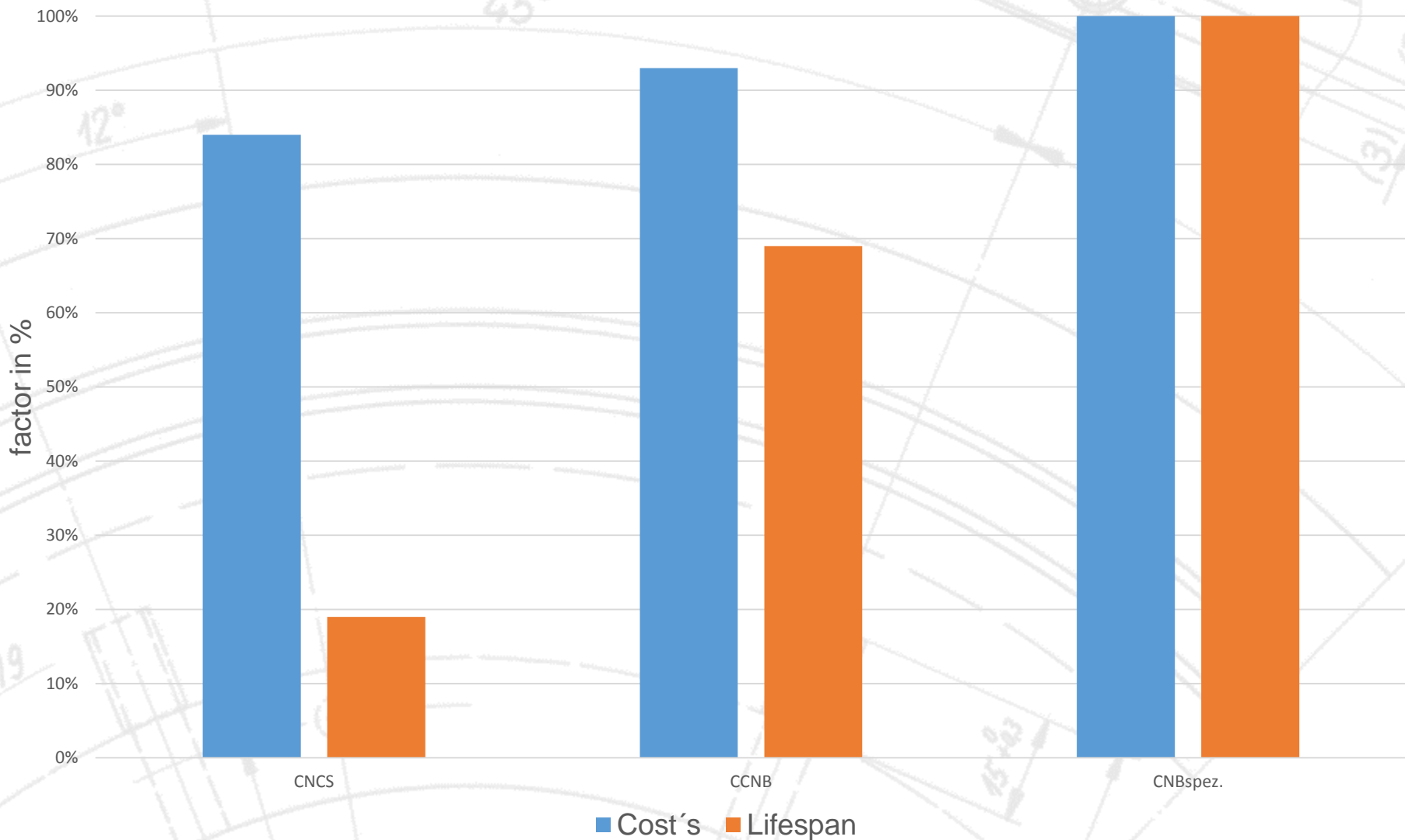
relative cost factor of the die per cast





# LP - DC

### Cost / Lifespan

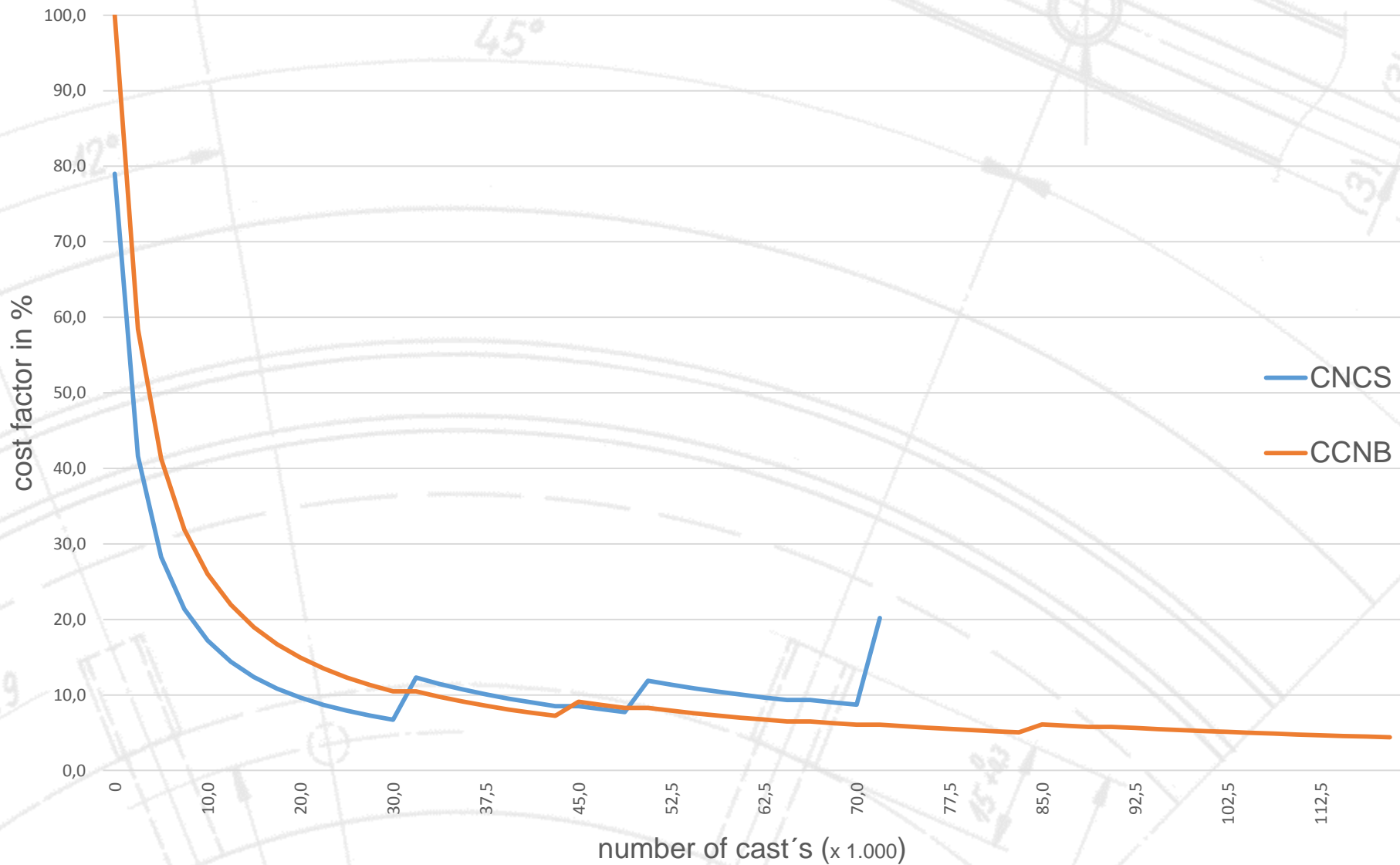






# Gravity casting

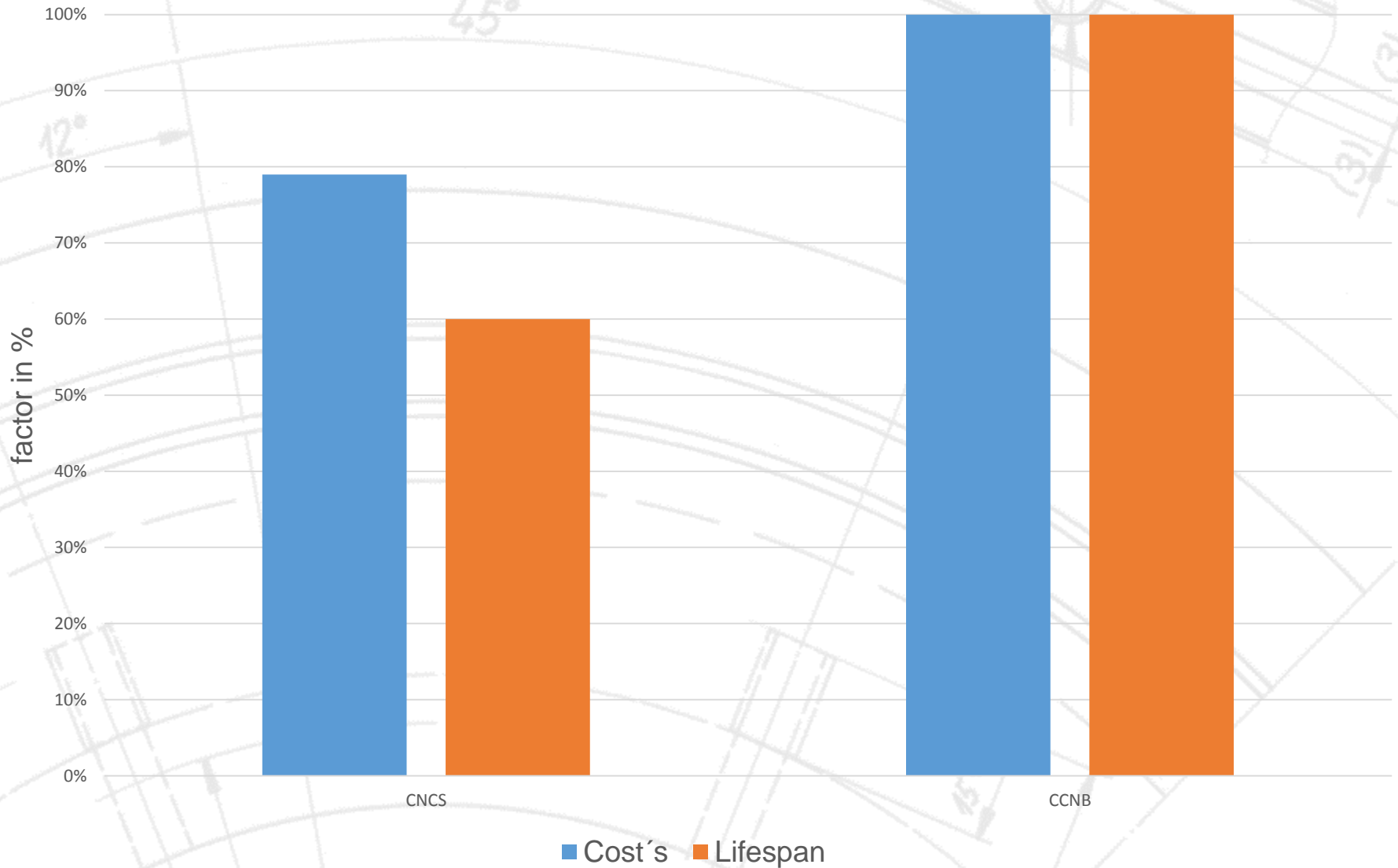
relative cost factor of the die per cast





# Gravity casting

Cost / Lifespan



## Our recommendations regarding the use of Hovadur® as mould material

Hovadur ®	Gravity	Low pressure
CNCS	X	
CCNB	X	X
CNBspez		X

# Aluminium - gravity casting

**Proof of eligibility of Hovadur® CCNBeh and CNBspez. for the use in aluminium – gravity casting**

**Sample: gear box, stair lift**





**Aluminium - gravity casting**

