

The Heraeus quartz bar procedure

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Polished, extruded, and baked bars

- Polished

- Costs: 30% bulk
70% polish
- Procedure well under control
- Bar length limited by polishing machines

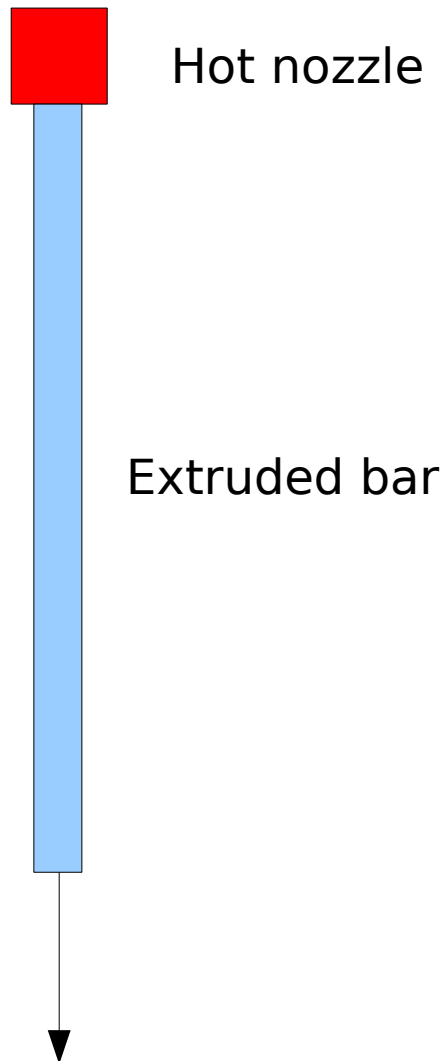
- Extruded

- Costs: mainly bulk
- Procedure is new...
- Bar length of 2.30m possible

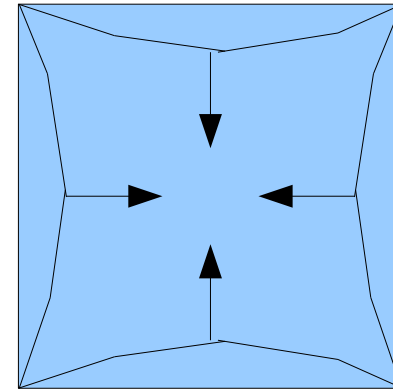
- Baking

- Same as extrusion

Extruded bars

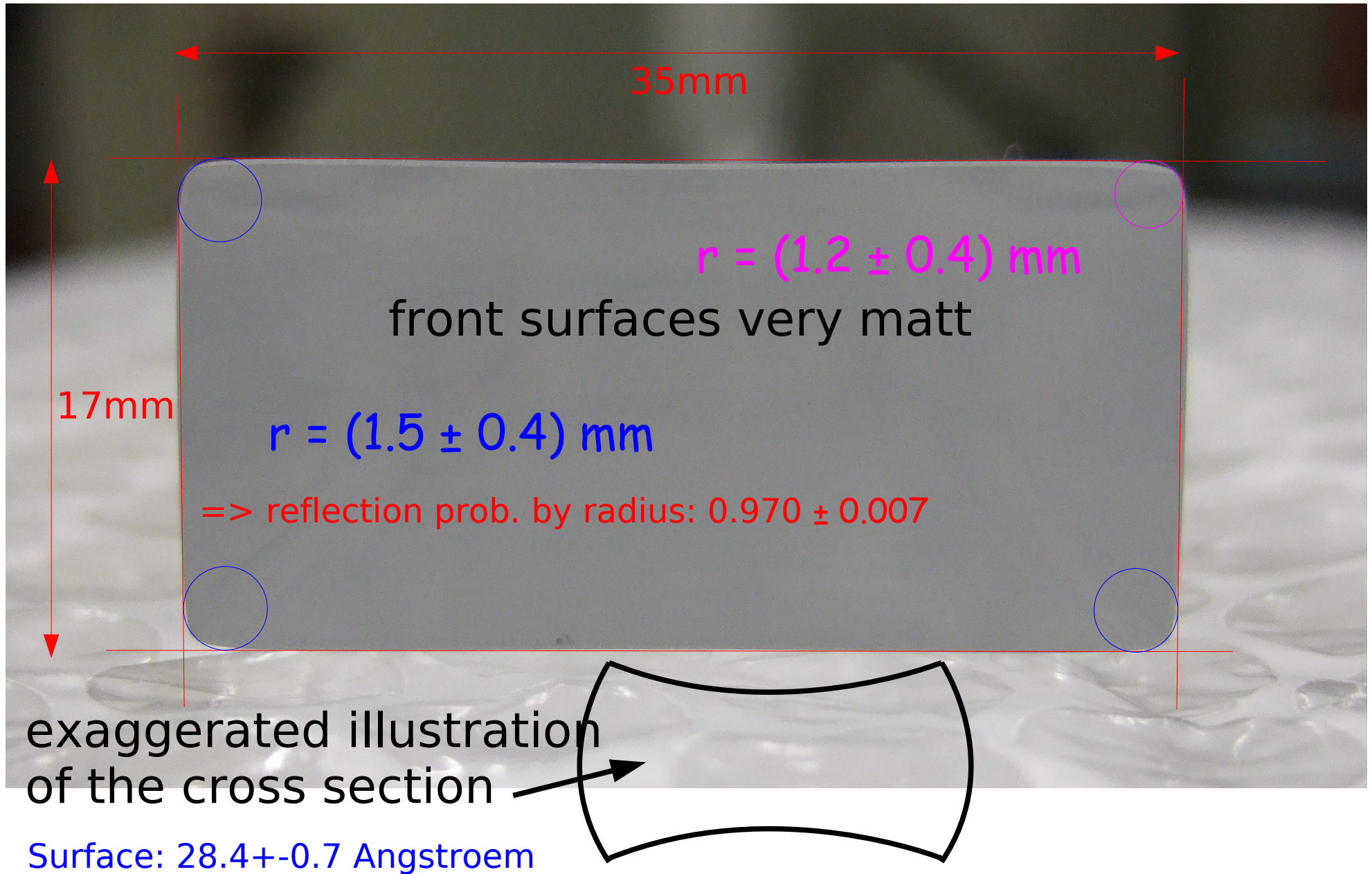


There are forces inside the bar due to negative pressure!



Heraeus bar (H3)

Delivered bars are rejections !



Baking

Take extruded bar and grind it flat, then bake it

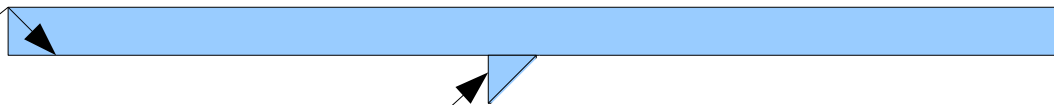
oven



Parameters: feed rate, temperature



In the middle, they changed parameters



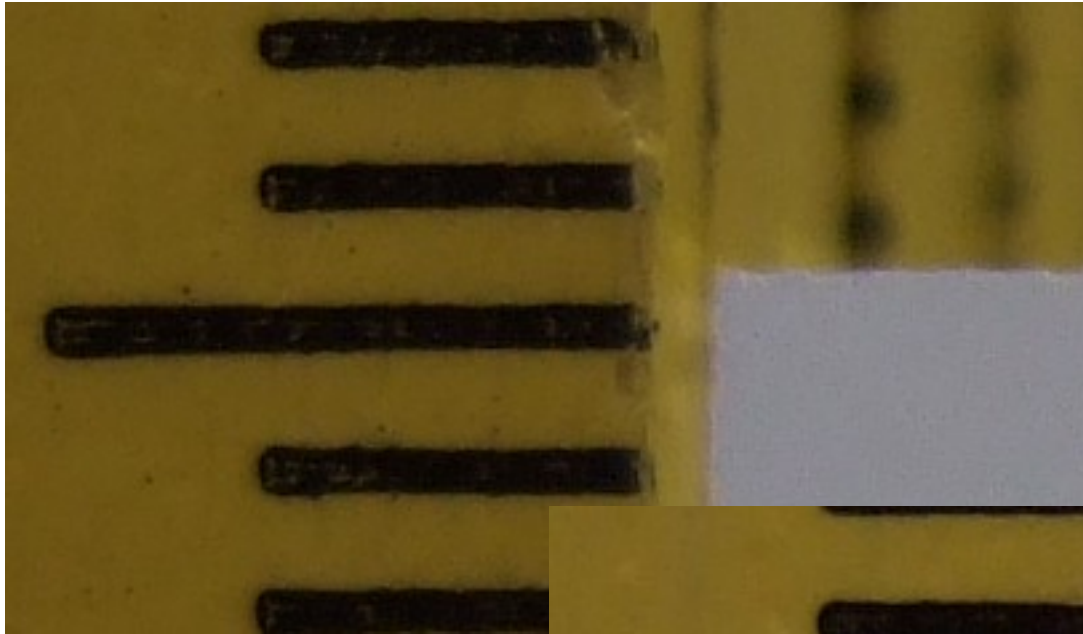
Little bit complicated for measurement of surface reflections

The bars

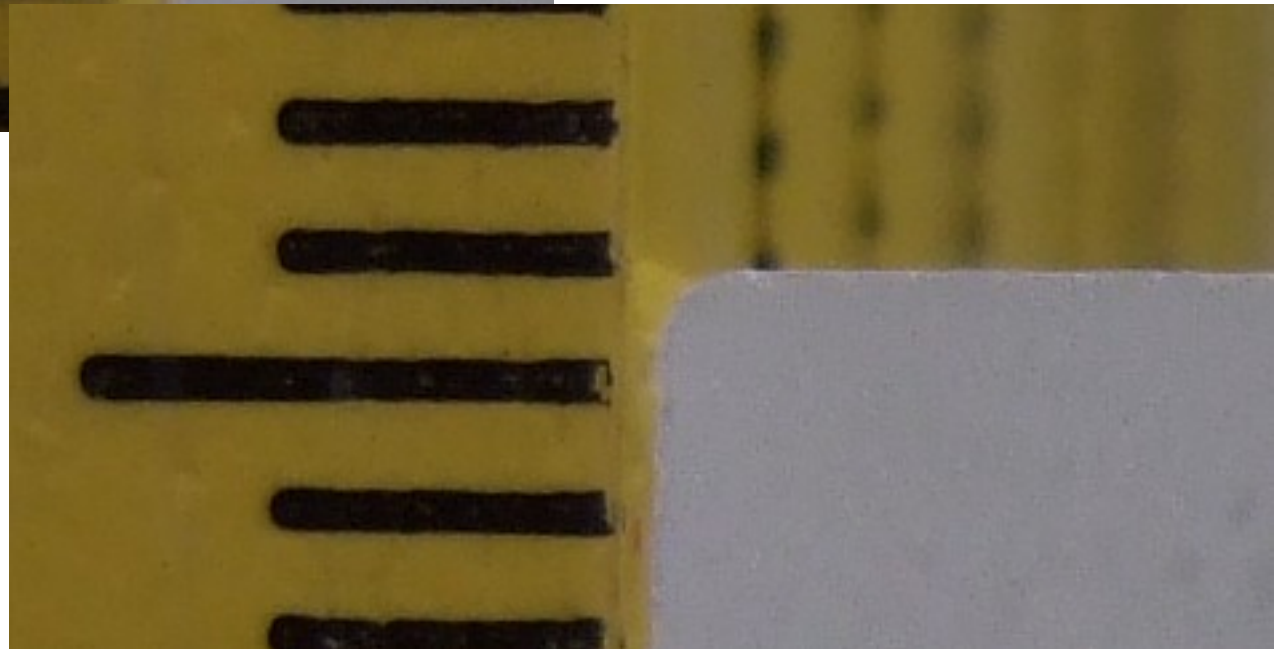
- Bar 1: two low T_1, T_2 and fastest v_1, v_2
 - Sharp edges, surface grinding traces visible
- Bar 2: two high T_1, T_2 and slower v_1, v_2
 - Sharp edges, surface structures barely visible
- Bar 3: very high T_1, T_2 and slowest v_1, v_2
 - Round edges, no surface structure visible

There will be a compromise between
edge sharpness and surface smoothness

Edges



Low T

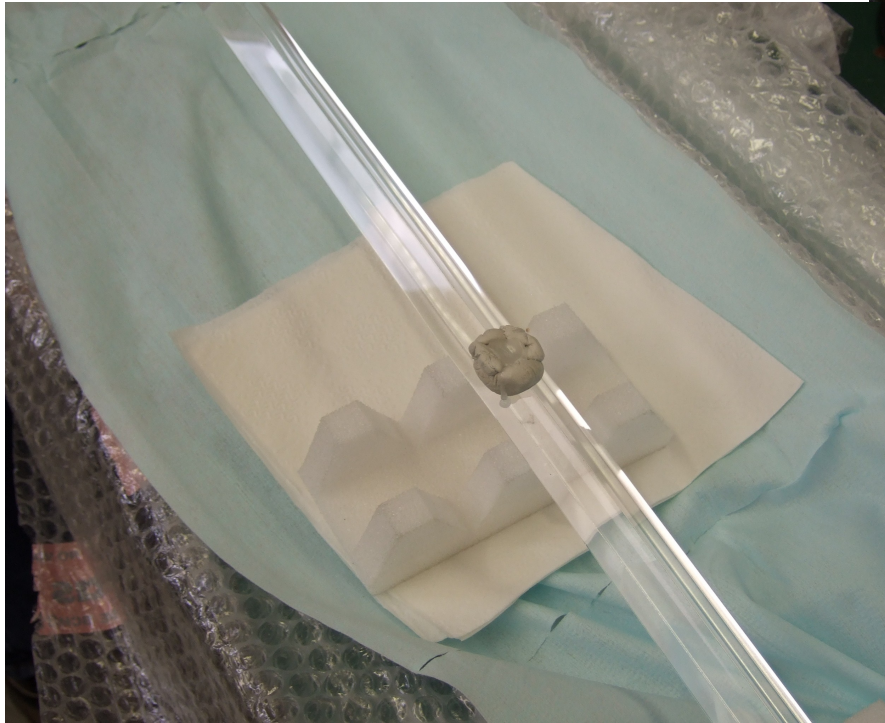


Hi T

These are pictures
from the front
surface

realistic?

Edges



Was just an idea...
Industry uses interferometric
measurements

Summary

- Extruded bars are ruled out
 - Deformations
- Baked bars
 - Need still quantitative determination of
 - Surface smoothness
 - Edge sharpness
 - First visual inspection looks not bad.