

## "European CNC-Network – Moulding for Europe"

### 4<sup>th</sup> Meeting in Germany

**Friday 6<sup>th</sup> of November 2009**

- Arrival day

**Saturday 6<sup>th</sup> of November 2009**

#### Official opening and activities presentation

Due to the Portuguese team travel problems, the official opening was done Saturday instead of Friday, as it had been planned previously.

Heinz encouraged everybody to register and participate in the forum (<http://mould.cnc-network.eu>). To prevent spam, the user name must be in the following way: [Country] 1<sup>st</sup> Name 2<sup>nd</sup> name.

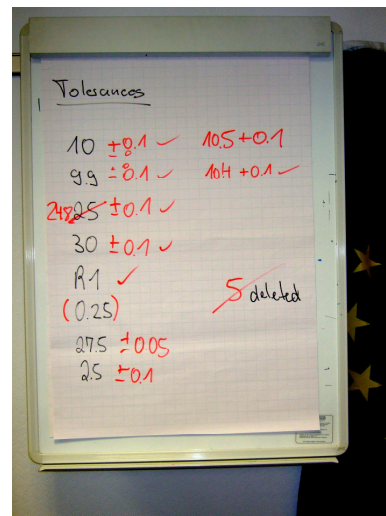
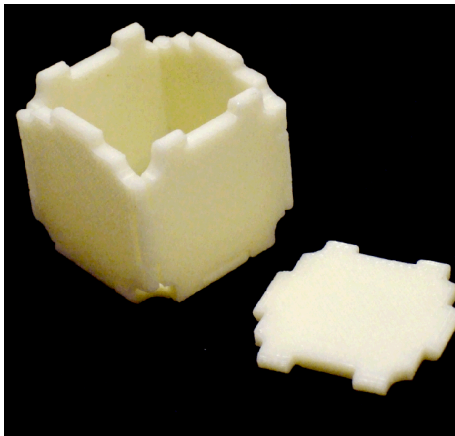
#### Workshop I & II: Checking the cube and planning the mould

##### The board plot

The original draw can be found at the forum.

[Aut- FU] showed a click-cube prototype made with a rapid prototyping machine.

Some minor dimensional changes were made on the tolerances proposed by [Aut-FU]. The final draw with the correct dimensions and tolerances will be done by [Aut- FU] and posted at the forum as soon as it will be possible.



##### The core and cavity insert

[Aut- FU] obtained a 50% discount in the price of Hasco components, while the other partners got between 25 and 30%, so it was agreed that [Aut- FU] will buy the components and then the rest of partners will pay their part by bank transfer (or other means).

It was agreed that every school will produce its own inserts. If one school has any problem with any specific job, they will look for help on other schools, using the forum as a communication tool. The position of the injection channels was defined and they will be done by [Aut- FU] when all the partners provide their complete inserts.

Things to discuss in a further session:

- Logo: size, depth
- Ejectors: dimension, position
- Gates
- Materials: inserts, polymer to inject
- Dates: dead line, schedule

Workshop III was put off to Monday morning, due to the lack of time.

### Sunday 8<sup>th</sup> November 2009

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- Cultural day

### Monday 9<sup>th</sup> November 2009

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#### Workshop III: Discussing further activities

- About the materials

Polymer: POM (shrinkage: about 2%)

Steel: 1.2343, 1.2767 (to be hardened). See the Hasco table attached.

- About the insert roughness: VDI 20 (see the Charmilles VDI 3400 table attached)

It was agreed that [Aut-STP] will provide a draw with dimensions in the middle of the tolerances.

In order to check the fitting of the insert, every partner will bring it to Portugal (without cavity) where the channel and gates design will be discussed.

- About the Logo:

The school logo must be on the ejection side with a depth between 0.3 and 0.5 mm.

The country logo and name will be done on the injection side. The total depth of the country shortcut and the silhouette goes from 0.3 to 0.5 mm.

Since there are two Austria schools, one of them will make an European logo instead of the country logo.

- Ejectors

4xØ4 next to the click points. (See the draw)

#### Workshop IV: Review & conclusions

Homework:

1. Every school has to bring to Portugal the pictures they took in Germany.
2. Dictionary: every school should post themselves the terms on the moodle platform using the username and password that Jaume [ESP] has provided to them. Deadline: Christmas 2009. **Be careful with the pictures copyrights!**
3. Each school has to draw the electrodes, being aware of the shrinkage
4. Each school has to send to the Portuguese team one complete final exam concerning moulding (10 questions, multiple choices). Deadline: Christmas 2009.
5. Each school should check a budget for the chain and the key ring (1000 units)
6. The inserts (without cavity) must be produced and hardened (HRC 54-56) and bring them to Portugal. The complete inserts, with cavities but no gates, should be done and sent to [Aut-FU] before the end of April 2010.

