CDA Sponsors Mold Design Guidelines in MM&T

Look for ideas that will allow faster processing of plastic and production of higher-quality parts

Keep an eye out for coming issues of Modern Mold and Tooling, which will contain injection mold design guidelines developed to make you more productive. These informative and collectable fact-filled design guidelines are being developed for the injection molder, mold designer and mold builder. The information contained in the guidelines will maximize the mold's cycle time and improve part quality with the use of copper alloys in the mold.

The articles will begin in the May issue.

These information packed Injection Mold Design Guidelines are being developed and generated by The Copper-Alloy Molds Marketing Task Group. The group is a network of copper-alloy suppliers, distributors, and fabricators who have joined together to assist the moldmakers, molders and manufacturers to improve the processing of plastic materials.

The task group, supported by the trade associations of the copper industry, is dedicated to research and disseminating the information you need to take advantage of the superior performance of molds containing copper-alloys. Also, the association is dedicated to developing an infrastructure of copper producers, fabricators, suppliers and mold makers who are in the plastics chain.

Research work, performed at Western Michigan University, is conducted to address technical issues and remove barriers to the use of copper alloys for plastic processing. The development of these Injection Mold Design Guidelines is a result of this research and in addition to empirical data derived from

Companies and representatives, with contact information, serving on the Task Group include:

(For more informataion from these companies, write in the reader service number on the reader service card or fax-back page)

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industry applications.
Several molds, funded by the task group, were built and tested to conduct research under actual production conditions. One studied the cycle time advantage the copper alloys offered over traditional mold steels. Additionally, due to the superior thermal conductivity of the copper alloys, part quality improvements including less warpage, better dimensional stability and more uniform mold temperatures resulted. Other research and testing concentrated on eliminating mold sweating under humid operating conditions. This is accomplished by running higher mold operating temperatures with copper alloy mold cores. The test results prove that better part dimensional stability can be obtained at shorter mold cooling times without mold sweating when compared with mold steels.

Exhaustive wear study is under way

An exhaustive wear study is under way testing the effects of electroless nickel, hard chrome, titanium nitriting, thin dense chrome and thin dense chrome with diamond particulate in extending the mold life of the copper alloys.
As a service to the plastics industry, the Task Group is funding the publication of these guidelines in Modern Mold and Tooling. The greatest benefit to the people who deal with molds and molding will be to collect each issue to use as a reference in both the applications of the copper alloys and the mold design principles.

Subjects for the Injection Mold Design Guidelines will include:

1. Sprue Bushings and Runner Bars
2. Mold Cores, Core Pins and Chill Plates
3. Mold Cavities and "A" Side Inserts
4. Slides, Lifters and Raising Mold Members
5. Ejector Pins, Ejector Sleeves and Ejection
6. Mold Temperature Control Systems, Bubblers, Baffles, Diverters and Plugs
7. Wear plates, Slide Gibs, Interlock Plates, Leader pins and Guided Ejector Bushings
8. Plating and Coating of Copper Alloys
9. Application of Copper Alloys in Injection and Blow Molds

These guidelines will include properties of the various copper alloys most commonly utilized for their thermal and bearing properties, compared with traditional mold steels. Charts, graphs, formulas and descriptions will provide the user with pertinent data not available from other sources. ■