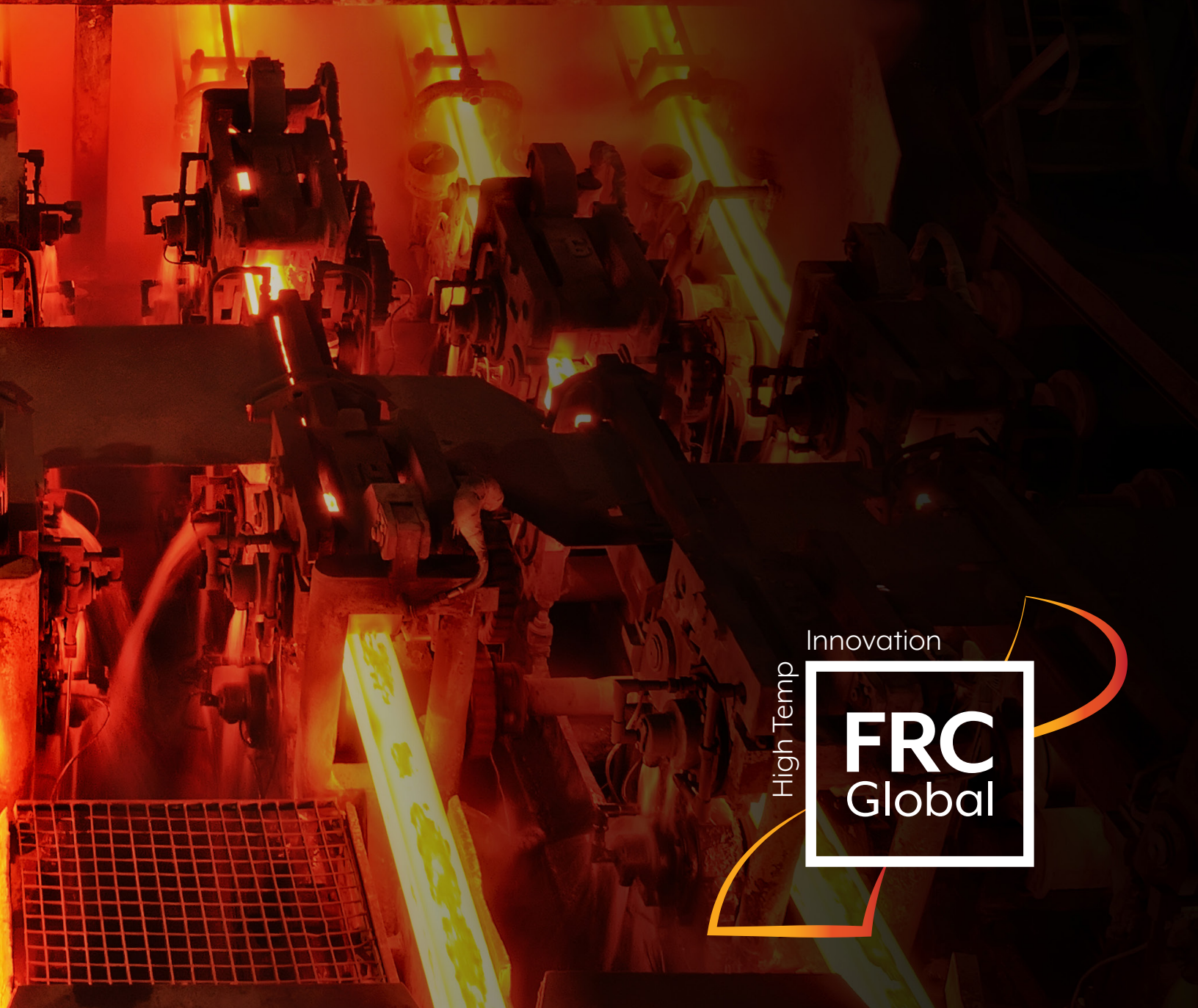


# FRC Global Copper Mold Tubes



Innovation

High Temp

**FRC**  
Global

# Expert Teams.

# Global Networks.

# Quality Products.

## Who We Are

**FRC Global is a leading supplier of refractories, electrodes, and high temperature combustion systems.**

FRC Global provides outstanding results for our clients within the iron, steel, and non-ferrous industries. Our company's reputation is built by delivering high quality products made with premium raw materials. We are more global now than ever before.

We give you a competitive advantage by offering you superior proven products that positively impact your bottom line and perform better. Our knowledgeable engineers ensure the proper application of our products to give you the maximum level of output and safety.

With over 25 warehouse facilities in the United States, Canada, Mexico, and South America we assure your products are readily available when you need them in these regions.

**Through the use of vast global resources, all of us at FRC Global are committed to being the value creators and problem solvers for our industry.**

# Mission Statement

Embrace modern technology to increase innovation, efficiency, and transparency. Inspire the next generation by driving change, promoting curiosity, and shaping sustainable solutions in the high temp world.



# About Us



## Background information

FRC Global is a second generation family owned company with a 30-year history.

FRC Global has offices, agents, or partners in 20 countries around the world.

Global Offices:

- ◆ North America: United States and Canada
- ◆ South America: Colombia
- ◆ Asia: China

We provide quality engineered products and services for all your high temperature applications.

## FRC Global facts

Our quality control employees thoroughly inspect shipments to ensure products are within specification and are properly packaged.

Sales force and service needs are available in the following:

- ◆ North America
- ◆ Central America
- ◆ South America
- ◆ Europe
- ◆ Middle East

# Why FRC Global?

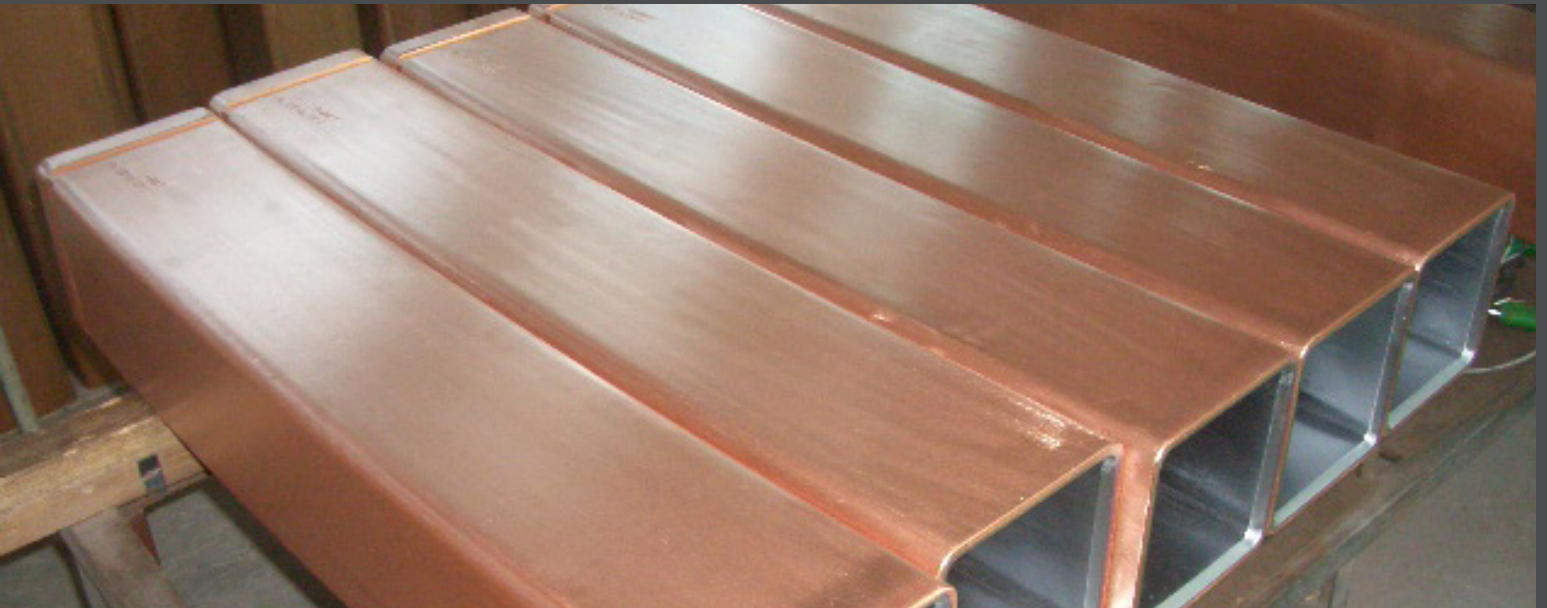
## Why Us

Copper mold tubes are the heart of the caster and they are the last material which is in contact with the molten steel. The correct copper mold tube design for your application has a positive impact on your productivity and quality. At FRC Global, our engineers understand how critical the copper mold tube is to your final product. Our molds are manufactured in an ISO9000 certified plant and go through an extensive quality control testing program. All mold tubes are individually tracked with their own lot number for quality assurance.

Through the use of our vast global resources, FRC Global is committed to delivering an exceptional customer experience and innovative solutions to all of our clients in the high temp world.



# Copper Mold Tube Qualities



## Copper Qualities

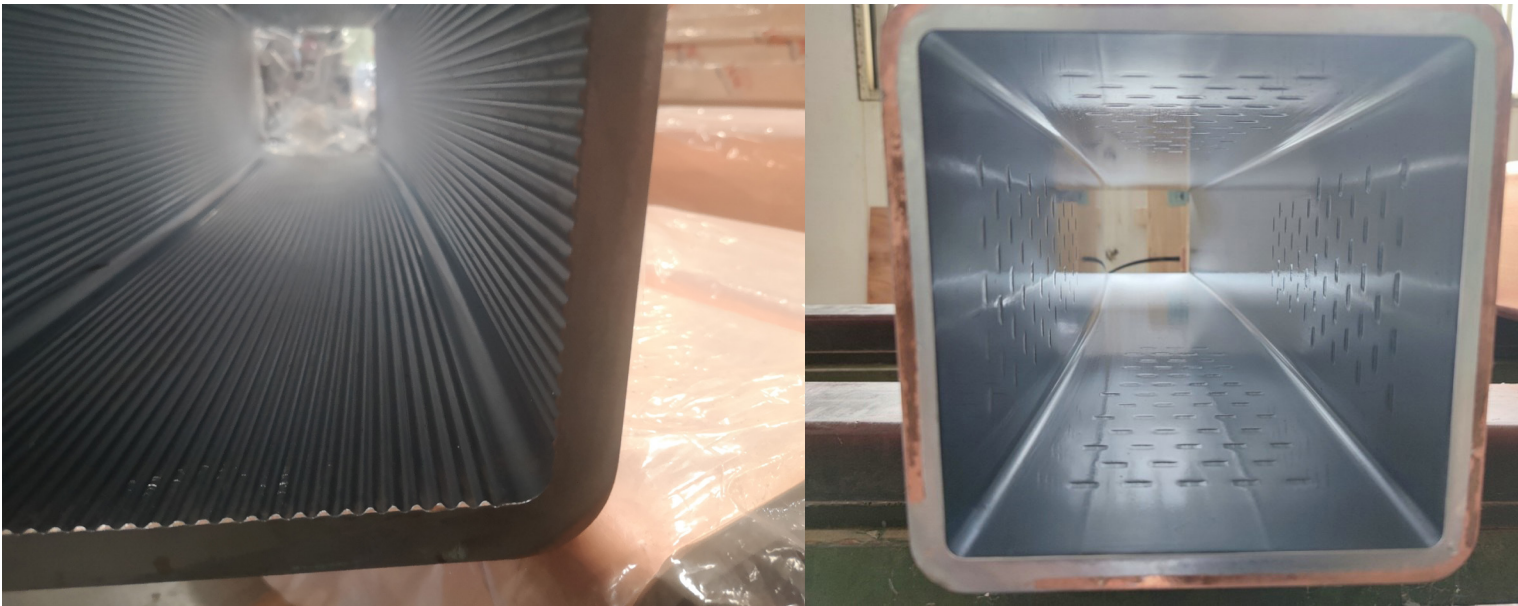
- ◆ **Phosphorous Deoxidized Copper (Cu DHP):** The basic material for many applications. Used when the thermal flow is moderate and the thickness of the mold is not excessive. DHP quality is commonly used for billet casting applications.
- ◆ **Copper Silver (Cu Ag):** Higher softening temperature. When there are considerations for higher temperatures in the mold, a high thermal flow, and a thicker mold wall, this quality is an alternative. Cu Ag is used in billet casting applications when there are special operating conditions such as high casting speeds, poor cooling considerations, and sequential castings. Cu Ag is also commonly used for casting blooms and slabs.
- ◆ **Copper-Chromium-Zirconium (Cu-Cr-Zr):** Almost double the softening temperature of DHP. Molds of this quality are able to hold their hardness at much higher temperature ranges and also maintain the thermal conductivity essential to the performance of this product. Cu-Cr-Zr molds are the premium choice.

## Coating Qualities

- ◆ Mold coatings are critical to increase wear resistance for longer mold life and less maintenance. They also prevent copper pickup from the mold into the steel.
- ◆ **Chrome (Cr) Coating:** High initial hardness and good lubrication (low friction). Cr coating is standard for the majority of billet casting applications
- ◆ **Chrome-Nickel (Cr-Ni) Coating:** Offers higher hardness than standard Cr coating with high wear resistance.

Other qualities and coatings available at special request. Contact us today with your special requirements.

# Copper Mold Tube Designs



## Description

At high caster speeds, increased heat transfer is required within the copper mold tube. You can achieve this with FRC Global Corrugated Molds and Textured Molds.

Corrugated Molds create more surface area throughout the entire length of the copper mold tube. Increased surface area increases conductivity, allowing the copper mold tube to extract heat from the molten steel at a faster rate, improving steel shell formation.

Textured Molds have less copper thickness in alternating convex places in the meniscus area. This increases conductivity in the meniscus, which results in faster steel shell formation.

Innovation

High Temp

**FRC**  
Global

# FRC Global

## **United States**

1000 N. West Street, Suite 1200 #3008  
Wilmington, DE 19801

## **Canada**

Montreal, Quebec

## **South America**

Cali, Colombia  
Phone: 011-57-310-826-2701

## **Asia**

Dalian, China

1-800-609-5711

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