



## WHITEPAPER

### **WHITEPAPER: Tubular Goods - Hot Finished vs. Cold Drawn**

The terms hot finished and cold finished are used often in our industry, but not everyone is knowledgeable regarding what they mean and their impact on seamless pipe and tube. Below is a helpful discussion of this topic so that you can have a better understanding of these processes.

Tubular Goods (as used here for both Pipe and Seamless Tubing) is generally produced as either hot or cold finished. When it is cold finished, it will most likely have been produced by either the pilger or cold drawn process. Pilgering is more common in the stainless and nickel alloy worlds while cold drawn is more common in the carbon steel world. The pilgering or cold drawn processes are often ASTM specification specific.

Let's start with two working definitions: Hot Finished Seamless Pipe- (abbreviation: HF) Pipe produced by rotary piercing, extrusion, and other hot working processes without subsequent cold finishing operations.

Cold Drawn Pipe or Cold Finished Pipe- (abbreviation CD) Refers to pipe drawn in the cold state through a hardened steel or carbide die, either with or without a mandrel on the inside.

Generally Cold Drawn Pipe is more expensive than Hot Finished as the Cold Drawn manufacturing processes generally produce finished products with better surface condition and concentricity. A few concepts described may help.

Cold Drawn Pipe:

- a. is manufactured in diameter sizes only,
- b. is often requested when tighter than specification sizes are required,
- c. tends to be produced in small diameter sizes,
- d. is often selected when dim tolerances are tighter than the specification,
- e. is often subject to minimum mill quantities, and
- f. generally pipe made by Hot Finished methodology can be made in a Cold Drawn process.

While mentioned above that Cold Drawn Pipe tends to be made in smaller diameter sizes, Tioga does, however, provide Cold Drawn Pipe up thru 10-3/4" OD. In fact, since the end of the last century, carbon steel domestic US mill capacity for Cold Drawn Pipe has diminished significantly, but Tioga's global sourcing capabilities coupled with its deep understanding of manufacturing processes and quality requirements makes it the go to company for Cold Drawn & Hot Finished Pipe.

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