



# Tool Steel Rolls



**Leadar Roll** manufactures high wear resistant rolls in a variety of high-performance steels. We use our experience, knowledge, and our ability to partner with our customers to determine the best grade for each unique need. With an average increase in life of three (3) to six (6) times the life of a conventional iron roll, it is easy to see why these rolls have gained such increased popularity over the last twenty years. Leadar's Composite Bonded Roll (CBR) is a single roll with a high-performance working surface and a high strength roll neck. This design uses a process of hot isostatic pressing of powder material onto a steel shaft to alleviate the need for a mechanical locking mechanism. This also allows for the roll to contain the same number of passes as a conventional iron roll (i.e. no space is used for a locking mechanism). With our powder metal technologies we can offer high hardness materials up to 70 HRC.

## ***The advantages of this type of roll are:***

- 100% Density
- Fine Grain Structure (uniform carbide distribution)
- Equalized microstructure
- Unified hardness from new to scrap diameter
- Improved surface finish
- High attainable hardness matched to each customers' need
- Greater resistance to fatigue and mechanical damage
- Available in a wide range of tool steels & high speed steels

These rolls use a balance of homogeneously combined fine-grained carbon and vanadium, which enhances the toughness and provides a heat check resistance that results from normal rolling in a mill. This allows for superior dimensional stability, easy machinability, and toughness over that of a conventional or other tool steel roll.

The powdered metallurgy tool steel roll is able to be utilized in most applications that are running over 2.5 meters per second.

## IRON & CAST STEEL ROLLS

Leadar Roll provides economical, high quality, cast nodular iron rolls. Nodular iron rolls are cast ductile iron or spheroidal graphite cast iron. Rolls are cast as single pour or centrifugal cast bi-metal.

Nodular iron materials have a toughness advantage over grain or chill iron grades. The spheroidal shape of the graphite phase makes these rolls less sensitive to impact. Softer nodular iron is applied in heavy breakdown stands, while the harder grades are used for intermediate and finishing stands.



## FORGED STEEL ROLLS

Leadar Roll provides rolls, shafts and arbors made from steel for a variety of customers. These customers include hot rolling and cold rolling of steel and nonferrous, higher carbon steel.

Leadar Roll adds different elements to our tool steel chemistry to match a roll's performance with our customers' needs. This type of selection of a roll material depends on the rolling process requirements, hardness, structure, crack-resistance, toughness and wear. The most common alloying elements are Nickel, Chrome, Molybdenum and Vanadium.

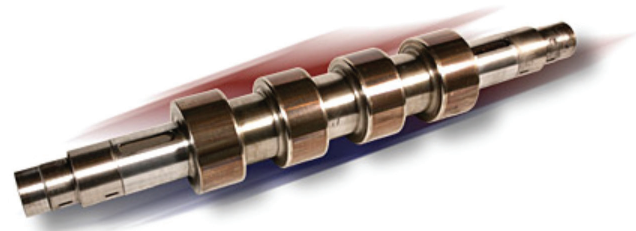


## SPECIALTY ROLLS

Leadar Roll also has the ability to manufacture work rolls, shafts and arbors for special applications. Whether the customer requires a roll material that is ultra-hard or the configuration of the roll is unique, we are able to adapt our knowledge and experience to your requirement.

These rolls include proven chemistries, as well as working with our customer's to help identify new opportunities.

Leadar Roll also offers a ForMax 60 Roll, which is a centrifugal cast high speed steel (HSS) Roll. This roll contains a higher hardness and, more importantly, a higher red hardness. A red hardness is the retained hardness when exposed to very hot operating temperatures. These rolls can be used throughout the Mill. However, these rolls work best when being utilized in the dog-bone or slitter passes.



**OUR PHILOSOPHY IS TO NEVER STOP  
WORKING TO FIND A BETTER ROLL  
MATERIAL FOR OUR CUSTOMERS.**



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