

**SPECIAL  
POINTS OF  
INTEREST:**

1. Therm-Tech was awarded 2008 Heat Treater of the Year by Industrial Heating Magazine.
2. We consistently rank #1 Heat Treater in the Midwest region.
3. You can save significant money by taking advantage of our Pricing Advantage.
4. Look on Page 2 for a special recession offer: an ADI coupon
5. Feature Article: Everything you wanted to know about Austempering (but were afraid to ask)
6. Ask Jason or Corey about our Fast Turn-Around guarantee



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# THERM-TECH

OF WAUKESHA, INC.  
HEAT TREATING SPECIALISTS

301 Travis Lane - Waukesha, WI 53189 USA - (800) 752-6917 - [www.thermtech.net](http://www.thermtech.net)

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## Austempering by Steven Wiberg - PE, President

Austempering was developed by Davenport and Bain in the 1920's. They identified an intermediate phase when quenching steel, ultimately called bainite that had higher ductility than martensite at comparable hardnesses. The austempering heat treatment was applied to ductile iron in the 1950's and it was discovered to have similar benefits with respect to mechanical properties. This fact coupled with the weight savings of iron compared to steel and the cost benefits as compared to steel forgings made austempered ductile iron (ADI) a winner.

While austempering is a special process in the heat treating world it is not at all unique. Therm-Tech of Waukesha has been austempering both iron and

steel for over twenty years. As referenced in the opening paragraph it is not new and with



qualified personnel utilizing the advancements in process controls it is a very robust process. Salt quenching (the austempering phase of the heat treatment) by its nature provides many benefits which include low distortion and excellent temperature uniformity within the quench bath. Austempering quench salt in the United States is supplied by a vendor that has a virtual monopoly on its sale and thus does not really vary

from heat treater to heat treater.

The austenitizing cycle of an austempering heat treatment is completed in an atmosphere furnace. This minimizes objectionable decarburization and assures uniform quenching which provides low variability of hardness within a batch. Typical atmospheres used are endothermic or nitrogen methanol. Both of these atmospheres are common and well understood. With the advent of oxygen probes on atmosphere generation equipment and individual furnaces, part surfaces are generally scale free and decarburization both total and partial is minimal depending on the as received condition.

Times and temperatures of the austempering heat treatment do

Continued on page 2

## Getting the Run-Around on Turn-Around?

Many heat treating companies are delaying the processing of your parts so they can assemble an "economical" furnace load; Therm-Tech is in a unique position where our volume allows us to run loads all the time. This allows us to also promise Fast Turn-Around of your parts.

This is our simple turn-around promise to you:

- With the addition of Turn-Around Insurance, if we do

not have your parts completed by the agreed date, the processing is FREE! No arguments, No Excuses and NO CHARGE.

- We will always try to exceed your turn-around expectations.
- We are experts dealing with Lean Manufacturing companies. We can handle your parts flow, without having to batch up your parts.

By taking advantage of Therm-Tech's exclusive Pricing Advantage and Fast Turn-Around, you can save significant money on the heat treating of your parts and get them back when you need them.

Please contact Jason or Corey at (800) 752-6917, or email them at [sales@thermtech.net](mailto:sales@thermtech.net) for questions or more details of **Therm-Tech's Fast Turn-Around.**



## Special Recession Offer...



Therm-Tech of Waukesha, Inc.  
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### HEAT TREATING CERTIFICATE

- **One FREE Tensile/Yield Test**
- **One FREE Set of Charpy Impact Tests**
- **Customer must supply test piece**
- **Can be redeemed on ONE Order through 6/30/2009**

This certificate MUST accompany the parts or PO.  
Contact Jason or Corey for additional information.

Issue date: 5/18/2009  
Expiration date: 6/30/2009

## Save BIG with Therm-Tech's Pricing Advantage!

*" While austempering is a special process in the heat treating world it is not at all unique. "*

Therm-Tech is the Midwest leader in heat treating and was awarded 2008 Heat Treater of the Year by Industrial Heating magazine. We offer the BEST VALUE for the heat treating of your special parts. Even in these challenging business times, we continue to support you with the Best Service, Best Quality and Best Turn-Around! Now we are offering the Best Pricing!

The Therm-Tech Pricing Advantage

is easily explained with two simple ideas:

- **Our goal is to Meet or Beat ANY competitor's quoted or invoiced price.**
- **You will save even more money by sending us more volume of parts.**

By taking advantage of Therm-

THE PRICE ADVANTAGE

Tech's exclusive Pricing Advantage you can save significant money on the heat treating of your parts and get them back when you need them.

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## Austempering Continued...

vary with chemistry and cross sectional area of a given component. Samples

should be heat treated and the heat tinted microstructure analyzed to determine the proper austempering times. Mechanical properties from test bars or castings should also be reviewed when developing an ADI heat treatment. Once the time and temperature parameters are found the results of the heat treatment should be consistent as long as chemistry and foundry practices remain relatively

constant. It should always be kept in mind that hardness is an exceptional measure of success or failure in heat treatment. Auditing of microstructure is good practice but with control of time, temperature parameters Brinell hardness really should be the first and foremost quality characteristic to monitor. Therm-Tech of Waukesha would be happy to work with your firm on any of your austempering needs.

Therm-Tech of Waukesha has excellent capabilities with respect to austempered ductile iron. We have capabilities for doing large components (48" x 48" x 45") and up to

4000 Lbs. in weight. Therm-Tech is very competitive in regard to pricing and many of our customers have gained substantial cost savings utilizing our services. Give us a try, you'll find out why Therm-Tech of Waukesha was named Industrial Heat Treating Magazines 2008 Heat Treater of the year!

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