

## HOT TOPICS

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- The Iron Casting Machining Process
- A Methodology to Measure Machinability of Ductile Cast Iron
- Understanding the Metallurgical Factors That Influence the Machinability of Ductile Cast Iron
- Fading In Ductile Iron Processing
- Impact of Reduced Rare Earth Metal Usage on Austempered Ductile Iron (ADI)
- Measurements of Ferrite Content in Ductile Iron
- Pinholes Occurring on Core Surfaces
- Metallurgical Quality Affected by Process Variables Mold Filling, Conversion to Ductile Iron, Melting, & Charge Materials
- Test Bars for Determination of Mechanical Properties
- Conversions Castings
- Why Do We Get More Ferrite at Some Times and Not Others?
- Welding of Ductile Iron
- Abnormal Surface Matrix Microstructures
- Microstructure vs. Machinability of Ductile Iron
- Oxide Effects Is Slag Flowing Into the Mold with the Iron, or is Dross Forming Inside the Mold?
- Riser Contact Design Practical Hints
- Late Inoculation
- Magnesium Ferrosilicon Master Alloys
- MgFeSi Cover Materials in Ductile Iron Treatment Ladles
- MgFeSi Optimizing Mg Recovery and Uniformity of Mg Recovery in Treatment Ladles
- MgFeSi Choosing a MgFeSi Design Specification
- MgFeSi Converting Liquid FeSi to MgFeSi
- MgFeSi Smelting FeSi
- Evaluation of Customer Material Specifications
- Graphite Shape at the Casting Surface and its Effects
- Lanthanum in Ductile Iron



- Role of Rare Earth Elements in Production of Ductile Iron
- Sub-Critical Anneal of Ductile Iron Castinas
- Basic Chemistry & Alloying Ductile Iron
- Fading of Magnesium in Treated Ductile Iron
- Molybdenum in Ductile Iron
- Effect of Tin in High Strength Ductile Iron
- Nodularity Sampling in Ductile Iron
- Improving Yield Improving Bottom Line
- Process Control Methods for Production of Castings in Compacted Graphite Iron
- Investigating Test Bar Failure A Case History
- Effect of Bismuth in Ductile Iron
- Practical Solutions to UT Problems
- Use of Chills in Ductile Iron Eliminating Shrinkage and Reducing Cost
- Casting Defect: Rough Surface
- A Statistical Capability Approach to **Reviewing Customer Casting Specifications**
- Defect Identification Inclusions (Sand & Slag)
- Conditioning Base Iron for Ductile Iron Production
- Casting Defect: Doughnut Effect
- Spectrometers in Iron Foundries
- Austempered Ductile Iron
- Inoculant Comparison Chart
- Failure to Meet Mechanical Properties in **Ductile Iron Castings**
- Mechanical Properties Casting vs. Keel Blocks
- Nodule Count What Should it be and Improving it When Low
- Carbon and Silicon in Metallurgical Processing of Ductile Iron
- Temperature in Metallurgical Processing of Effect of Antimony, Arsenic and Tin in Ductile Iron and Minimizing Loss
- Ductile Iron Standards
- Improving Impact Strength

- Rating Graphite Structures in Ductile Iron
- Toughness Measurement of Ductile Iron
- Geometric Dimensioning and Tolerance
- Casting Defect: Inclusions (Slag)
- Residual Stresses and Dimensional Control
- Non-destructive Testing Resonant **Frequency Inspection**
- Improving Fatigue Strength
- Making Riserless Ductile Iron Castings
- Non-destructive Testing Eddy Current Testing
- Quenching and Tempering Heat Treatment of Ductile Iron Castings
- Surface Treatments for Ductile Iron
- Chill Testing of Cast Iron
- Carbon and Silicon Level Control in Sand **Cast Ductile Iron Castings**
- Effect of Magnesium in Ductile Iron
- Residual Elements in Steel Scrap
- Casting Defect: Misrun, Laps, Cold Shut
- Casting Defect: Inclusions Sand
- Casting Defect: Cavities Blowholes
- Stress Relief (Anneal)
- Effect of Carbon in Ductile Iron
- Effect of Boron in Ductile Iron
- Casting Defect: Cavitites Micro Shrinkage
- Casting Defect: Gas Defects Pinholes with Graphitic Layer
- Casting Defect: Surface
- Casting Defect: Cavities Suck-in Shrinkage
- Normalizing and/or Tempering of Ductile **Iron Castings**
- Nondestructive Testing Ultrasonic Testing
- Casting Defect: Cavities Open Shrink
- Avoiding Chunk Graphite Formation
- Casting Defect: Cavities Shrinkage
- **Ductile Iron**
- Reducing Dross Defects in Ductile Iron

- Nondestructive Testing Liquid Penetrant Inspection
- Nondestructive Testing Magnetic Particle Inspection
- Effects of Core Sand on Green Sand Properties
- Casting Defects Due to Sand System and Properties
- Using Bottle Type Risers to Improve Casting Yield
- Thermal Analysis as a Process Monitoring/Control Tool in Ductile Iron Production
- Green Sand Tests and Interpretation
- Horizontal Pressurized Gating System Design
- Effect of Copper in Ductile Iron
- Fundamentals of Gating System Design
- Effect of Temperature on Ductile Iron Processing
- Molten Metal Filtration
- Key Casting Defects and Process
  Variables Affecting Them
- Process Variables and Casting Defects
- Manganese and its Effects in Ductile Iron
- Annealing of Ductile Iron Castings

- Ultrasonic Velocity Testing for Nodularity
- Phosphorus and its Effects in Ductile Iron
- Silicon and its Effects in Ductile Iron
- Carbon Dissolution in Iron
- Porosity at or Near Riser Contact
- Hardness Control in Ductile Iron Castings
- Suggested Foundry Requirements for Ductile Iron that is to be Austempered
- Tension Testing of Ductile Iron What Does it Mean?
- The Role of Carbon in Ductile Iron
- Metallurgical Factors Affecting the Machinability of Ductile Castings
- Improving Brinell Hardness Test Reliability
- Controlling the Finish of Green Sand Castings
- Combined Carbon in Ductile Iron
- Ductile Iron Charge Components and Purposes
- Ductile Iron Magnesium Treatment Practice
- Inverse Chill in Ductile Iron Castings
- Nodularity in Ductile Iron Castings
- Ductile Iron Inoculation, Purpose, and Results

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