



8th **Steel Success**
Strategies Conference

Frank Fisher, Castrip LLC

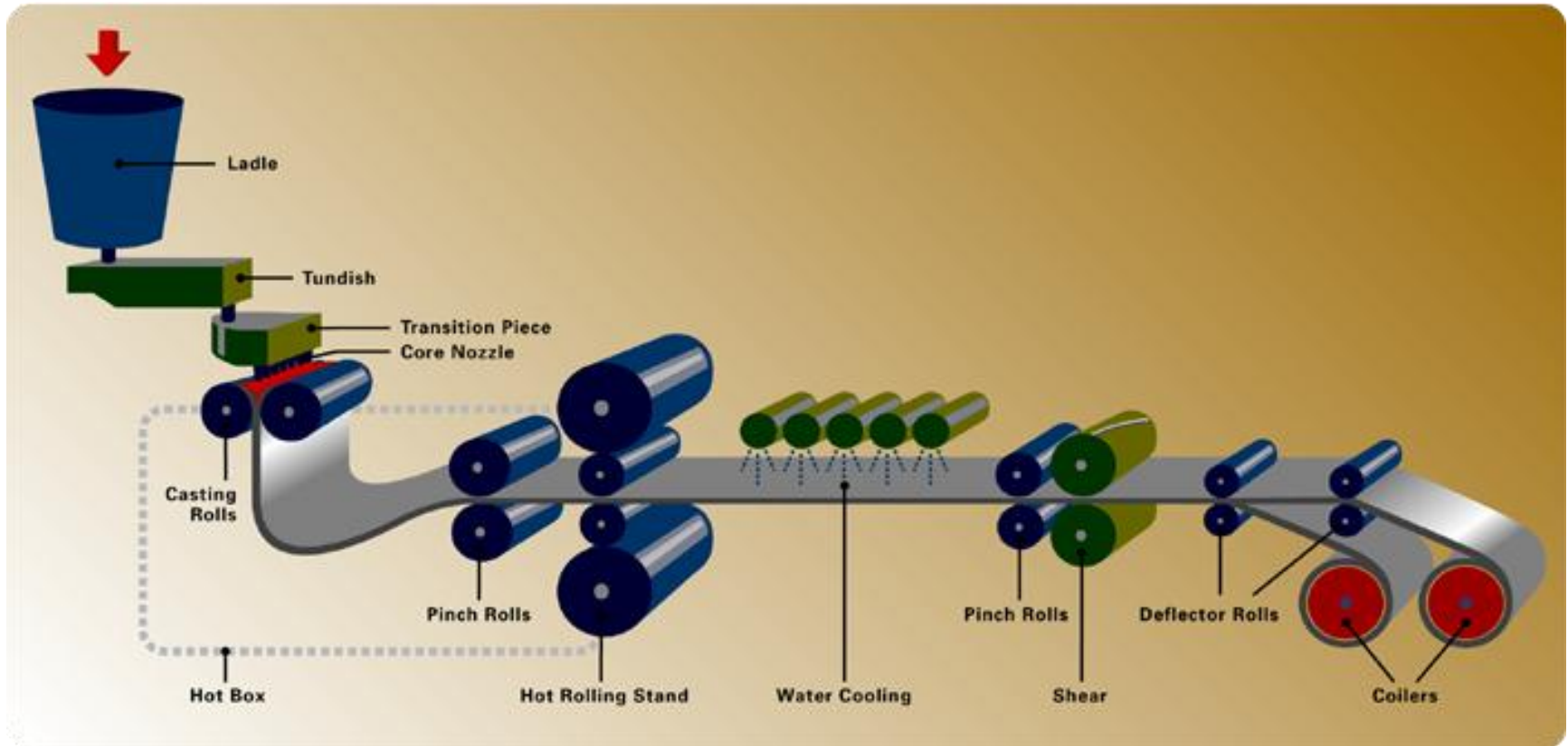
Thin Gauge Strip Production with the Revolutionary Castrip® Process

Castrip

LLC

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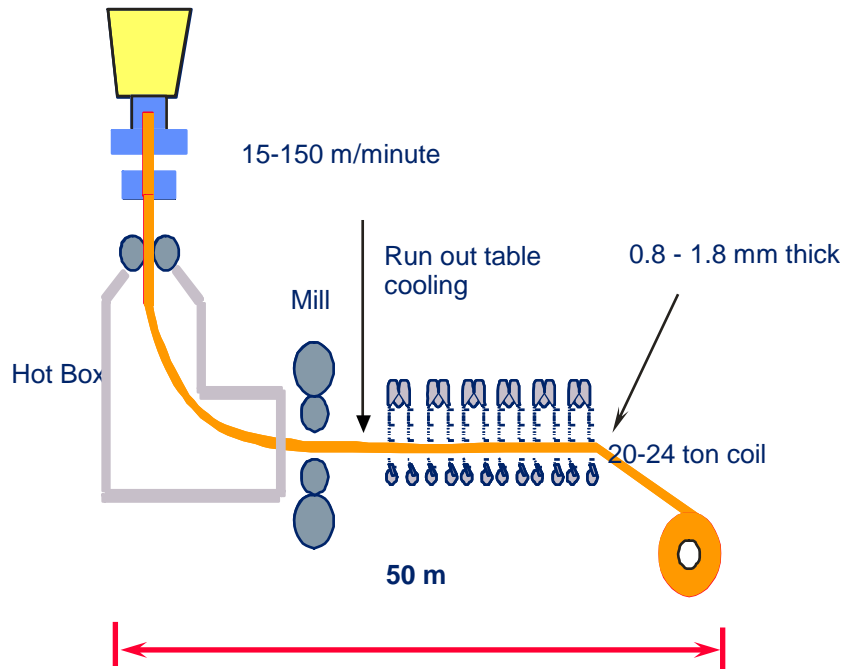
Castrip[®] Process Schematic



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Castrip Process Basics

Nominal production of 600,000 tpa
– 50 m line length

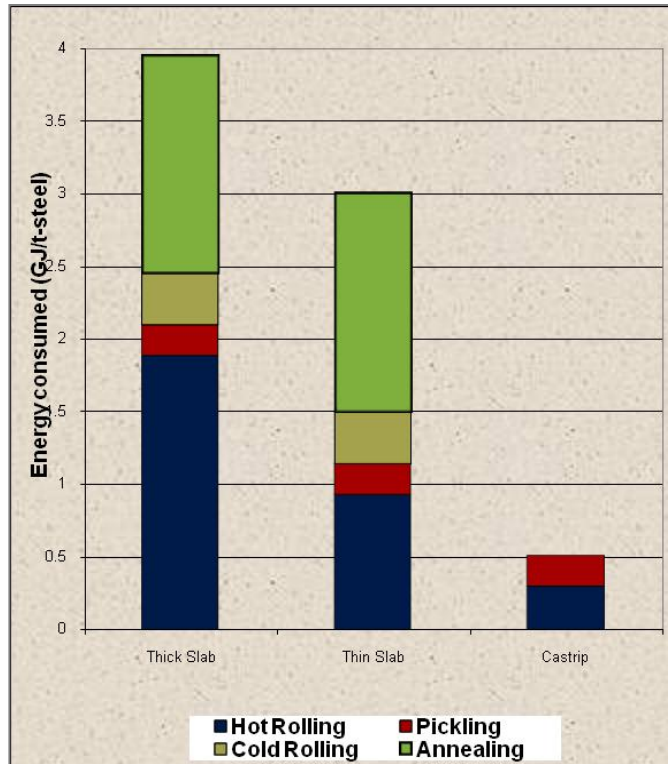


- Width from 1000mm to 1680 mm
- Small footprint - 200 x 200 m
- CapEx is ~ 25% less than ‘thin-slab’ caster/ ton of annual capacity
- OpEx cost ~ 15% less than ‘thin-slab’ caster/ ton of thin gauge strip
- Low Energy – **Green Technology**

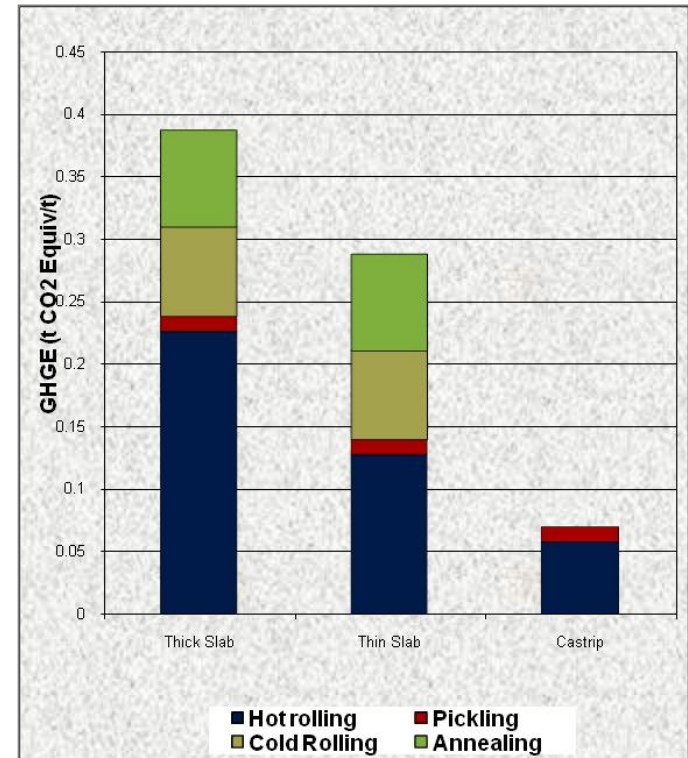
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Energy Savings and Low Emissions

Comparison of Energy Consumption



Comparison of Green House Emissions





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Nucor Yamato Steel





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Nucor Castrip Arkansas





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Began Hot-commissioning in January, 2010

Benefits and Improvements:

- **1650 mm cast width, 680K Tpa**
- **Low cost scrap (\$50-70/ton savings) mix for higher margins**
- **Enhanced cooling on Casting Rolls**
- **Revised Layout of Casting Deck Mechanicals for higher productivity**
- **Upgraded Automation system**

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Castrip® “UCS” Product

- **Chemistry – Low C (< %0.05), Manganese-Silicon**
- **A cold-rolled substitute**
 - **Surface roughness (Average Ra 1.1) between HRC and CRC**
 - **Market price is less than CR and higher than HRC with premiums for gauge**
- **Coil finishing**
 - **25% of product sold as SK/PO**
 - **25% of product sold as Galvanized**
 - **50% of product sold as Black**

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Steel Decking and Framing from UCS



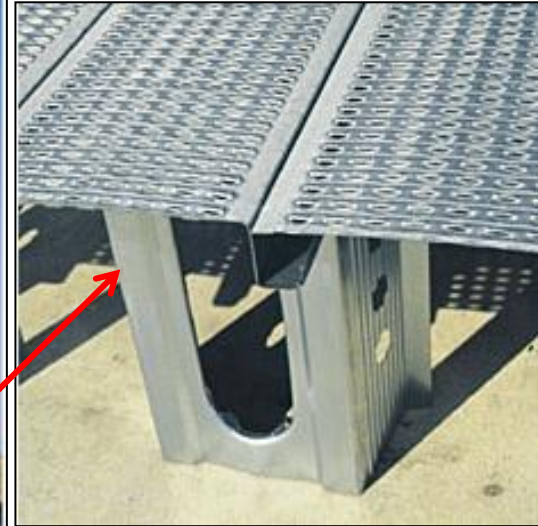
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Steel Tubing from UCS



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Agricultural Products



Made from UCS

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Shelving Systems



Upright End Trim



Base Bracket



8th **Summary**
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Castrip[®] Process Summary

- **2 Nucor Castrip[®] plants in commercial operation**
- **Low CapEx and OpEx make the Castrip[®] Process a strategic fit for regional supply**
- **Use of low quality scrap (savings of \$50-\$70/ton) for increased margins**
- **UCS sold at a premium over HR**
- **Product offer has been expanded to high strength grades through micro-alloying**
- **Challenges ahead:**
 - **Focus on process optimization**
 - **Expand value added offer: Grades, Gauge and Applications**
 - **Identify Strategic Partners interested in licensing to expand global footprint**

Green Technology- Environmentally Friendly

