Steel Bridge Update: Research, Availability, Choices & Costs

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ArcelorMittal USA

Highway Cost Conference
September 11, 2007
St. Louis, MO

Zakim Bridge, Boston
Global steel economy continues strong = 3 record years of shipments.
- China meeting own needs with new capacity.
  - Potential Chinese steel exports to USA causing concerns.
- Scrap prices have been up; recent surge driven by demand in Turkey, Malaysia, Thailand.
  - Iron ore prices also continue to rise
- Plate prices had been stable.
- Tight availability of heat treated & heavy or ingot plates
  - Iraqi war effort continues strong demand at ArcelorMittal’s Conshohocken plant for Army armor.
- Continued global consolidation: IPSCO, Algoma, & Oregon.
Consolidation in the US Plate Industry

Key Strategic Highlights

- Jindal starts up Houston
- Bethlehem acquires Lukens
- IPSCO starts up Montpelier
- Bethlehem starts up Hertford (Oct 01)
- ISG acquires Bethlehem
- ISG acquires USS Gary Plate (Nov 01)
- Nucor starts up Mobile (Nov 01)
- Nucor acquires Tuscaloosa (June 04)
- Mittal acquires ISG
- ISG acquires Citisteel
- Evraz acquires Oregon
- H.I.G. acquires SSAB
- ISG acquires IPSCO

Key Operational Highlights

- Bethlehem shut down Sparrows Point 160 mill
- ISG restarts Burns Harbor 110 mill
- Arcelor & Mittal merge
- Oregon starts down Fontana
- Nucor restarts Burns Harbor 110 mill
- SSAB acquires IPSCO
- Bethlehem starts up Hertford (Oct 01)

US Mill Carbon & Alloy Cut Plate Shipments in thousands of tons - Source AISI

<table>
<thead>
<tr>
<th>Year</th>
<th>Shipments</th>
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<tr>
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<td>2007</td>
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(1Q07 annualized)
US plate market is attractive and has a significant growth potential by 2010

US market - Cut Plate Apparent Consumption

- 2007-2010 forecasts are based on CRU’s growth estimations
- The main drivers of future growth are the energy markets (linepipe, wind towers, offshore)
US plate market is attractive and has a significant growth potential by 2010.
AM USA is #3 supplier of the US Cut Plate domestic shipments based on 2006 data
Various Welding & Design Activities

- Optimizing weldments & guidelines for use of HPS 70W and HPS 100W
- Continuing studies on the ductility, live-load deflection, superior toughness, and seismic attributes of HPS grades.
- Projects to develop new corrosion resistant grades of steel.
HPS Use in Bridges - Highlights

- **HPS grades in use in 45 States; over 250 in service**
- **Benefits of HPS 70W: 5 to 10% cost reduction**
  - Largest project, Mass. Route 3 with 33 HPS bridges; includes 100th bridge in service
  - Marquette Interchange in WS and Blennerhassett in WV are projects that are major users of HPS
- **Hybrid designs with HPS 70W and 50W**
  - For improved clearances totally HPS 70W used
- **HPS 100W used in NE, NY and WV; NC currently**
- **Use in fracture-critical members encouraged by FHWA**
Steel Availability

Millau Viaduct, France
Production Facilities for Bridge Steels
Plate and Structural Shapes (main members)

former USS Gary plate mill to be opened by ArcelorMittal by end of 2007
Steel Choices

Marquette Interchange
# Traditional Steels and New HPS for Bridge Construction

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<tr>
<th>Grade</th>
<th>Similar ASTM</th>
<th>Typical Production</th>
<th>Nominal Levels</th>
<th>C.E.</th>
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HR - Hot-Rolled, CR - Control-Rolled, IAC - Interrupted Accelerated Cooled, Q&T - Quenched and Tempered, N - Normalized

C.E. = C + Mn + Cu + Ni + Cr + Mo + V

\[
\frac{6}{15} \quad 5
\]
Steel Pricing

Woodrow Wilson Bridge
CRU Base Price

$500
$550
$600
$650
$700
$750
$800
$850

A-
S-
O-
N-
D-
J-
F-
M-
A-
M-
J-
J-
A-

HR
CR
HDG
Plate

The New Steel
Relative Bridge Steel Pricing
ASTM A709 Grades and A1010

Steel Grade

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<td>HPS 70W</td>
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<tr>
<td>HPS 100W*</td>
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<tr>
<td>100W*</td>
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<tr>
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<tr>
<td>50</td>
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A1010

1" x 96" plate
* Ni &/or Mo surcharge may apply
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<tr>
<th>Name</th>
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<tr>
<td>Larry Pacana</td>
<td>610-383-3220</td>
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<td>Jayne Atherton</td>
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Latest Steel Bridge Information at www.ArcelorMittal.com