

AM/NS CALVERT

State-of-the-Art Capabilities and Production

**AM/NS
CALVERT**

A joint venture between ArcelorMittal and
Nippon Steel & Sumitomo Metal Corporation



Hot Strip Mill (HSM) Components

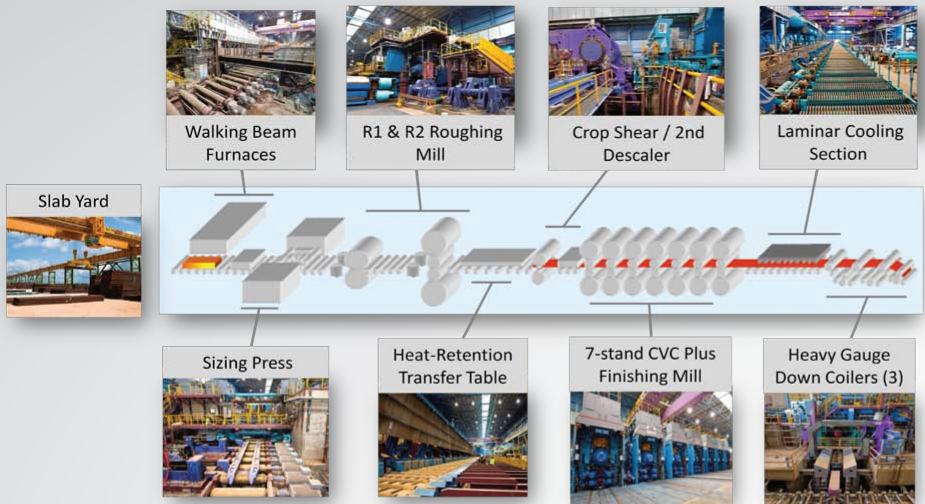
Latest Rolling Technology Provides Superior Product

AM/NS Calvert's 5.3m tonne/year HSM has been designed to produce flat carbon steel to the highest specifications. The HSM size range is 0.059" – 1" (1.5mm – 25.4mm). Only one other HSM in NAFTA is capable of producing hot bands at 1" thickness.

- **Walking Beam Furnaces** – The technologically-advanced furnaces, equipped with ultra-low NOx burners and sequential firing technology, provide uniform temperature distribution resulting in improved shape and gauge profiles. The "walking beams" carry the slab through the furnace without causing surface defects that are typical of a conventional pusher-type furnace.

- **7-Stand CVC Plus Finishing Mill** – Our HSM has the only 7-stand integrated Finishing Mill in the Southeastern U.S. The CVC Plus technology in the work rolls and back up rolls provide for superior flatness and better control of strip crown.

- **Laminar Cooling Section** – With an advanced control system, a perfectly-engineered header arrangement, and capability for extremely high water volume, our cooling section enables a wide variety of cooling patterns for all different steel types including multi-phase and complex phase steels.

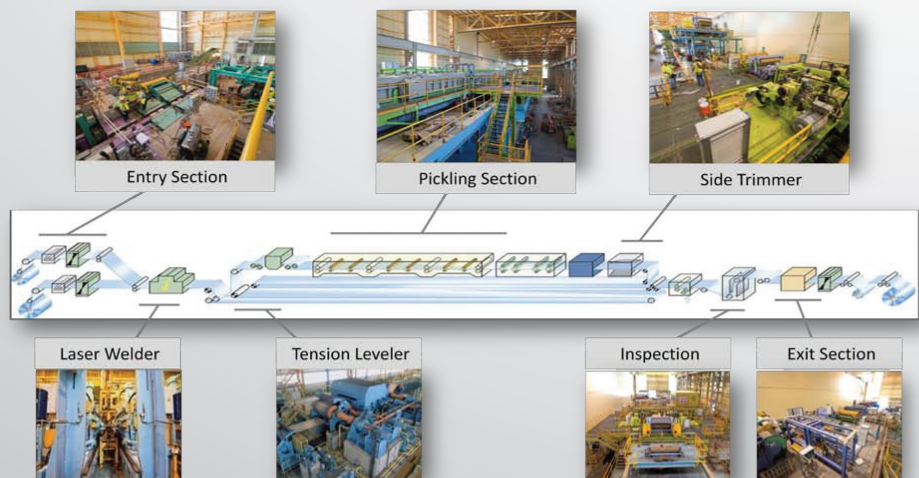


Continuous Pickling Line (CPL) Components

Tension Leveling and Laser Welding to Provide for Better Surface Quality

AM/NS Calvert has a 1.1m tonne/year stand-alone CPL and supporting Slitter Line Hot (SLH) to service the needs of Hot Rolled Pickled & Oiled (HRP&O) customers without having to go through outside processing. Since very few steel mills have stand-alone CPLs dedicated to producing HRP&O product, the addition of the CPL greatly simplifies the supply chain for our customers.

- **Laser Welder and Tension leveling** – The laser welder in the entry area of the CPL produces a weld which is virtually invisible and therefore capable to pass through the tension leveler, allowing us to process a wide range of products (thicknesses, widths and chemistries). The high capacity tension leveler guarantees a product with superior flatness for our Hot Roll Pickled (HRP) customers and provides for a highly efficient pickling process, thus producing a steel strip which is consistent from end-to-end.



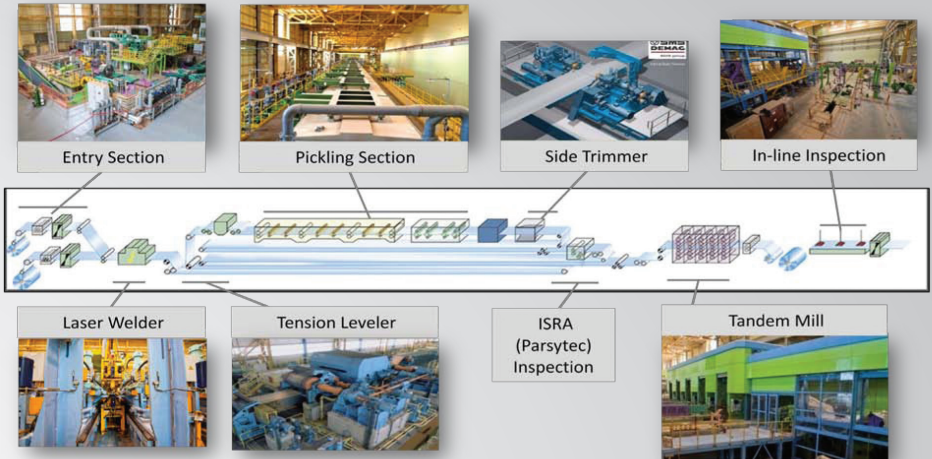
Tandem Cold Mill w/ Pickling Line (PL-TCM) Components

Superior Flatness, Gauge Control and Mechanical Properties

AM/NS Calvert has as 2.5m tonne/year PL-TCM. The production concept is not unique to our facility, but the “coupling”, or connecting, of a pickling line to a cold rolling mill (CRM) provides for a high-level of production efficiency by eliminating the typical recoiling of strip at the pickling line exit and then subsequent uncoiling of strip as it is loaded into a CRM.

- **Laser Welder and Tension leveling** - Exactly the same as the advantage provided in the CPL, the laser welder in the entry area produces a weld which is virtually invisible after cold reduction. The Tension Leveler ensures a consistent product is delivered to the Tandem Mill, thus producing a steel strip which has been pickled and cold rolled consistently from end-to-end.

- **5-Stand CVC Plus Tandem Mill** – Similar to the advantage provided by the Finishing Mill located in the HSM, the “tandem mill” provides superior flatness and gauge control. The “full hard” substrate is automatically conveyed to one of our Hot Dip Galvanizing (HDGL) or Continuous Annealing (CAL) lines.



HDGL #1 and #3 Components

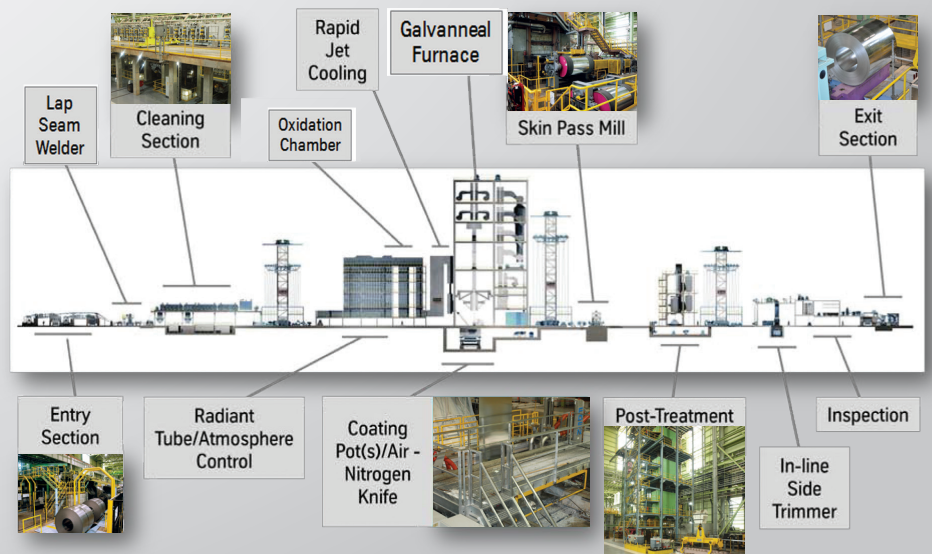
Primary Lines Providing Superior Exposed Surface Quality Material

AM/NS Calvert has the ability to produce 1.5m tonnes/year of Coated products (under current configuration) including Galvanized (GI), Galvannealed (GA), Galvalume® (AZ), and Aluminized (AL) as well as 700,000 tonnes/year of fully-finished (continuously annealed) Cold Rolled. HDGLs #1 and #3 produce high quality GI and GA for both exposed and unexposed applications.

- **Multiple Coating Pots** - Our HDG lines have dedicated coating pots for each different coating type. This allows for superior control of the pot chemistry.

- **Radiant Tube Atmosphere Controlled Furnace** – The lines have “Atmosphere Controlled Radiant Tube Heating” which provides consistent and uniform mechanical properties.

- **Rapid Cooling** – The lines can quickly and evenly cool the strip after annealing, which produces steel with better strength characteristics and a wider range of mechanical properties.



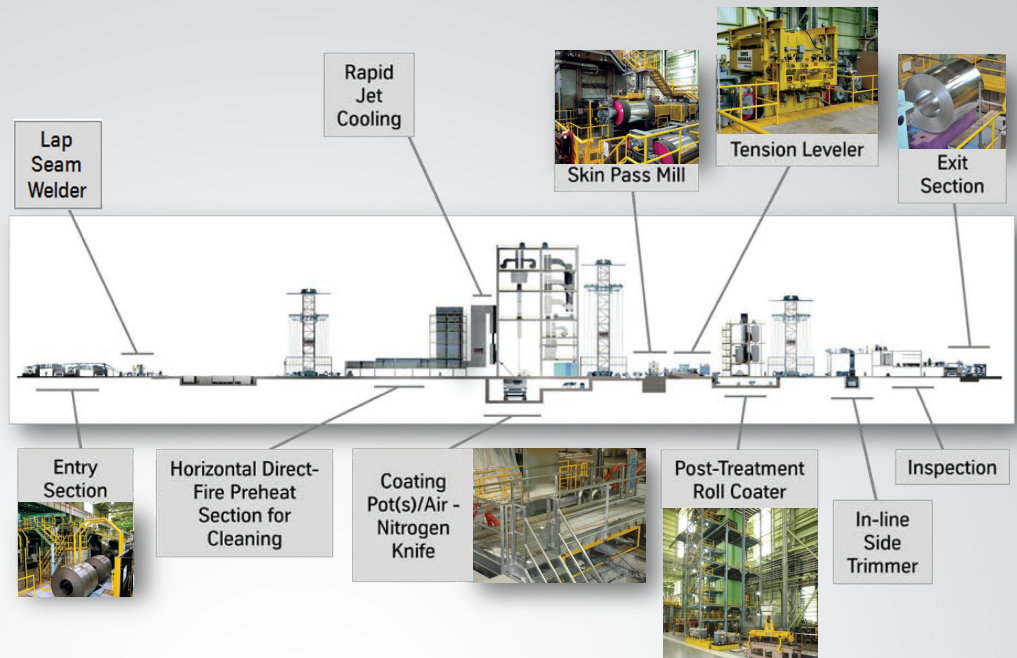
HDGL #4 Components

Galvalume®, Aluminized & Galvanized Capabilities

AM/NS Calvert has a 550,000 tonne/year light-gauge line which is designed to produce Galvalume®, Aluminized and Galvanized. The line focuses on flatness-critical construction applications as well as high-heat exhaust systems in the automotive segment.

• **Multiple Coating Pots** – Our HDG line #4 has three coating pots, with each one dedicated to a different coating type, Galvalume®, Aluminized or Galvanized. The multiple pot configuration allows for superior control of the pot chemistry, which gives us the ability to offer a superior product to our customers.

• **Tension Leveler** – The line has a tension leveler device located after the in-line Skin Pass Mill (SPM). The tension leveler, combined with the SPM, will allow us to offer an extremely flat product, a very critical attribute to the users of Galvalume® and Galvanized in the Construction segment.



Continuous Annealing Line/HDGL (CAL) Components

Continuous Annealing Technology for Superior Cold Rolled

AM/NS Calvert has a 700,000 tonne/year CAL. The line produces fully-finished Cold Rolled in a continuous process. As opposed to more traditional batch annealing, continuous annealing is a more efficient process and thus produces product with better uniformity.

• **Radiant Tube Atmosphere Controlled Furnace** – The “annealing” furnace located on the CAL line serves to increase the ductility of the recently hardened strip and also to relieve internal stresses. The CAL line has “Atmosphere Controlled Radiant Tube Heating” which applies indirect radiant heating to the strip as it passes through the furnace, providing consistent and uniform mechanical properties.

• **Fast Rapid Jet Cooling** – The ability to quickly and evenly cool the strip after annealing produces steel with better strength characteristics and wider range of mechanical properties.

