Australian Manufacturing Markets
Analyst Site Visit
Illawarra Coated Products

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Following the decision to exit the export packaging business, decided to combine:

1. Springhill
   > Cold Rolled
   > Metallic Coating
   > Painting

and

2. Domestic Packaging Business

3. To form “Illawarra Coated Products”
Springhill Site History

1939  John Lysaght (Australia) Springhill Works begins full operation
1955  4 stand continuous Cold Rolling Mill commissioned
1968  Cold Rolling Mill upgraded to 5 stands
1961  First continuous galvanising line commissioned
1964  Second continuous galvanising line commissioned
1966  Third continuous galvanising line commissioned
1970  BHP acquires 50% of Lysaght’s
1976  MCL1 converted to Zinc/Aluminium galvanising
      No.3 Paint Line commissioned
1979  BHP acquires 100% of Lysaght’s
1989  New pickle line coupled to 5 stand Cold Rolling Mill (CPCM)
1994  Decommissioning of Electrolytic Cleaning and Galvanising Line facilities
1996  CPCM Carousel Recoiler and Entry Accumulator upgrade
      Integrated Coil Packaging and Handling Project
2000  Closure of Batch Coil Annealing and Temper Rolling facilities
2002  Transfer of the Slit Recoil Line to Acacia Ridge
2003-05 Brownfield capacity increases
Springhill - Material Flow

Port Kembla Steelworks

HR Coil

Coupled Pickle Cold Mill 930 kt/a
- Descaling of strip via acid bath
- Strip thickness reduced by up to 80% by cold reduction

Metal Coating Lines 750 kt/a
- Hot dip metallic coating of Zinc or Zinc/Al alloy
- Acacia Ridge
- Service Centre paint line at Port Kembla

Uncoated Strip

Metal Coated Strip

Paint Line 140 kt/a
- Organic coating applied through use of applicator rolls
- Oven cured

Painted Strip

Note: Capacities represent nominal annual volumes
Springhill - Coupled Pickle Cold Mill (CPCM)

Process:
- Input Hot Rolled coil run through hydrochloric tanks to clean scale off strip, rinsed, dried, sidetrимmed then reduced in thickness via 5 stand cold reduction by up to 80%

Output
- Sold as Cold Rolled Uncoated Coil
- Further processed at the Metal Coating Lines

Annual Capacity
- Output – 930,000 tonnes
Process:
- Input Cold Reduced coil that is annealed, then hot dipped into a Zinc/Aluminium alloy to provide corrosion protection

Output:
- Metal coated coil to Paint Lines, State Service Centres or sold predominantly to building and distribution industry as ZINCALUME®

Annual Capacity
- 230,000 tonnes
Process:
- Input Cold Reduced coil that is annealed, then hot dip coated into Zinc to provide corrosion protection

Output:
- Metal coated coil typically sold as GALVSPAN®, GALVABOND®, ZINC HI-TEN®, DECKFORM® to both domestic and export markets

Annual Capacity:
- 290,000 tonnes
Process:

- Input Cold Reduced coil that is annealed, then hot dip coated into a Zinc or Zinc/Aluminium alloy to provide corrosion protection
- Dual coating pots

Output:

- Metal coated coil typically sold as GALVASPAN®, GALVABOND® or ZINCALUME® coil

Annual Capacity:

- 230,000 tonnes
Process:
• Strip is thoroughly cleaned and chemically pretreated prior to painting
• Primer and finish coats are applied through a series of rolls and the strip is oven cured at 200–260 deg C

Output:
• Organically painted coil, COLORBOND® for building, distribution and manufacturing markets
• 20 colours represent 90% of our production

Annual Capacity:
• 140,000 tonnes
1957  Hot dipped tinplate production commenced at Australian Iron & Steel; facilities included temper mill and shearline
1961-64 5 stand tandem cold mill, cleaning and annealing facilities commissioned
1963 No 1 Electrolytic Tinplating Line commissioned using Halogen tinning process
1968 No 2 Temper Mill commissioned
1972 No 2 Electrolytic Tinplating Line commissioned
197? Ceased production of hot dipped tinplate
1979 No 1 Coil preparation Line commissioned allowing sale of tinplate full width coil
1985 Upgrade of Tandem Cold Mill
No2 Temper Mill modified to allow production of Double Reduced blackplate
1991-92 Upgrade Tandem Cold Mill and No 2 Electrolytic Tinning Line
1998- 2000 Major upgrade of Tin Mill plant new facilities included No3 Electrolytic Tinning Line using environmentally friendly Methyl Sulphonic Acid process, No 2 Coil Preparation Line and rebuild of No 1 Temper Mill planned capacity increased from 350 to 450 tpa
2000 Closure No 1 Electrolytic Tinning Line
2005 Decision to withdraw from deep sea export markets, match tinplate production to Australia / New Zealand market demand and look for opportunities to utilise pickling and cold rolling capacity for Hot Rolled Coil and Cold Rolled sales
2005 Closure No. 2 Electrolytic Tinning Line
• Previously announced – intention to withdraw from export tinplate business.

• Resulted in:
  > closure of operating line – closed No. 2 Electrolytic Tinning Line
  > staff reduction

• Focus on Australia and New Zealand customers, with some export sales.

• Study progressing on potential to further improve profitability of remaining assets, in particular the cold roll mill to produce cold rolled feed for metallic coating (indicative cost low $100’s).

  Decision in CY2006.

• Pickle line upgrade progressing.
Packaging Products Material Flow

- Hot Rolled Coils
- Pickle Line
- Cold Mill
- Cold Rolled Coils
- Continuous Annealing Line
- Batch Annealing
- Cleaning Line
- No2 Temper Mill
- No1 Temper Mill
- No2 Electrolytic Tinning Line
  (Closed November 2005)
- No3 Electrolytic Tinning / TFS Line
- No1 Coil Preparation Line
- Sitting Line
- No2 Coil Preparation Line
**Process:** Input Hot Rolled coil run through hydrochloric acid tanks to remove scale off strip, rinsed, dried, sidetrimmed and oiled.

Hot Rolled pickled and oiled strip is then reduced in thickness via a 5 stand cold reduction process by up to 91%.

**Output:**

- Hot Rolled Pickled and Oiled Strip
- Cold rolled uncoated
- Further processing through Tin Mill
Packaging Products - Cleaning and Annealing

**Process:** Prior to annealing all residual rolling oil is removed from the strip in one of two alkaline electrolyic cleaning processes.

The cleaned strip is heat treated in either a batch or continuous annealing process to remove cold work and establish a desirable set of properties in the steel.

**Output:**

- Cold rolled annealed steel for further processing in Tin Mill.
**Process:** Cold rolled annealed strip is given either a light extension (1-2 % thickness) without lubricant or a second cold reduction (20%) with lubricant in a four high Temper/Double reduction mill. This establishes final material thickness, steel properties and surface finish.

**Output:**

- Tin Mill Blackplate for further processing on a tinning lines
**Process:** Blackplate surface is cleaned and pickled prior to electrolytically depositing a thin layer of tin (<1um) which is then reflowed to give a reflective surface then passivated and oiled. Sidetrimming and cutting to final length can be carried out on tinning line or separate coil preparation line. Line also has capability to apply a thin chromium layer instead of tin.

**Output:**

- Electrolytic tinplate coil for packaging of human food, petfood, paints, chemical and a range of industrial products.
- Capacity 200,000kt.
Illawarra Coated Products Business Initiatives

**Objective:** Continue to improve technical, product and cost efficiencies

- “Single Line” Operation in Packaging Products
- Packaging Products Cold Mill Upgrade Study
- Brownfield Capacity Improvements
- Plant Quality
- Workplace Change
- Supply Chain Velocity
  - Further improve delivery performance
  - Further reduce lead time, inventory and damage to product
  - Drive continuous improvement
Our Markets and Supply Chain

- Illawarra Coated Products
  - Domestic
  - Export
  - Off-shore customers
- Direct
- Service Centres
- Distributors
- Building & Construction
- Manufacturing
- Packaging

ICP Analyst Visit November 2005
Illawarra Coated Products – Business Excellence

Delivery Performance

Customer Complaints / Week

Despatch Tonnes per Employee
Australian Manufacturing Markets
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