



# 72" 4-High 2000 HP Cold Mill

## *The Application*

Norandal USA, a manufacturer of light and medium gauge aluminum foils used in the packaging and automotive industry needed a major retrofit on their breakdown cold rolling mill.

Shape control for the continuous cast coils needed improvement, and because of this, production levels were limited. PCT Engineered Systems, LLC was subcontracted by Mannesmann Demag, an international mill equipment manufacturer, to provide the PLC control and operator stations, as well as the mechanical and electrical installation for the project.

Mannesmann Demag chose PCT because of a past partnership providing turnkey reconstruction management of an aluminum cold mill after a fire. Additionally, Norandal USA directly contracted with PCT to provide a new digital drive system for the cold rolling mill.



## *The PCT Solution*

PCT Engineered Systems worked with Mannesmann Demag and Norandal USA to increase the mill's productivity by improving shape control and reducing between-coil time.

Shape control, a major concern for Norandal USA, was improved by providing the following:

- A new hydraulic gauge control system
- A new work roll bending scheme
- New entry bridle equipment
- Upgraded flatness and spray controls
- An ABB shape roll

Metals

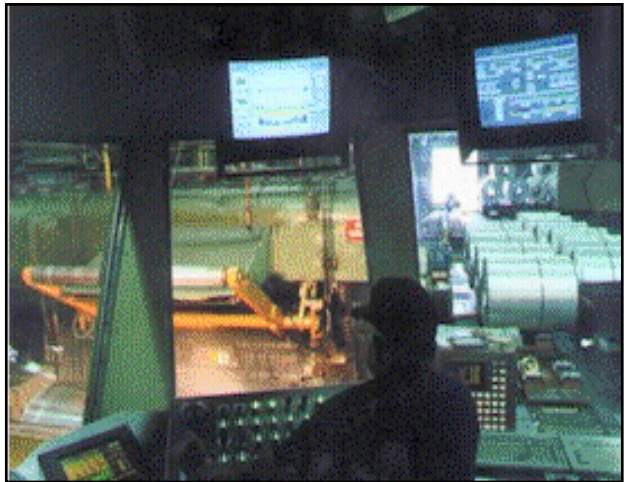


Once improved shape control was established, the mill became less of a bottleneck in regard to production throughput. New, electric drive controls that use a Eurotherm/SSD digital drive system to improve speed control on the existing motors, reduced between-coil time were also added. By improving speed control, PCT has helped Norandal USA increase the amount of useable product per coil. PCT also provided a new control system including a GE 90-70 PLC system employing a fiber optic link to the digital drives, and linked via Ethernet to the Mannesmann Demag Maras mill control system.

Other modifications provided by PCT included:

- Operator interface stations in the pulpit and on the mill
- A new operator's pulpit and control consoles
- A new trim removal system
- High- and low-pressure hydraulic piping routing and installation
- Electrical conduit and cable installation planning and labor
- Remanufacture of the hydraulic gap cylinders to facilitate the improved gauge control

For a project of such magnitude, this complete turnkey upgrade was completed with minimal downtime. To date, the mill has outrun production expectations, and Norandal USA has reported significant improvements in product shape and flatness.



**PCT**  
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