PRIMETALS TECHNOLOGIES

EDGEWIPE
A FLEXIBLE SYSTEM FOR EFFECTIVE CONTROL OF STRIP EDGE DRYNESS

The Edgewipe system is a flexible system that incorporates all the necessary features for effective control of strip edge dryness.

Where coolant is carried over to the exit side of the mill, standard air blow-off systems remove excess fluid from the top and bottom surfaces of the strip but not from the extreme vertical edges. Strip dryness is achieved by blowing the beads of coolant off the strip edges and removing it completely by drawing the resulting plume of fluid through an air mover away from the strip. This prevents residual coolant migrating into the body of the rolled coil causing downstream quality problems.

The industrial PC based control system operates a mechanism to dynamically position the blow-off jets and suction ducts in the correct position to remove the bead of coolant that forms on the edge of the strip as it leaves the roll bite. The system continuously tracks the strip edges during mill rolling via an infra-red tracking system.

CONSTRUCTION

The overall design of the unit reflects the hostile operating environment of a rolling mill which must operate for extended periods of time. The PC based control system consists of an industrialised PC and a remote I/O connection to the necessary field signals. The I/O interface units are housed in an interface box which can be conveniently located close to the mill.

BENEFITS

- Improves strip edge dryness for maximum yield across the full product range
- Reduces harmful emissions to the environment
- Significant cost savings achieved through coolant recycling
- Robust, reliable and easy to maintain
- Automatic self seeking width setting
- Self adjusts for multiple pass heights and varying strip widths
- Continual width and strip centring indication

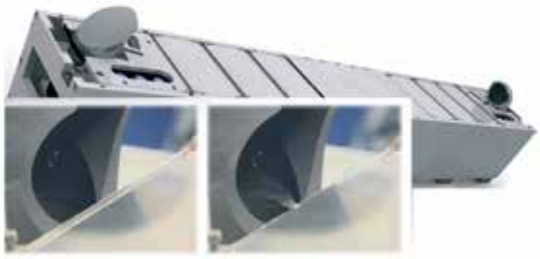
RELIABILITY

Proven reliability has been achieved over many years as a result of the sturdy construction and simple mechanical design.

REFERENCES

Although only introduced in 2004, the Edgewipe already boasts a number of references for successful strip dryness and removal of fluid beads from the strip edge.

Real time control functionality with integrated HMI and interface screens.



Edgewipe - before and after activation

OPERATING PRINCIPLE

A bead of fluid forms on the edge of the strip as it leaves the roll bite. To achieve dryness at the strip edge, the Edgewipe blows the beads of fluid away from the strip edge which are then removed via a suction duct. This prevents coolant migrating into the body of the coil, which reduces the coil staining and downstream quality problems.

The Edgewipe system consists of a mechanical device fitted to the exit side of the mill, below the strip, comprising of:-

- Infra-red (IR) light sensors to detect each strip edge
- A hydraulic system to position the air blow off jets accurately at each strip edge
- An air suction system to remove the excess fluid
- A PC based control system to provide the control algorithms necessary to interface with the IR system and control the hydraulic positioning

The PC can be positioned away from the mill in an operator's pulpit or an electrical control room. A profibus connection links the PC to the interface box. The control software is a well proven system, which incorporates the necessary features to achieve performance.

FEATURES

The Edgewipe, provided by Primetals Technologies, provides the user with the following features and benefits:-

- Multi-nozzle air sweeper jets clear the underside of the strip edge
- Targeted knock-off jets clear the vertical edges of the strip
- Air mover system directs unwanted coolant away from the strip
- Stainless steel nozzle manifolds, pipework and fittings
- Robust steel structure designed for the cold mill environment
- Modular construction for ease of maintenance
- PTFE covered cables
- Quick disconnect plugs
- Integrated PC control and alarm status display
- User friendly diagnostics
- Remote support capability
- Hydraulic cylinders with integral position transducers ensure accurate jet positioning

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