

The image shows a high-angle view of industrial machinery in a galvanizing line. A large, light-colored rectangular component is being processed. The machinery is primarily blue and yellow. A semi-transparent blue overlay covers the lower half of the image, where the text is located.

Dynawipe for Galvanizing Lines

High quality wiping solution

Continuous improvement

for air knives dynawipe.

YOUR CHALLENGE

The production of galvanized steel has reached new standard in term of coating quality. Galvanized products should be delivered on demand with a rigorous and controlled production cost. Zinc price is a key component of the total production cost for a hot dip galvanizing line. Coating weight must be perfectly applied in term of thickness and homogeneity. Surface aspect is also a quality criteria for the finished product.

OUR SOLUTION

Clecim is a global supplier and expert in the steel business with dedicated engineers specialized in galvanizing process and metallic coating. Wiping step has been carefully studied and the Air Knives Dynawipe equipment is used worldwide.

Air Knives Dynawipe reach the highest standards for quality surface aspect and coating applications: automotive, home appliance and construction. Air Knives Dynawipe integrate Clecim engineered automation systems which, associated with the coating gauge, provide top-level performances in terms of coating control. The coating is applied with a perfect regularity all along the strip width and length; this minimizes coating weight deviation and consequently reduces the zinc consumption.

The state-of-the-art technologies include

- Non-contact baffle system
- Heavy duty lip cleaning device
- Advanced coating control
- Edge masking system
- Online tilting adjustment

Main benefits of Air Knives Dynawipe

- User-friendly operation
- Appropriate diagnostic
- Optimized maintenance
- Complete workshop testing
- Efficient after-sales service



GOOD REASONS FOR CLECIM:

The benefits of our Air Knife Dynawipe system are emphasized by our global galvanizing know-how and our in-house expertise as equipment manufacturer. This approach serves our clients and gives them a substantial advantage in their market.

- **Operational safety**

Galvanizing pot area is a harsh environment for operator with high temperature, zinc splashing, high noise level. Therefore, for safety and efficiency, the operators can manage all air knives motion through the Human Machine Interface. Operational mode can be selected from the operator PLC to operate the Air Knives Dynawipe in fully automatic or manual control modes

- **Real time quality monitoring**

The tracking of the coating data all along the strip length provide a great advantage for production plan and convenient diagnostic. The data logging system is particularly helpful to perform the coating analysis

- **Simplified maintenance**

All components of the Air Knives Dynawipe have been designed and experienced for severe working condition. A dedicated off line test cabinet for the air knives simplifies the equipment maintenance with easiest access to the lip gap profile set-up

- **Savings**

Smart control system allows reduced energy consumption through efficient blower speed control and edge masking adjustment.

Optimized control of the coating deposit on the strip surfaces allows to minimize zinc consumption

Air Knives Dynawipe

draw on four decade
of expertise.

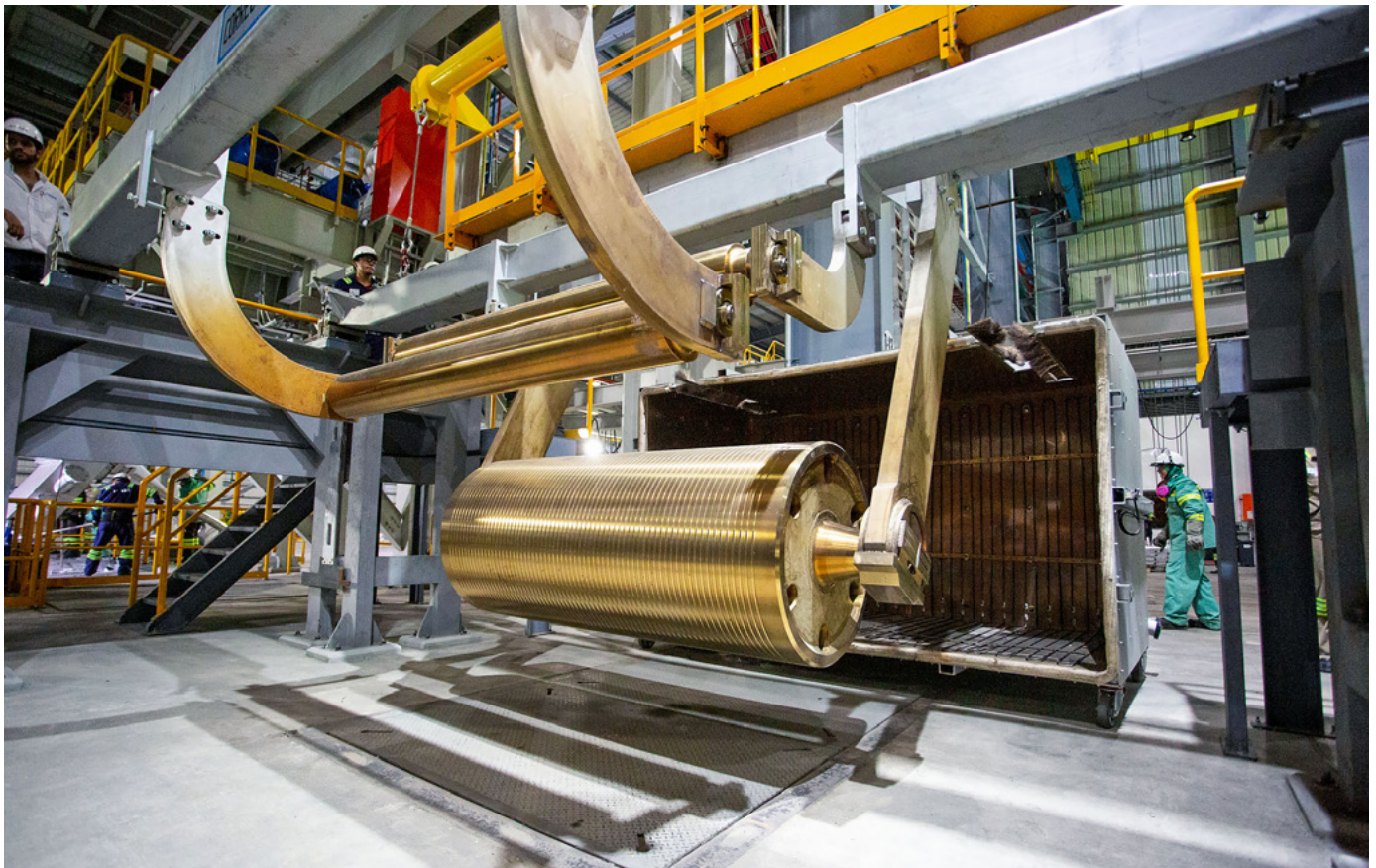
From the early stage, Air Knives Dynawipe technology has been designed on the basis of fundamental principles that guarantees quality and regularity of coating thickness. With this approach Clecim has acquired perfect control of:

- Strip stability
- Coating thickness and surface quality
- Energy consumption
- Coating savings
- Pot rolls equipment
- Control automation system

STRIP STABILITY

Stability is essential to secure a high level of performance in terms of coating thickness control and coating homogeneity on strip surfaces. Clecim offer a full package integrating: air knives, immersed rolls, instrumentation and automation to achieved an optimal strip stability.

Our solution is based on a 3 immersed rolls strategy, with optimized designs & materials according to customer demand.



COATING THICKNESS AND SURFACE QUALITY

Based on our experience, Clecim select the most suitable solution in order to reach the best coating requirement.

- Built in robust mechanics, the automatic lip cleaning system removes zinc splashes from the lips
- Wiping beam positioner moves with high accuracy. The design allows a strip visibility to the operator in order to monitor the coating quality
- A non-contact baffle system ensures low noise level and strip edge quality optimization
- One line tilting adjustment offers alternative way to applied coating product
- Integration of coating gauge into our automation system is also one of the key parameters to ensure the best performances

ENERGY CONSUMPTION

Air Knives Dynawipe control loops allow the power consumption to be kept at the minimum. The speed of the blower motor producing the zinc wiping pressure is controlled to optimize energy consumption.

Edge masking adjusts automatically the lip gap width according to the produced strip section. Edge masking reduces the wiping medium consumption, especially for nitrogen wiping.



COATING SAVING

Clecim offer an innovative model of loop control to achieve an excellent coating with minimum variation along the strip.

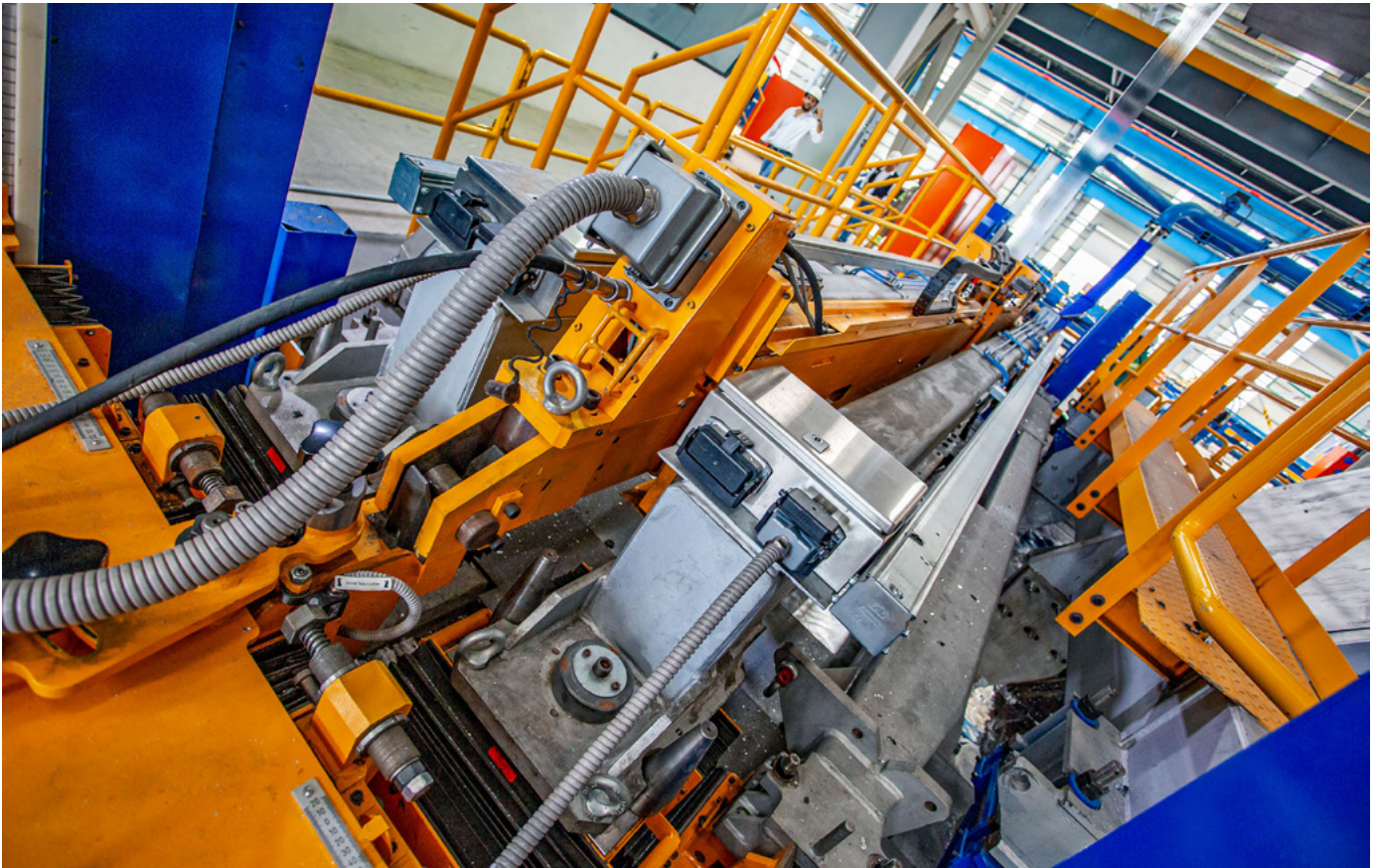
Zinc consumption is reduced by optimizing the amount of deposited coating through control models with performance data validated on site by our customers.

Clecim coating model is estimating in real time the right parameters to be applied during line speed change.

POT ROLLS EQUIPMENT

The immersed rolls and bearing offer an excellent resistance to high temperature metallic corrosion in order to reach a production campaign longer than what was known to date.

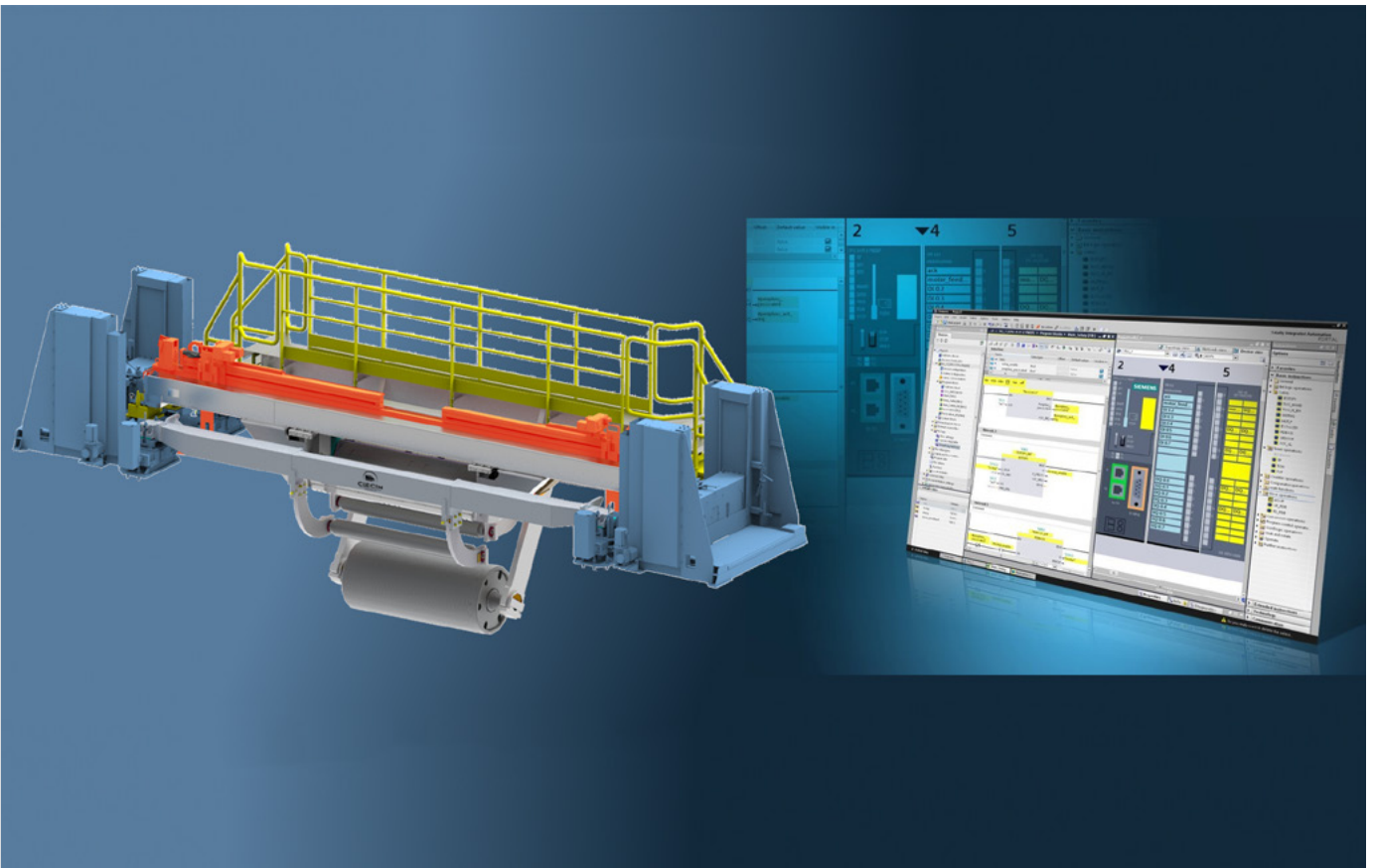
Our design is based on improved solutions to decrease operational maintenance by using advanced materials. Both stabilizing roll and correcting roll could be adjusted horizontally and are independently isolated from vibration to obtain a better control of the strip profile and flatness at wiping position.



CONTROL AUTOMATION SYSTEMS

Clecim electrical equipment simplifies operations via Human Machine Interface. Automation software will automatically define the optimized parameters for a perfect control of the Air Knives Dynawipe. Operators remain the master to control at any time the parameters of the air knives, especially in case of bad strip profile.

Modern and intuitive Human Machine Interface simplifies the operator works by offering easy access to essential parameters and providing appropriate information.



Manufacturing and test facilities

made in france.

CLECIM EXCELLENCE WORKSHOP

Our Air Knives Dynawipe system is manufactured and tested by our Clecim team in our workshop in Montbrison, France.

Since 1994 the Clecim workshop has been compliant with international quality standards (ISO 9002 then, ISO 9001 today). Since 2007 our workshop has also been compliant with the international environmental standards and obtained ISO 14001 registration.

All our special process equipment, including Air Knives Dynawipe system, is manufactured, assembled and tested in our workshop to ensure the best quality and to reach the targeted performances, using one single source. This offers to our customers the opportunity to follow the equipment throughout the manufacturing steps from project start up to inspection.

TEST FACILITIES

Testing includes mechanical adjustments as well as individual and sequence automation tests. Every Air Knives Dynawipe are fine-tuned for smoothest and fastest integration into your facility.



OUR INNOVATION AT YOUR SERVICE

Modernizing can be an effective way of staying at the edge of the market requirements and reducing conversion costs. Clecim approach is covering incremental improvements to major revamps in a single stage. Increasing demands for higher product quality and lower production cost urge strip producers to constantly look for equipment upgrades and more efficient operations. At a certain point, such adaptation cannot be done by the operator himself in the course of normal maintenance and a complete review has to be considered.

Clecim has acquired extensive experience in upgrading and modernizing processing lines. Working closely with its customers, Clecim has developed a tailored modernization concept based on customer individual needs, by taking all boundary conditions into account. The result is a solution which maximizes the components of the processing line concept. The solution may be purely electrical, automated, mechanical or a combination. Based on the selected concept, modernization work can be carried out during several maintenance stops or during a plant shutdown.

Targets can be subdivided as follows:

- Reduction of operating costs (energy, maintenance and consumables)
- Improvement of product quality (coating thickness, coating uniformity)
- Extension of the product mix in terms of steel grades and dimensional range



Lifecycle management

BDA way of working.

As a partner, we support you all along the lifecycle of your equipment through our BDA way of working:



- Before: define improvements and optimization solutions through Consulting Services
- During: deliver on our commitments with premium quality equipment and services to enable our customers reaching their targets
- After: support the operations and maintenance activities with on-site assistance and spare parts

LIFECYCLE SERVICES

As a Dynawipe user, you have conflicting needs. On the one hand, your performance is measured each quarter against short-term profitability expectations. On the other hand, you have to think on a totally different time scale compared with the capital market. Depending on the lifetime of your Dynawipe, you have to take 15 years or more into account. At the very least, that's 60 full quarters.

But thanks to our comprehensive expertise and integrated approach to solutions, you benefit both short-term and long-term from our lifecycle services.

In the short term: backed by our extensive experience with many reference plants, we provide you with the certainty of fast, dependable production start-up and shorter amortization periods.

In the long term: our master plan guarantees competitive performance for your plant and your Dynawipe in every phase of its lifecycle. Whether we are providing technical support, optimizing maintenance, or making permanent plant improvements, we are always working to ensure the cost effective operation of your plant and products. Thanks to our lifecycle supports organized in clusters (Europe, America and Asia), you will benefit from our worldwide presence.

THE FOLLOWING SERVICES ARE AVAILABLE TO OUR DYNAWIPE:

- Spare parts management and supply, from a set of standard spares, with on-demand replacement and repair
- Preventive maintenance visits, organized periodically to prevent or detect at an early stage any efficiency loss of the equipment, on the basis of thorough diagnostics
- Expertise of the condition of the machine, report and refurbishment or upgrading proposal
- Hotline and remote maintenance services; software updates
- On-demand on-site intervention

Excellence from Experience

SELECTED SUCCESS STORIES WITH DYNAWIPE MACHINES



Borcelik Steel Industry Trade Inc., Turkey

Line type: CGL #1

Clecim solution: Automation Revamping

Your benefit: High quality and cost efficient production, reduction of zinc consumption

Technical data: Width: 600 - 1550 mm; coating thickness: 50/350 g/m²



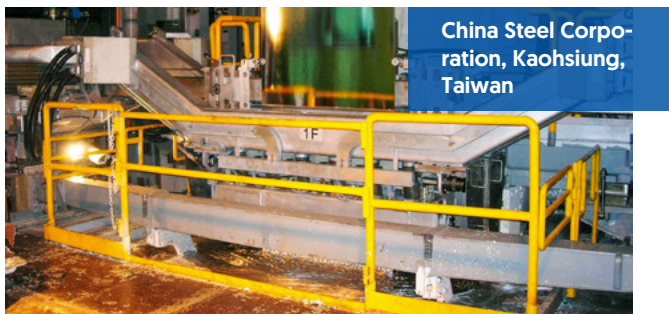
Borcelik Steel Industry Trade Inc., Turkey

Line type: CGL #3

Clecim solution: Air Knives Dynawipe

Your benefit: High quality and cost efficient production, reduction of zinc consumption

Technical data: Width: 750 - 1530 mm; coating thickness: 80/400 g/m²



China Steel Corporation, Kaohsiung, Taiwan

Line type: CGL #2 for zinc and galvaneal

Clecim solution: Air Knives Dynawipe

Your benefit: High quality and cost efficient production, zinc coating target is reduced by about 5%

Technical data: Width: 800 - 1,700 mm; coating thickness: 60/275 g/m²



Talleres y Aceros TYASA, Mexico

Line type: CGL

Clecim solution: Air Knives Dynawipe

Your benefit: High quality and cost efficient production, reduction of zinc consumption

Technical data: Width: 850 - 1524 mm; coating thickness: 91/503 g/m²



CLECIM SAS

41 Rue de Feurs, CS 50099
42600 Savigneux Cedex, France
T +33 4 77 96 63 00
contact@clecim.com



© 2023 CLECIM SAS ALL RIGHTS RESERVED



The information (including, e.g., figures and numbers) provided in this document contains merely general descriptions or characteristics of performance based on estimates and assumptions which have not been verified.

These estimates and assumptions have to be analyzed on a case-to-case basis and might change as a result of further product development.

CLECIM SAS excludes any liability whatsoever under or in connection with any provided information, estimates and assumptions. The provided information, estimates and assumptions shall be without prejudice to any possible future offer and/or contract.