

Coil Coating Technologies B.V. A New Player in the Indian Steel Industry and a Market Leader in Europe



Coil Coating Technologies B.V. (CCT), part of AD International B.V., is a renowned chemical manufacturer of metal surface treatment chemicals. With its REACH and ROHS compliant products, it serves key players in the steel industry around the globe. Since 2018, through a collaboration with FLOWCHAR INDIA PRIVATE LIMITED, it is rapidly gaining market share in the Indian market. An important driver for this growth is the fact that CCT products are innovative, cost-efficient and exceeding the current market standard in Chromium (VI)-free metal treatments.

A new player in India, a market leader in Europe

AD International, founded in 1974, is a valued partner for surface treatment solutions used in industrial processes and for production operations, all tailored to customer specifications in expanding international markets. Through smart system thinking and a complete understanding of the relevant industrial processes, the company has developed an extensive range of products that can be tailored to meet individual demands for a wide range of end-use and in-process applications. Today, AD International has more than 44 years of experience in developing, manufacturing and the worldwide supply of a wide range of metal surface treatment chemicals. The company draws knowledge and expertise from across the range of its disciplines to provide customers with the best possible advice. AD International is a knowledge-driven company and, as a result, R&D is taking an increasingly prominent place in the organisation. The company has a strong R&D department comprising people from various chemical backgrounds, creating a healthy ecosystem for crossovers that can lead to new insights into both existing and new products.

“We are very proud of our highly skilled R&D team which has a typical Dutch mindset: combining creativity with a pragmatic approach.”

Chemical knowledge and applications lay at the basis of the company and form one of its main assets. Knowledge of the market, clients’ products and their production processes, is key to the company’s competitive position. The focus for the immediate future will be to create a return on investment for all new products through a clear marketing and sales strategy. This should see AD International evolve during that time from a technological company to a market-driven company. On the technology front, the focus will be on the refinement of the new conversion layer product for steel and the market introduction of newly developed products.

AD has a mission to become the global market leader in chromium (VI)-free passivation. The company has already established this position in Europe and expects that its experience could drive the growth in other areas of the world.

Rapidly growing in the Indian market for galvanised coils

In India, AD International is active through its business unit Coil Coating Technologies B.V. (CCT). Since a couple of years, it has a collaboration with FLOWCHAR INDIA PRIVATE LIMITED. FLOWCHAR has commenced its commercial operation in 2018-19 and covered an important milestone of introducing the products to the Indian industry and conducted several product trials from R&D to commercial production with achieving final product approval by leading industries. The

company has since launched successful partnerships, registered into their eligible vendor list and started regular commercial supplies. CCT and FLOWCHAR expect to rapidly gain more market share in the Indian market.

An important driver for this growth is the fact that CCT products are innovative, cost-efficient and exceeding the current market standard in Chromium (VI)-free metal treatments. CCT offers coil coating technologies that effectively prevent corrosion in the earliest stage as they are applied on the production line during the manufacturing process. Coils are finished steel products such as sheet or strip, which have been wound or coiled after rolling. These coils are very prone to corrosion that appears, for example, as white rust on zinc-coated steel strips. This form of corrosion develops very easily during storage and is the ultimate enemy for manufacturers in consumer goods, construction, automotive and other industries. Manufacturers such as TATA Steel Europe use CCT chemicals as part of their continuous manufacturing process. After the CCT treatment, a coiled strip can be stored without oiling, and it can offer benefits in ease of formability, deep drawing and post-paintability as well as extended corrosion protection.

“TATA chose us because of our chrome (VI)-free products and our reliability, quality and high levels of service.”

CCT has experience and expertise in the treatment of aluminium alloys, zinc-coated steel, galvanised strip products, steel and zinc-magnesium alloys. The complete product portfolio consists of:

- Passivation for galvanising lines
 - Zinc (alloy)-coated steel
 - Electrogalvanised
- Thin Organic Coatings (TOC’s)
 - Zinc (alloy)-coated steel, Galvalume, Galvannealed, Aluminised
- Pre-treatments for coil coating
 - Pre-treatments for aluminium
 - Pre-treatments for zinc-coated steel and cold rolled steel
- (Etching) Cleaners
- PrimeLube/ PLT Technology

Innovation: PrimeCoat® Z838-4P, a single product for TOC and passivation

One of these new and innovative products is PrimeCoat® Z838-4P, a novel 2-in-1 product for passivation and thin organic coating (TOC), saving costs and enabling flexibility in the production

process. The original drive for development was an improvement in post-paintability, forming and lubrication properties of chromium (III) passivations. During the R&D trajectory, the company discovered that at high coating weights, it could also meet the TOC requirements of major steel manufacturers with one and the same product. Next step was overcoming the contradiction in required properties. Somewhere, these had to be balanced, for example, weldability versus mechanical protection.

Currently, a production facility would need different products to apply passivation or TOC. PrimeCoat® Z838-4P changes the game. PrimeCoat® enables one post-treatment for passivation and TOC. Metallic coated steels are treated by passivation for temporary corrosion resistance or a TOC for additional corrosion protection and to facilitate dry forming operations.

Passivation is often applied in spray/flood squeeze applications with low peak metal temperature while TOCs are often applied in more sophisticated roller coat systems like chemcoaters, and a high peak metal temperature is required. PrimeCoat® Z838-4P provides the properties of passivation and TOC on metallic coated steels like EG, HDG, ZA, AZ, GA, AS. The only parameter to be changed is the coating weight! See Table 1. PrimeCoat® Z838-4P can be applied with both application systems spray/squeeze and chemcoater, and a low PMT(>40°C) is sufficient for drying.

Table 1: Application field based on Coating Weight in mg Cr/m²

PrimeCoat Z838-4P		Coating weight mg Cr/m ²	Application field	Forming properties		Welding	Lubrication	Paint & Adhesive bonding
Metal type	Z			AZ	Z/AZ			
Z = Zinc AZ = Galvalume/ Aluzinc	5	Passivation	stamping and forming with oils and emulsions					
	10					✓		✓
	15					✓		
	20						✓	
	30							
	40			TOC	Dry roll forming			
	60	✓					✓	
	80							
	100							
	120							

Intensive comparison studies have shown that PrimeCoat® Z838-4P outperforms (see Table 2) the current commonly available chromium (III) passivations of major global chemical suppliers. The novel aspect lies in the fact that post-paintability and forming (lower punch force during forming operations, increased blank holder force) properties are significantly improved. See Table 3. This allows customers of steel companies to have less tool pollution, less zinc flaking, and more efficiency in

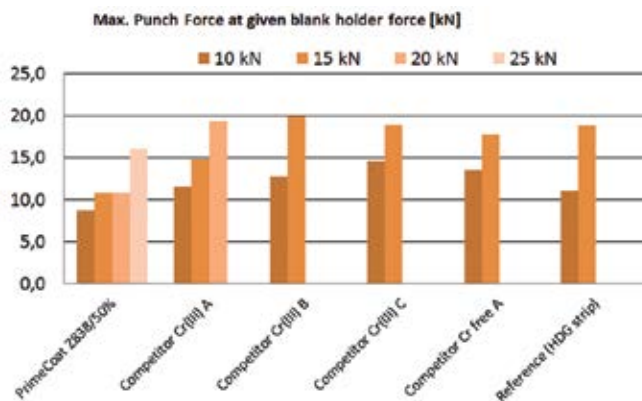
press operations. Another aspect is that due to increased forming properties, the engineering possibilities of steel costumers are widened. Products can be formed that could not be formed before.

Table 2: ASTM B117 Salt Spray test results

Neutral Salt Spray test ASTM B117		
	Zinc-coated steel (Z)	Galvalume (AZ)
mg Cr/m ²	Time to max. 5% white rust	Time to max. 5% white rust
20 - 30	96 - 168 hrs	-
30 - 50	168 - 336 hrs	>500 hrs
50 - 100	336 - 500 hrs	>750 hrs
Requirement	> 96 hrs	>750 hrs

Humidity 40°C @ 99% relative humidity 1000 hrs		
	Zinc-coated steel (Z)	Galvalume (AZ)
mg Cr/m ²	Time to max. 5% white rust	Time to max. 5% white rust
20 - 30	pass	-
30 - 50	pass	pass
50 - 100	pass	pass

Table 3: Forming properties



Market research on TOC properties concludes that with PrimeCoat® Z838-4P, a lower dry coating weight is needed to obtain the desired TOC properties in comparison with commonly available resin-based TOC’s. PrimeCoat® Z838-4P, therefore, has all characteristics to become the new market standard for

chromium (III) when looking at quality, improved processing and savings on process costs.

“PrimeCoat® Z838-4P is already used by key players around the globe.”

To summarise the value proposition of PrimeCoat® Z838-4P:

- REACH and ROHS compliant
- Water-based functional coating, chromium (III) basis
- Free of chromium (VI), fluorides and VOC’s
- A relatively cheap Thin Organic Coating alternative
- Customers can easily and rapidly change from passivation to TOC
- Cost savings in: Chemical storage, cleaning/rinsing, energy consumption (low PMT)

Staying ahead

Apart from its unique products, AD International distinguishes itself through its close cooperation with customers. Good examples are the recent cooperation with TATA Steel Europe on the PrimeLube treatment where due to co-creation, a new unique product was developed that benefits the automotive industry. In short, this product facilitates the manufacturing of stamped components by minimising known issues in stamping and joining. PLT is a mill-applied surface treatment that reduces tool pollution and galling during stamping and improves the quality of the adhesive bonds, while leaving other processes like spot welding and cleaning unaffected.

With these strong partnerships, AD International can not only develop new products but also redesign the production process in which it participates. Such collaborative investment pays off in the form of better relations, better products and a better price. ■

SUBSCRIBE NOW!

SUBSCRIPTION OFFER
A GLOBAL PUBLICATION ON STEEL & HEAVY ENGINEERING



**FOR ONLY
INR 10,800/-
YEARLY**



Enquiry: contact@isrinfomedia.in

"Together we make the difference"



ROHS, REACH Compliance Coil Coating Technology

Polymers, Defoamers,
Cleaners, Inhibitors,
Flux, Phosphating, Passivation.

Passivation, TOC, Pre-Treatments,
Primelube, Cleaners &
High performance additives.

AREA OF APPLICATION OF OUR PRODUCTS

STEEL SEGMENT

ALUMINIUM



C-202, 2ND FLOOR, "VELPULA IRIS"
KANNUR POST, BANGALORE, KARNATAKA
INDIA- 562149

PH : +91 8431234303, +91 8431234304

E MAIL : sales@flowchar.com

: contact@flowchar.com

WEB : WWW.FLOWCHAR.COM