



No. 734 | JUNE

# Bossard News

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## EDITORIAL



### Dear customers,

The summer solstice is just a few days away. At the end of June, we will already be looking back at the first half of the year, and the results are expected to be largely positive. The signs still point to further growth following the summer holidays. Supporting our forecast are the purchasing manager indices, which are mostly well over the 50-point mark.

However, there are still major concerns and unknowns associated with the war in Ukraine. Fittingly, the motto for the World Economic Forum – which got underway in Davos on 23 May – is “History at a turning point”. If we look at current economic and political developments, it’s not hard to see some worrying dependencies. That includes the fragility of global supply chains and the vulnerability of international transport routes, including capacities. Our purchasing teams are currently pushing themselves to the limit to ensure optimal security of supply for our customers.

Sustainability and environmentally responsible business have long been key issues for Bossard. The installation of a heat pump in the technology and logistics center in our Zug headquarters in 2011 is just one of many examples. We can save over 70,000 liters of heating oil each year by activating 360 ground probes, reducing annual CO2 emissions by 184 metric tons.

We’re proud to consider ourselves one of the leading companies in the industry when it comes to engineering in fastening technology. With our “Expert Walk” we analyze production lines and assembly workstations together with our customers. The potential reductions in cost that come to light when processes are viewed and analyzed from the point of view of our experts are always amazing.

You can read the success story of the strategic cooperation between Komax and Bossard, titled “For greater sustainability and higher productivity”. Our partnership extends well beyond the delivery of a wide range of products and the use of our “Industry 4.0” logistics solutions. For example: optimized order volumes and delivery cycles help to massively reduce the consumption of packaging material and CO2 emissions.

And, for some time now, the entire Bossard catalog has also been available in digital form. Here, too, we are consistently pursuing the fight against waste by completely replacing the print version with the e-shop.

Rail is considered the safest and most environmentally friendly means of transport in the world. It’s amazing where you’ll find Bossard fastening technology.

Greater efficiency and sustainability with the Internet of Things (IoT). Marvel at the fascinating success story of our partnership with the company Germans Boada.

Enjoy the emotional images of EVZ’s title win and find out about REACH and the ban on chromium VI for corrosion protection layers.

The only thing left is for me to wish you all the best, as ever, and may sanity and peace return wherever war prevails in the world.

Thank you for your valued trust in us!

**PETER KAMMÜLLER**

**General Manager, Bossard Switzerland**

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*We are wherever you are.*



Online

You can find the PDF edition of Bossard News online at:  
[www.bossard.com](http://www.bossard.com)



“Our goal is to make the Bossard Group a climate neutral company.”

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### Reduced Footprint



We use the Reduced Footprint focus topic to sum up all of Bossard's efforts to reduce the impact that our business activities have on the environment. We are pursuing a holistic management approach that takes into account not only the effects of our core business, but also any consequences in the upstream and downstream value chain. The long-term goal is clear: we want to make the Bossard Group a climate-neutral company. So that we can systematically and efficiently reduce any negative impact our company has on the environment, we have compiled and are currently evaluating all the relevant environmental data on the business units.

### Empowered People



Our employees are the driving force behind Bossard's success. Their physical and mental well-being in the workplace is one of our top priorities. All employees should feel equally valued and supported for their diversity and be able to achieve their full potential in our company without suffering any discrimination. Bossard is investing in its workforce and aims to attract the most talented individuals. To this end, we offer exciting training and further development opportunities, not to mention attractive additional company benefits, too. We have made our work models more flexible, not least because of our experience during the COVID-19 pandemic. We want to promote this regardless of the current situation to enable our employees to benefit from mobile and agile work opportunities.

### Fair Partnership



The Fair Partnership focus topic centers on Bossard's integrity and reputation. Firstly, we promote and protect both these attributes at Group level by adhering to the principles set out in our new Code of Conduct. Secondly, we need to ensure integrity with regard to our supplier network. And, last but not least, our social commitment at the various sites also helps to consolidate our reputation as a fair and reliable partner.



ENGINEERING

**Assembly**

**Technology Expert**

## PUTTING YOUR ASSEMBLY LINE UNDER THE MICROSCOPE

# Considering the assembly line in its entirety with the Expert Walk service

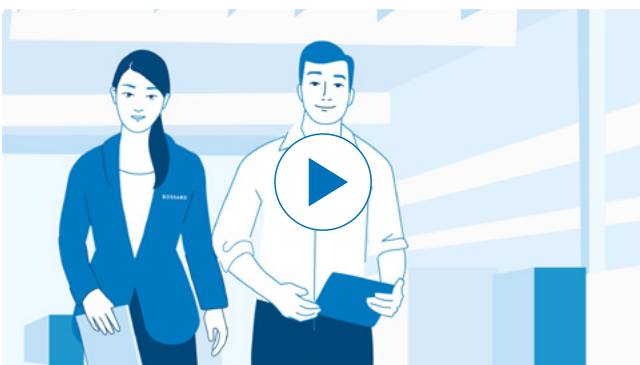
**At Bossard, we know that the perfect product starts with an ideal manufacturing process, which is why we take a very close look at your production facilities. By analyzing your assembly workstations and production lines in detail, we help you to optimize the assembly process and fully exploit hidden potential.**

### Taking a holistic view

The Expert Walk service is one of our six services aimed at helping our customers develop new products and providing the smartest solutions to fastening technology challenges.

### How the Expert Walk works

The Expert Walk always follows a set structure. Our engineers analyze the fasteners and tools you use and determine how you can make your operations leaner and smarter. But what are the steps involved in a complete Expert Walk? The first step includes a systematic analysis of the entire production line on site. The assembly technology is examined, including not only the fasteners, but also the assembly processes and the tools used. The inspection is rounded off by conducting an integrated cost analysis based on the TCO principle so we can quantify potential cost savings.



Gain an insight by watching the “Expert Walk – How does it work?” explanatory video

In the second step, the analysis is followed by verification of potential technical improvements. To this end, specific proposals are drawn up based on both new and proven solutions. All the observations are recorded in a detailed technical report that is presented together with the analysis results and our proposals. Provision of the physical samples rounds off step two.

The third and final stage focuses on implementation. A detailed design description and documentation of the new assembly solution are the key components of the implementation plan. We then assist the development team throughout the entire implementation process, before finally evaluating the implemented measures in the last step. The final implementation evaluation takes place in the form of a training session held on the customer’s site so we can guarantee maximum output.

**Are you also wondering where there’s still hidden potential in your production processes? Visit our website to find out more: [www.bossard.com](http://www.bossard.com)**

### Video: Expert Walk – How does it work?

Scan the QR code and find out in less than three minutes what’s involved in Bossard’s Expert Walk service in our animated video.

**(English only)**

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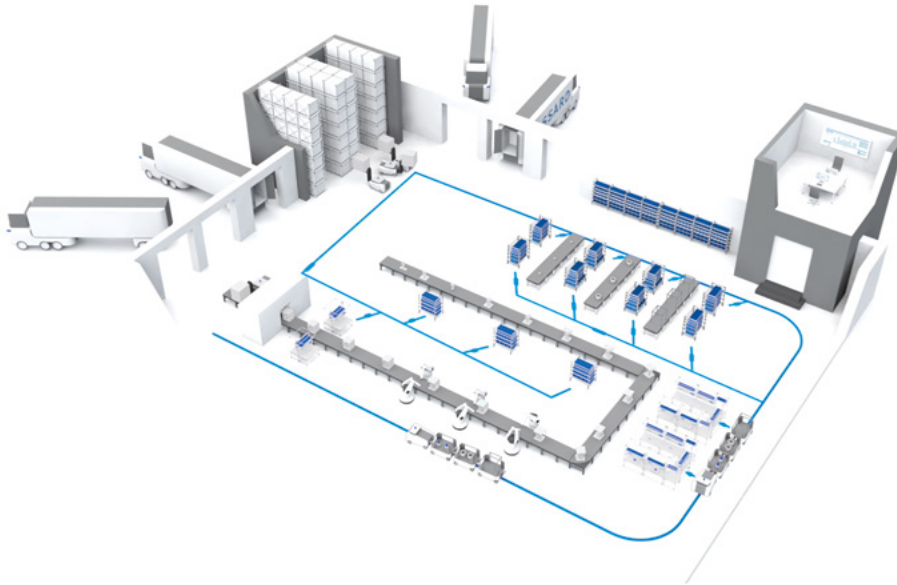


# Smart Factory Logistics



BOSSARD AND KOMAX

## For greater sustainability and increased productivity



Bossard has been Komax's strategic partner for industrial fastening and assembly technology for two decades now. Both companies are accepting of their responsibility toward the environment and future generations, and are creating long-term added value through their cooperative relationship.

**Bossard Service is helping to cut CO<sub>2</sub> emissions**  
It's impossible to imagine Komax's procurement process now without Bossard's Smart Factory Logistics (SFL). One way that SFL ensures reliable B- and C-parts supply is by integrating the company into our large supplier network.

*Optimized order quantities and delivery cycles help to cut the consumption of packaging materials.*

Consolidating shipments and transport routes ultimately helps to reduce fuel consumption. By consolidating deliveries, Komax was able to cut its CO<sub>2</sub> emissions between November 2020 and October 2021 by 24%, or around 290 kg CO<sub>2</sub>.



### **Efficiency for the last mile**

The market leader in automated wire processing is also making the most of SFL's capabilities for its Last Mile Management operations. Particularly efficient and paperless setup and refilling instructions at the assembly workstations are at the heart of this solution.

At Komax's headquarters in Dierikon, the "last mile" begins at the company's own central warehouse, leading directly to the production lines' assembly workstations. During this process, all fastener deliveries are distributed directly to the individual floors by the internal distribution system. The fully automated intralogistics system allows employees to focus on refilling the handling boxes in the main warehouse, while the floor logistics specialists take care of equipping the assembly workstations. What's more, the assembly fitters are constantly kept in the loop regarding the individual parts' order status, increasing process reliability and transparency. To this end, over 3,200 SmartLabels (digital displays) are linked to Last Mile Management, resulting in increased productivity, shorter routes and fewer queries.

Experience has shown that these are all factors that promote staff satisfaction.

There is potential for the system to be put to even wider use, and the number of SmartLabels installed is expected to rise to as many as 10,000 in the coming years.

### **Lifelong learning in the factory of the future**

In Dierikon, with Smart Factory Assembly (SFA) from Bossard the foundation has been laid for the digital transformation of manual assembly. The associated benefits for Komax are obvious: processes are paperless, the assembly process is safer, all the production steps are traceable and the strain employees experience in their work is demonstrably eased.

***Komax claims SFL is also improving security of supply.***



Komax is also cooperating with Bossard's Expert Education Service to provide further training in fastening and assembly technology, with the aim of giving employees more control over their personal responsibility and individual professional development.

An independent external partner calculated the CO<sub>2</sub> savings using data that the Bossard Group exported from the internal supply chain platform, which provides an all-encompassing overview of sites, items, orders and deliveries. The external consultant made assumptions in individual areas that we could not verify yet with facts and figures in the year under review.

**6 kg CO<sub>2</sub>**  
**(equating to**  
**a 290 kg reduction**  
**in CO<sub>2</sub> emissions**  
**in total)**  
**were saved per**  
**delivery.**  
**That's equivalent**  
**to the emissions**  
**released by a**  
**gasoline-engine**  
**car during**  
**a 860 km trip.**

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PRODUCTS

# Product Solutions

## THE NEW BOSSARD RANGE OVERVIEW

# Get to the product you're looking for in just three clicks

**Bossard's complete catalog has gone digital. Links within the document and to the Bossard E-Shop make the new range overview a user-friendly and efficient search and find tool.**

Edition 729 of Bossard News contained a report on how we had revised our product structure and replaced the existing catalog groups with the product categories you can now find on our website and in the E-Shop.

You can also find these product categories in the new range overview. If that weren't enough, we have developed a modern alternative to accommodate the fact that our product range is growing faster than we could present the innovations in the classic catalog format. The solution is a combination of a product overview in the printer-friendly A4 format, supplemented with interactive elements and a link to the Bossard E-Shop.

When you open our digital catalog on your PC, cell phone or tablet (you can find the link below), clicking on one of the product category tiles (pages 2–3) or a keyword in the index (pages 4–6) will take you directly to the corresponding sub-page. The headings and description texts on the detail pages are linked too. Clicking again will take you to the Bossard E-Shop, where you will find the current range with all the available designs. Clicking the mouse one third and final time allows you to select the product you are looking for, taking you to your destination.

And the best part is that the Bossard E-Shop is always up to date. Even if product designs change, the range overview still works without any restrictions. What's more, the Bossard website remembers your country and language selection, so you're always linked to your local E-Shop, for example from the German product overview, no matter whether you're based in Switzerland, Germany or Austria. Just try it out for yourself!



### To open the catalog,

- please click on the cover image on the left,
- scan the QR code with your cell phone,
- or visit our website at:

[www.bossard.com](http://www.bossard.com)

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## RAIL VEHICLES MARKET SEGMENT

# Smart solutions for the railway industry

It is considered the safest and most environmentally friendly means of motorized transportation<sup>1</sup>, moving millions of metric tons of freight and countless passengers worldwide. Railways are absolutely essential for efficiently and reliably transporting goods and passengers in an environmentally friendly manner in many countries around the world – and the trend of using the railway is continuing unabated worldwide<sup>2</sup>.

Bossard has been a reliable supplier and partner to leading railway manufacturers for many years now. Among other things, our customers appreciate our wide range of fastening technology products that are immediately available from Bossard's stock, the high delivery reliability, and the extensive and profound engineering expertise that we bring together under one roof.

We present our expertise in this key industry segment in the "Smart solutions for the railway sector" brochure. On 20 pages, we highlight the individual vehicle components involved in railway construction, the associated challenges and proven solutions from Bossard. Alternatively, simply visit our website: [www.bossard.com](http://www.bossard.com)

### Supply units



### Railcar body



### Truck



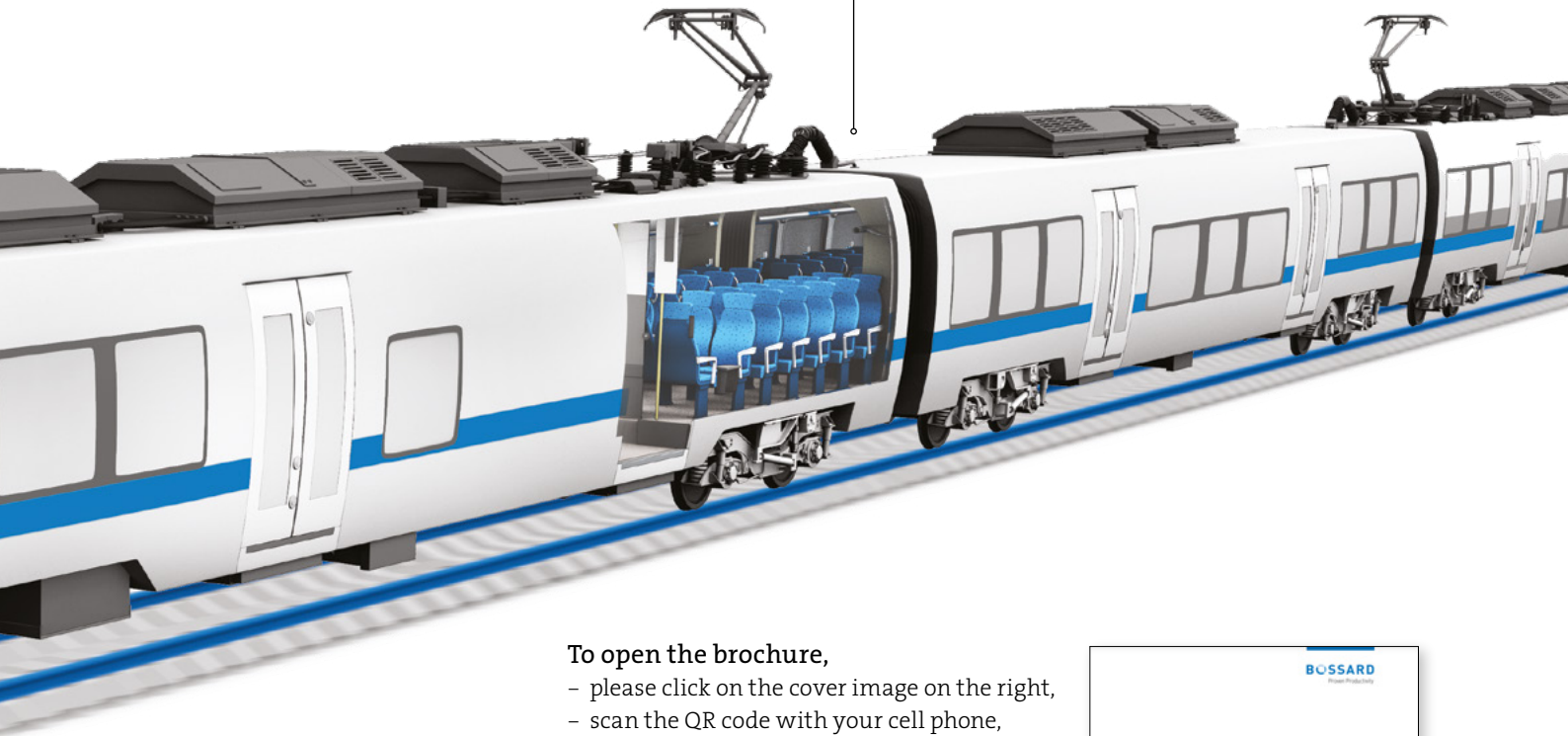
<sup>1</sup>Source: <https://www.allianz-pro-schiene.de/themen/>

<sup>2</sup>Source: <https://de.statista.com/statistik/daten/studie/28044/umfrage/weltweites-marktwachstum-im-schiennenverkehr/>

## Energy supply



## Interior



To open the brochure,

- please click on the cover image on the right,
- scan the QR code with your cell phone,
- or visit our website at [www.bossard.com](http://www.bossard.com)

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GERMANS BOADA

## Enhancing efficiency and strengthening sustainability with the Internet of Things (IoT)







**Germans Boada is a leading family-owned manufacturer of construction tools. It was established in 1951 with the aim of developing, manufacturing and selling special tools and products that are must-haves in construction professionals' everyday toolkits.**

For more than half a century, Germans Boada has always strived to be a technology leader in its field.

#### **How the cooperative relationship between Germans Boada and Bossard began**

Germans Boada had set itself the goal of making its production operations more efficient. Environmental protection became an increasingly pressing issue too. These circumstances ultimately led to Germans Boada and Bossard concluding a cooperative agreement. At the end of 2016, the Germans Boada plant purchased C-parts from two suppliers with two different logistics centers (within a radius of less than 100 km). Parts for the production line were delivered on a weekly or fortnightly basis. The lack of control over inventory, parts management and parts logistics led to inefficiencies and clutter in the warehouse.

The purchased parts were very large, making internal goods transport and storage difficult. Many employees' time was taken up with labeling the inventory just to keep track of it.

#### **Greater sustainability thanks to Smart Factory Logistics**

Germans Boada turned to Bossard to make more efficient use of the plant's resources. Bossard prepared a Smart Factory Logistics quote that was tailored to both the needs and the nature of the company. The IoT-based Smart Factory Logistics system provides a better overview of parts inventory, and in doing so optimizes warehouse management.

*The cooperative relationship with Bossard has proven to be an important driver of innovation, productivity and sustainability for the company.*

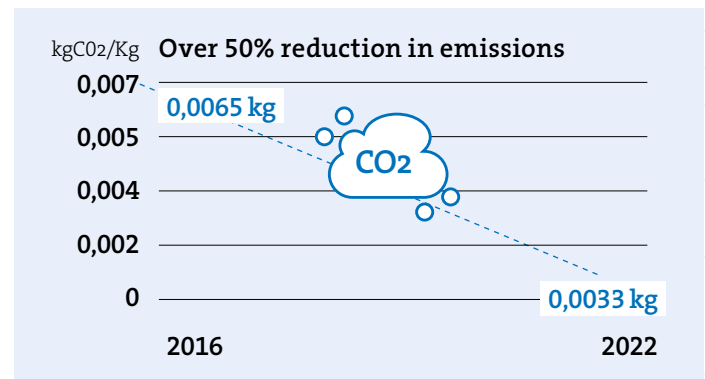


Germans Boada introduced Smart Factory Logistics in its plant in 2017. Parts are now delivered weekly in the quantities needed for each production run. Internal processes have been automated too. The system enables automatic ordering, easing the strain on administrative staff. What's more, the plant can now make better use of the available space in the warehouse, reducing the workload for plant personnel.

Germans Boada recently studied the new logistics system's environmental track record and calculated the impact of C-parts deliveries. The company used the amount of CO<sub>2</sub> released into the atmosphere (i.e. the carbon footprint before and after Bossard's IoT system was introduced) as its indicator.

Comparing the CO<sub>2</sub> emissions calculated in 2016 before the Smart Factory Logistics solution was introduced (0.0065 kg CO<sub>2</sub>/kg) with the footprint for the following two years revealed that emissions dropped by more than 50% when the system went operational (< 0.0033 kg CO<sub>2</sub>/kg).

The substantially lower amount of CO<sub>2</sub> released is due in part to the annual technological improvements in the vehicle mix, but also to improved resource management, which optimizes vehicle loading and reduces empty runs.



In absolute terms, optimizing transport logistics with Bossard's IoT system has stopped 1.6 metric tons of CO<sub>2</sub> from being released into the atmosphere over the past five years.

**Over 50% reduction in CO<sub>2</sub> emissions per kg of goods transported**

The reduced resource requirements are directly reflected in the environmental track record. Since Germans Boada's production plant is now operating more efficiently, emissions have decreased too.

## Optimized warehouse and material inventory management has:

- significantly improved the carbon footprint for C-parts deliveries.
- enhanced the efficiency of resource management and production productivity.

*“Bossard has helped us improve our environmental track record. Thanks to Smart Factory Logistics, we use our resources more efficiently – and enhanced efficiency translates into greater sustainability. This is fantastic news for both our operating results and the planet.”*

*Adrià Fàbrega | Corporate Quality Manager at Germans Boada*

2022 SWISS CHAMPIONS

We'd like to sincerely congratulate our long-standing partner on winning the National League



CHAMPIONS 2022



## BAN ON HEXAVALENT CHROMIUM FOR ANTI-CORROSION COATINGS

# Zinc-plated, black chromated fastening elements will soon no longer be available

**EU directives prohibit the use of passivation coatings containing hexavalent chromium from September 21, 2024. [Read more about the legislation's impact and possible alternatives here.](#)**

### **Alternatives to coatings containing black hexavalent chromium**

Fortunately, there are enough black coatings that are free from hexavalent chromium, so changing over to another option is technically possible without any problems in most cases. Alternatives include black passivated and sealed zinc-iron or black passivated zinc-nickel with or without sealing. Depending on the screw diameter and drive, zinc flake coatings that were not electrolytically plated with a black top coat may also be a potential solution, especially if there is a risk of hydrogen embrittlement.

As with any product substitute, we recommend examining their requirements, matching them to the new product capabilities and validating them through trials. Often, it is the black finish or anti-corrosion coating that needs to be checked. The alternative coatings do not increase costs in every case.

### **Our recommendation**

It remains to be seen how long it will continue to be worthwhile for chemical manufacturers to offer products containing hexavalent chromium, for which demand is gradually decreasing. It isn't difficult to imagine that the industry will end the production of anti-corrosion coatings containing hexavalent chromium even before the statutory deadline expires in September 2024.

This is why you shouldn't wait any longer and test and check alternatives right now. Otherwise, bottlenecks may occur due to the current long delivery times. So we recommend that you address this issue now, assess alternative coatings and prepare for the changeover.

### **Consulting**

Bossard's specialists will be happy to answer any questions you might have about substitute coatings, switching to other surface coatings and their corrosion resistance, costs, etc.



Comparing zinc-plated black chromate containing hexavalent chromium on the left and black passivate that is free from hexavalent chromium on the right.

## Legislation outlining the ban on hexavalent chromium

Hexavalent chromium is a chemical substance that is mainly used in surface treatments, in the production of top or conversion coatings containing hexavalent chromium (“chromates”) to increase corrosion protection or to create visually appealing surfaces.

The July 2002 edition of Bossard News reported on the EU End-of-Life Vehicles Directive 2000/53/EC and its implications for the first time. This directive banned surfaces containing hexavalent chromium on new vehicles and came into force on July 1, 2003. In 2013, hexavalent chromium was included in the REACH Authorization List due to its hazardous substance properties.

Since September 21, 2017, further use of hexavalent chromium has been banned without approval by the European Commission (for a charge). However, the European Commission granted exemptions for various applications to produce top and conversion coatings containing hexavalent chromium on zinc, aluminum, magnesium, copper and silver. These licenses also expire on September 21, 2024, including in Switzerland. It is unlikely that they will be extended.



## Factoring in the consequences

In the meantime, substitutes for chromates containing hexavalent chromium are available in the form of passivates that are free from hexavalent chromium and are designed to protect electrodeposited zinc coatings (e.g. blue zinc-plated, thick layer passivated zinc-plated and yellow zinc-plated coatings) from corrosion.

However, there are still systems containing hexavalent chromium for specific applications or requirements (e.g. in terms of appearance, hardness, abrasion resistance, color stability, gloss level) for which switching from hexavalent to trivalent chromium electrolytes is challenging and chromium-free alternatives have yet to be established.

This includes the likes of zinc plating with a black chromate coating containing hexavalent chromium, a surface process that has been tried and tested for decades. The new black passivate for zinc-plated surfaces that is free from hexavalent chromium is inferior to the performance that the old variant containing hexavalent chromium delivered in terms of appearance, abrasion resistance and corrosion protection (see our image on the previous page).

We therefore recommend that you address this issue early on and explore suitable alternatives.

If you have any questions, please get in touch with your surface systems contact at Bossard:  
[Jean Laragne, jean.laragne@bossard.com](mailto:Jean.Laragne@bossard.com)

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