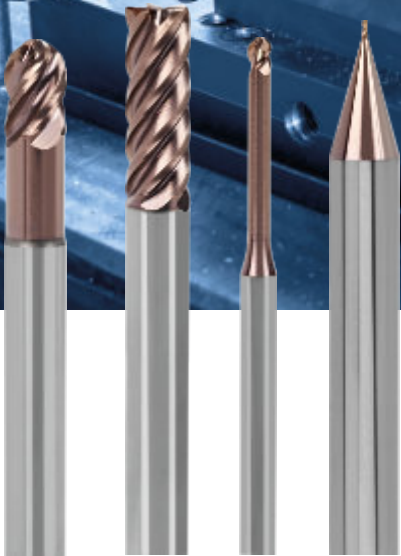


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SteelCon® – THE GAME CHANGER



HARD MACHINING AND MORE:
Best performance when machining
a wide range of materials

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ONLY WITH PREMIUM COATINGS

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NEW MARKETS**

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“One **INNOVATION** promotes the next! For us at CemeCon, every **SUCCESS STORY** like that of our customer **ZECHA** is both a confirmation and an incentive. And it is a pleasure for us to see the contribution we make to this with our **MULTILAYER DIAMOND COATINGS.**”

Dr. Toni Leyendecker, CEO of CemeCon AG
(read more on pages 18 and 19)

“Especially for medium-sized **TOOL MANUFACTURERS**, our coating technology is a **SUSTAINABLE INVESTMENT** to secure competitive advantages, as for example in India: With a new **HiPIMS TURNKEY PROJECT**, Accusharp Cutting Tools Pvt. Ltd. in Pune underlines with HiPIMS its role as **INNOVATION LEADER**. Word of this success has also spread in **SOUTHEAST ASIA**, and we have been able to convince new **PARTNERS** of our **PREMIUM COATINGS.**”

Manish Adwani, Managing Director of CemeCon India
(read more on pages 16 and 17)



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ZECHA wins innovation award for
diamond-coated micro tools.
Congratulations!

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With state-of-the-art machinery, Alsameca ensures the high quality of precision tools.

ALSAMECA SPECIAL TOOLS ONLY WITH PREMIUM COATINGS

DIAMOND COATINGS ON CUTTING INSERTS

Automotive, aerospace, medical technology – high-tech industries depend on first-class precision tools for the process-reliable, high-precision and, last but not least, economical production of their components from materials that are often difficult to machine. Alsameca from the French town of Lutterbach (Haut-Rhin) has made a name for itself in these industries with high-quality cutting tools. When it comes to finding solutions for special application, the company works closely with the coating expert CemeCon – for example in the field of diamond-coated cutting inserts.

Anyone who enters Alsameca's production facility in Lutterbach is immediately struck by the ultra-modern machinery, in addition to the cleanliness and obvious love of order. Automated grinding centers, robot-controlled test benches, optimized production management – the manufacturer of precision tools and

regrinding service spares no expense or effort to ensure the quality of its products and at the same time a rapid responsiveness. The goal is to "increase our productivity, gain market share and remain competitive," says Pascal Guichard, founder and director of the ASP group, which includes Alsameca. To achieve this,

he is constantly investing in automation and digital technologies.

Alsameca has been grinding precision tools for 42 years and has already designed many sophisticated solutions for a wide range of industries. Thus, the experts know exactly how important the interaction of

substrate, cutting-edge geometry and coating is. That is why ASP also has its own PVD coating expertise in-house and uses it successfully mainly for standard tools. For precision tools for special applications, when first-class premium coatings are required, Alsameca additionally relies on the experience of CemeCon.

MACHINING LIGHTWEIGHT MATERIALS WITH DIAMOND-COATED CUTTING INSERTS

Alsameca cutting inserts score with exceptional cutting-edge geometries, multi blade configuration and high feed rates. "With their nanocrystalline, extremely smooth and hard surfaces, our CCDia® coatings are superior to other coating solutions in terms of performance, quality and precision and contribute significantly to even higher efficiency. Especially on cutting inserts for machining CFRP and GFRP, graphite, non-ferrous metals or plastics,

Alsameca / ASP-Group



Alsameca, founded 42 years ago, produces around 140,000 precision tools annually in Lutterbach (France) with 19 employees. State-of-the-art machinery with loading robots for all grinding machines and automated measuring technology ensures the high quality standards and response times. The French company is certified as an official partner of the manufacturer Kennametal in France.

In 2008, Alsameca joined the ASP (Affûtage Service Performance) group with a total of 49 employees. ASP is known for its versatility in grinding and in the production of cutting tools and wear parts (solid carbide, brazed carbide or high-speed steel). To secure competitive advantages, the group is constantly investing in new technologies.

www.asp-affutage.fr

CCDia® coatings open up enormous potentials," says Jean Cariolini, Sales Europe at CemeCon. The powerful combination of Alsameca's cutting inserts and CemeCon's diamond coatings achieves excellent results

when machining lightweight materials for the automotive and aerospace industries.

Matching all the parameters in a joint engineering approach of CemeCon

"With CemeCon's
DIAMOND COATINGS, for example,
we have been able to significantly
increase the **PERFORMANCE**
of our **CUTTING INSERTS** –
both in terms of **TOOL LIFE** and
MACHINING QUALITY!"

Stéphane Kalt, Director of Alsameca



and Alsameca made this happen. The experts coordinate the coating precisely with the requirements and application in a close dialogue. Substrate, geometry and coating all together form an optimal machining solution for the respective application – perfect for Alsameca’s sophisticated tool concepts and special applications.

SERVICE LIFE
SIGNIFICANTLY INCREASED

Stéphane Kalt, Director of Alsameca: “Whether dedicated diamond coatings for our cutting inserts or high-performance HiPIMS coatings for special applications – we have already worked with CemeCon in many successful engineering projects and are always very satis-



Thanks to automated measurement technology, Alsameca can meet the tight tolerances of the complex tools for special applications without compromise.

fied with the results and with the speed of implementation. With CemeCon’s diamond coatings, for example, we have been able to

significantly increase the performance of our cutting inserts – both in terms of tool life and machining quality.”



Whether shank tools or cutting inserts – diamond coatings from CemeCon open up potentials in the machining of composites, graphite and non-ferrous metals.





Daniel Figueiredo, Marlene Macedo and Cristina Fernandes (from left) refreshed their knowledge of the CC800® HiPIMS at CemeCon in order to be able to exploit all possibilities in their own production when coating precision tools.

SUBSTRATE, GEOMETRY AND HiPIMS COATING FIT

PALBIT WINS NEW MARKETS THANKS TO A NEW GENERATION OF COATINGS

“The results we are achieving with the unparalleled PVD coatings on our tools are fantastic and have convinced us so much that we have invested in an additional PVD system.” Jorge Ferreira, CEO at Palbit, is enthusiastic. Whether standard or customized tooling solutions – thanks to the high vertical range of manufacture from powder production to insert pressing and the production of tool bodies and tool holders, Palbit is always developing and manufacturing new high-performance tools for demanding cutting tasks. With the new technology from CemeCon, the Portuguese tool manufacturer has once again been able to significantly increase the performance of its cutting tools.

Tool and mold making, energy and oil industry, automotive, aerospace, medical technology and mechanical engineering – Palbit S.A. in Albergaria-a-Velha, Portugal, creates high-precision tooling solutions for milling, turning, drilling, threading, grooving and parting for a wide range of industries. To meet the de-

mands for lower costs, machinability of new materials and the best surface finishes, Palbit relies on state-of-the-art technology, such as CemeCon’s HiPIMS technology.

First-class coating technology has long been an essential part of Palbit’s expertise. Daniel Figueiredo,

Executive Board Member, R&D, Product Engineering, Quality and Technology Development: “We have been working closely with CemeCon for many years and have always been very satisfied with their technology and service. That is why we have also invested in an additional CC800® HiPIMS coating system,



“All our tests have clearly shown it. **HiPIMS** can do more. We are fully **CONVINCED OF THE TECHNOLOGY** and are sure that we will develop many more **HIGH-PERFORMANCE TOOLS** with it.”

The Palbit Team (from left): Daniel Figueiredo, Executive Board Member; Marlene Macedo, Employee for Coating Responsible; and Cristina Fernandes, R&D Manager.

which was installed at our site at the end of 2021.”

The advantages of this technology speak for themselves: “The HiPIMS coatings combine a variety of positive properties. They are extremely smooth, very hard and also tough. All this combined with excellent adhesion and dense morphology. Even high coating thicknesses can be achieved without problems thanks to low residual stress and active residual stress management. At the same time, a uniform layer thickness distribution also ensures

optimum wear protection. This combination is only possible with HiPIMS,” says Christine Hammer, Sales Manager at CemeCon.

OVERCOME CHALLENGES OF MACHINING SUPERALLOYS WITH HiPIMS

Especially with materials that are difficult to machine, such as titanium or superalloys, HiPIMS technology gives Palbit the decisive edge. “Engine components, turbines or structural aircraft components, orthopedic screws or bone

fasteners – these high-temperature materials can be found in numerous applications. A completely new field of application opens to anyone who can successfully machine them. We offer our customers the appropriate high-performance tools for this purpose. With HiPIMS technology, we have been able to improve the results even further,” says Daniel Figueiredo.

A good example are the cutting inserts with new chipbreaker geometry, which Palbit has developed especially for heat-resistant superalloys. In combination with Palbit’s new PVD grade PHH, they achieve outstanding performance, for example when turning Inconel® 625 alloy ($v_c = 85$ m/min, $f_n = 0.12$ mm/rev, $a_p = 0.5$ mm, emulsion-cooled). The Palbit cutting inserts reached the maximum wear of 0.4 mm after 20 min of machining. The comparison tool was already worn after about 12 min. The bottom line is that this means 60 percent longer tool life!

ENDURING EVEN DURING HIGH-FEED MILLING

High hardness and oxidation resistance is advantageous for hard machining and super alloys. It also ensures excellent surface qualities and a highly efficient machining of stainless steel. For example, Palbit also uses the PHH PVD coating in its new solution for high-feed milling – TetraFeed 16320 XNKU. The num-

Palbit



Palbit was founded in 1916 and is a producer of carbide and ultra-carbide tools. The company

bers speak for themselves: when milling AlSi316 ($v_c = 120$ m/min, $f_z = 1.0$ mm/t, $a_p = 0.5$ mm, $a_e = 24$ mm) without cooling lubricant, the new Palbit cutting inserts could be used for 45 min per cutting edge up to maximum wear. The comparison tool with a conventional PVD coating only 32 min per cutting edge. This means 40 percent longer tool life!

So that users can also benefit from the advantages of HiPIMS technology when doing high-feed milling of alloyed and unalloyed steels, high-speed steel and cast iron, Palbit also offers the TetraFeed 16320 XNKU cutting inserts with a coating tailored to this application. And here, too, the coating has the edge over conventional PVD coatings. Palbit cutting inserts with the new PHP coating achieve a significant increase in productivity: when dry machining tool steel (20CrMnNiMo, 1.2738) with a hardness of 32–36 HRC ($v_c = 200$ m/min, $f_z = 0.65$ mm/t, $a_p = 1.0$ mm, $a_e = 24$ mm), the maximum possible operating time is extended from 60 min per cutting edge with conventionally coated cutting inserts to 80 min per cutting edge with the Palbit solution. That is a 33 percent increase in tool life!

"All our tests have clearly shown it. HiPIMS can do more. We are fully convinced of the technology and are sure that we will develop many more high-performance tools with it," says Daniel Figueiredo.

Branca/Albergaria-a-Velha in Portugal is a symbol of high-performance tools. The more than 100 years of experience enable Palbit to be a one-stop shop for complete tooling solutions. The experts offer their customers a comprehensive product portfolio for machining: With state-of-the-art machinery and qualified employees, Palbit creates high-precision carbide and ultra-hard cutting tooling solutions for milling, turning, drilling, threading, grooving and parting of machining operations. Presently selling worldwide through a network of distributors, agents and representation offices, with a team of highly qualified technicians. The modern plant with the latest state-of-art technology allows us to respond to the highest level of client's requirements.

www.palbit.pt

"The results we are achieving with the unparalleled **PVD COATINGS** on our **TOOLS** are fantastic and have convinced us so much that we have **INVESTED** in an **ADDITIONAL PVD SYSTEM.**"

Jorge Ferreira, CEO of Palbit



SteelCon® – THE GAME CHANGER

Best performance when machining a wide range of materials

When machining hardened steels beyond 50 HRC, precision tools with SteelCon® coatings achieve top performance. Originally developed for hard machining, it has gradually become apparent that is not all SteelCon® can do: stainless steels, titanium, quenched and tempered steels and much more.

“When we developed SteelCon®, our focus was on hard materials. In particular, we wanted to provide the tool and mold making industry with the best solution for machining injection molds made of hardened steels. And it worked brilliantly – both dry and wet,” says Manfred Weigand, Product Manager Round Tools at CemeCon. The performance has convinced numerous CemeCon customers, and SteelCon® coatings are now widely used.

Encouraged by the positive cutting results, some tool manufacturers have taken a new approach and are also using the SteelCon®-coated tools for machining other

materials – the results are astonishing: SteelCon® coatings not only perform excellently in hardened steels but also bring top performance in stainless steels, nickel-based alloys, titanium and even “normal” steels.

Manfred Weigand: “Inconel® 718, 1.4301 (chrome-nickel steel), TiA6V4 (titanium alloy), 16MnCr (case-hardened steel), 42CrMo (quenched and tempered steel), 1.2379 (cold-work steel) – our HiPIMS coating material is indeed a multi-talent! We had suspected it, but the results exceeded our expectations.”

Material:
1.4028: 52 HRC

Tool:
Ball nose end mill,
Ø 6 mm

$v_c = 207 \text{ m/min}$

$n = 11,000 \text{ rpm}$

$a_p = 0.18 \text{ mm}$

$a_e = 0.18 \text{ mm}$

Cooling: **Emulsion**



Material:
1.2379: 62 HRC

Tool:
Ball nose end mill,
Ø 6 mm

$v_c = 120 \text{ m/min}$

$n = 6,366 \text{ rpm}$

$f = 0.13 \text{ mm}$

$a_p = 0.1 \text{ mm}$

$a_e = 0.1 \text{ mm}$

Cooling: **Air**





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Why does SteelCon® work so well in the different materials?

Due to its composition, the HiPIMS coating material has enormous thermal stability. Furthermore, SteelCon® provides excellent thermal insulation and hardly lets any heat into the tool but dissipates it via the chip. This is particularly advantageous for materials that are themselves very poor heat conductors, such as stainless steel, nickel-based alloys and titanium. Without SteelCon®, the high temperatures that inevitably arise during machining of the hard materials would damage

the tool and embrittle the carbide. In addition, SteelCon® is highly wear-resistant, partly due to its high hardness and toughness, and partly thanks to its excellent adhesion. This combination of properties results in significantly longer tool life and excellent machining results.

In order for SteelCon® to achieve its excellent results, the development experts adjust many aspects: In addition to the coating material, these are the coating thickness, tolerances, pretreatment and finishing. In engineering, the process steps are then sensibly combined and adapted to the tool. The result is a customized coating specification that is perfectly matched to the application.

Currently, SteelCon® coatings are primarily used on milling cutters, but the first positive results have also been seen on drills and other cutting tools. And: Soon, the HiPIMS coating material will also be available for cutting inserts.

Material: 1.2379: 62 HRC

Tool:
Solid carbide end mill,
Ø 6 mm

$v_c = 170$ m/min

$f_z = 0.11$ mm

$a_e = 0.05$ mm

$a_p = 0.05$ mm

Cooling: Air



- Thermal stability
- Thermal isolation
- Hardness and toughness
- Excellent adhesion

Our experts are just a phone call away!

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ECONOMIC
ROUGHING OPERATIONS
WITH FerroCon®Quadro

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12 μm COATING THICKNESS FOR MAXIMUM WEAR VOLUME

Wherever thick chips fall, for example in the heavy-duty machining of rails, switches, pipes and crankshafts, as well as in the rotary peeling of cast iron and ferrous materials, high-performance cutting inserts with long tool lives and good performance are an absolute must. This is the only way to achieve the required maximum wear volume. Especially in such roughing operations, every μm more is decisive for the economic efficiency of the process. For these demanding applications, FerroCon®Quadro offers a coating thickness of 12 μm .

Roughing operations are used in numerous applications, such as rail maintenance: Rail tracks are subjected to the highest loads on a daily basis, for example due to pressure and shear forces during high

line utilization, high-speed trains and heavy freight traffic. To ensure safe operation and maintain the infrastructure for as long as possible, maintenance and repair work on the track and especially on rails and

switches is essential. Milling operations are one way of repairing even major damage and restoring rails to almost their new condition. "Here, profile tools with maximum working speed and machining quality are



required, usually equipped with a very large number of cutting inserts. Higher coating thicknesses significantly extend their tool life – the key to economic efficiency. The correlation in such applications is almost linear – and that’s where FerroCon®Quadro comes into play,” says Inka Harrand, Product Manager Cutting Inserts at CemeCon.

High coating thicknesses for cutting inserts have always been a specialty of CemeCon. 6 µm on cutting inserts has been standard for years. HiPIMS technology has once again significantly expanded the possibilities here. FerroCon®Quadro, the HiPIMS coating material especially for cutting inserts, surpasses all previous PVD coatings with its 12 µm coating thickness. Such coating thicknesses were previously only possible with the CVD process.

UNIQUE ADVANTAGES WITH CEMECON

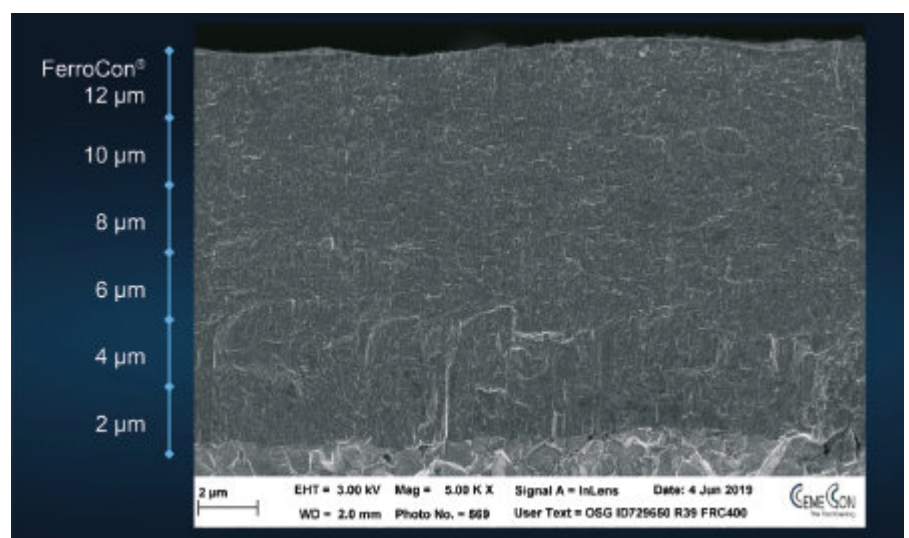
“This also opens up new possibilities for the machinist in terms of delivery times: CVD coatings are only available to a very limited extent on the market in the coating service and are therefore often associated with long delivery times. Thanks in no small part to our coating center in Würselen, which is the largest in the world, we coat the inserts within a short time – and always in the same reproducible quality. In addition, FerroCon®Quadro and HiPIMS are environmentally friendly technologies that do not require toxic or explosive gases. The process temperatures of around 500 degrees during

coating also protect the substrate and prevent the carbide from becoming brittle,” adds Inka Harrand.

But why are coating thicknesses possible with CemeCon HiPIMS technology that were previously unthinkable? Thanks to the synchronization of the HiPIMS cathode pulses with the substrate table – a unique CemeCon feature – the residual stresses of the coating can be actively managed and kept at a low level. Very different from the tensile stresses associated with any CVD technology, which makes the processes unsuitable for milling tools. The low residual stresses enables such high coating thicknesses, as with FerroCon®Quadro at 12 µm.

Tests have shown that, thanks to the outstanding technology, even coating thicknesses of up to 25 µm can be realized with good adhesion.

Furthermore, HiPIMS increases the variety, quality and performance of the coatings: Compared to CVD coatings, significantly more elements can be used in the composition. HiPIMS coatings are very smooth, yet hard and tough at the same time. They have excellent adhesion and, thanks to the uniform distribution of coating thicknesses, provide optimum wear protection for the tool: This means that rails and switches can be quickly and economically reused and are safe for their heavy duty use.



FerroCon®Quadro with 12 µm coating thickness – the advantage for roughing operations

TAKING TOOLS TO THE NEXT LEVEL WITH HiPIMS

If you want to produce outstanding precision tools that are ahead of the competition, you need top-class technology in all facets of tool manufacturing – not least in coating. HiPIMS (High Power Impulse Magnetron Sputtering) from CemeCon is the best coating technology available on the market. The CC800® HiPIMS combines features that previously required multiple coating processes or even additional equipment. In the USA, the team at CemeCon, Inc. in Horseheads, NY supports tool manufacturers in multiple ways. Whether it be through coating service in their 40,000 square foot coating center or by providing technical assistance to customers who use a turnkey solution in their own production – CemeCon, Inc. is prepared to answer all questions concerning coatings and coating technology.

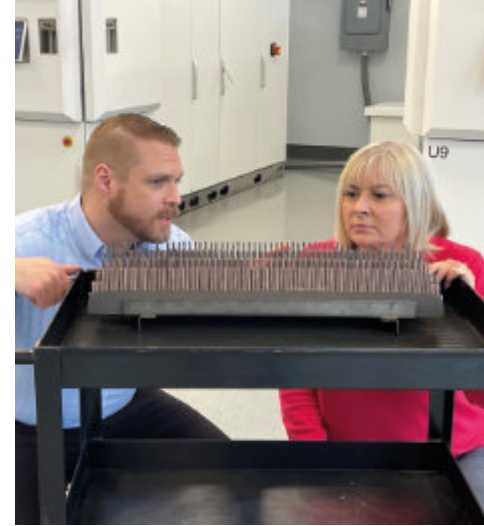
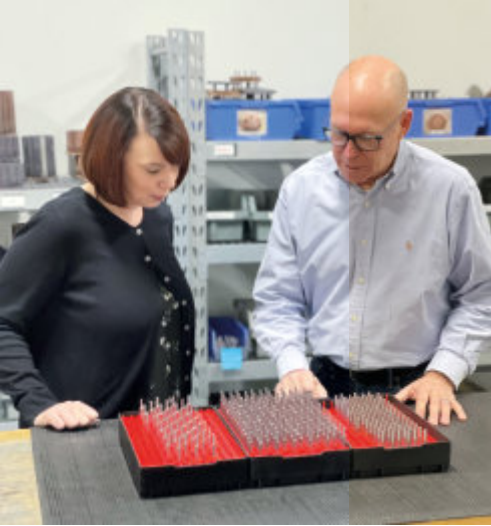
“Many tool manufacturers in the USA are familiar with our coating service and greatly value the coatings we produce. We are now working to increase the awareness that we also offer turnkey coating systems. Our systems do more than just offer the possibility of in-house

coating production, they deliver premium coatings using a technology that is future-proof. The CC800® HiPIMS is the fastest, most flexible and most economical production system on the market. This makes it the perfect platform for developing customer-specific pro-

cesses. Tool manufacturers can use it to differentiate their products in the market and gain a competitive edge. We are ready to work with tool manufacturers that are looking to take their tools to the next level,” said Ryan Lake, Sales Manager at CemeCon, Inc.



The CemeCon Inc. sales team of Ryan Lake, Pete West, Autumn Carson, David Darling, Melissa Smith, Calvin Avery (left to right) and Chet Lewis (not on the photo) consult with customers to help them find the best solution for them.



Because CemeCon Inc. offers its own coating service in Horseheads, the team knows the technology intimately and can provide the best possible support to technology customers.

Anyone who wants to see the advantages of HiPIMS for themselves have the opportunity to do so at the coating center in Horseheads. There, the team from CemeCon, Inc. will demonstrate the possibilities offered by the technology and how easy it is to handle during a live batch in the in-house coating production. If the tool manufacturer then decides to use a CC800® HiPIMS in their own production, they receive a complete package consisting of substrate pretreatment, coating system and all the necessary other peripherals – plus the full made in the USA service package. From its daily practice, the

CemeCon team knows the most diverse processes and workflows down to the smallest detail and can support every self-coater in the best possible way.

“To make it as easy as possible for the customer to start their own coating production, we train their employees in our coating center and familiarize them with the intricacies of the CC800® HiPIMS. Even after the system has been installed, our experienced technicians at CemeCon, Inc. are on hand to answer any questions they may have about coating technology,” promises Lake.



Kameron Waxman (right) and Eli Roberts (left) from CemeCon Inc.'s technical support department assist customers with any questions they may have about the plant technology.

Advantages of HiPIMS technology

HiPIMS technology opens up new markets through better coatings and offers future security through maximum flexibility. The spectrum of what is possible is enormous: from high-performance coatings with a layer thickness of 1 µm for micro tools to wear-resistant insert coatings with a layer thickness of up to 12 µm. HiPIMS coatings are extremely smooth, hard and tough at the same time. The morphol-

ogy is exceptionally dense with the best adhesion and very low residual compressive stresses. In addition, almost any element of the periodic table can be used and combined as a coating component. This creates options for an unlimited variety of structures and composition! And almost all substrates can be coated - from HSS and carbide to CBN and ceramics. What's more, the CC800® HiPIMS is a real

workhorse: deposition rates of up to 2 µm/h and large holding capacities of up to 1,800 shank tools or 5,000 inserts ensure high productivity. Changeover to other coating materials or adaptation to changed tool quantities is possible within a short time. The system runs fully automatically with low maintenance requirements. No other system offers this combination!

THE TIGER LEAP WITH HiPIMS IN SOUTHEAST ASIA

In India and Southeast Asia, the machining sector is growing steadily, and high-performance precision tools are in hot demand. With CemeCon's coating technology, more and more tool manufacturers are gaining competitive advantages there.

Thailand, Indonesia, Singapore, Malaysia, Vietnam – Southeast Asia, home to more than 650 million people, is developing rapidly. "Alongside India, the ASEAN countries are among the most promising markets. The economic upswing there is

tangible. Now with the end of the pandemic, I see great opportunities," says Manish Adwani, Managing Director of the newly founded Indian CemeCon subsidiary, who has been serving CemeCon customers in India for a long time in close coopera-

tion with Würselen. Manish Adwani: "Especially for medium-sized tool manufacturers, our coating technology is a sustainable investment to secure competitive advantages, as for example in India: With a new HiPIMS Turnkey Project, Accusharp

CemeCon India

After intensive planning, CemeCon is pleased to announce the new establishment of the Indian subsidiary CemeCon Coating Pvt. Ltd. in Pune. The new managing director is Manish Adwani, a long-standing CemeCon sales partner and profound expert of the Indian and Southeast Asian market. In addition to sales, the service team supports customers in the region online and also on-site. In addition, the Indian branch has an extensive spare parts warehouse. With the foundation of CemeCon Coating Pvt. Ltd. the coating experts take into account the enormous importance of the region.

CemeCon Coating Pvt. Ltd.

Manish Adwani

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Manish Adwani,
Managing Director of
CemeCon Coating Pvt. Ltd.



Cutting Tools Pvt. Ltd. in Pune underlines with HiPIMS its role as innovation leader. Word of this success has also spread in Southeast Asia, and we have been able to convince new partners of our premium coatings."

FROM TRAINING TO INSTALLATION EVERYTHING ONLINE

Always and everywhere online – in this region of the world in particular is all digitally networked. For example, the entire commissioning of the coating systems at WPP Engineering, Thailand and Geswinn Indonesia was also carried out online. Manish Adwani: "The intensive on-site training at the world's largest coating center in Würselen is an essential part of our quality and service promise. We fulfill this online just as we do with face-to-face training. For this, the CemeCon team threw themselves into the new task with

passion and presented fascinating new solutions." During the online installation, CemeCon's experts guide the customer technicians live via video streaming step by step through the process and explain all the details of the technology. In principle, this is similar to an online live batch: There, CemeCon shows tool manufacturers in a 1-to-1 dialog what is possible today in the coating of precision tools and how easy it is to handle the systems.

"These two examples prove it: We are keeping our promise of quality and service in these extraordinary times. Our team has the service gene and always finds a way to the customer. We offer support at any time for questions about CemeCon coating technology with the full range of possibilities, via online diagnostics, with our service hotline or during a visit," adds Manish Adwani.



CemeCon quality in India and Southeast Asia

Accusharp Cutting Tools Pvt. Ltd., based in Pune, India, develops and manufactures special cutting tools for a wide range of industries. With the CC800[®] HiPIMS installed in November 2021, the tool manufacturer can significantly increase the performance of its tools. For steel machining, FerroCon[®] supplies the appropriate coating material for excellent tools "Make in India". After all, the world's largest steel manufacturer is based in India.

In Thailand, CemeCon recently installed the first CC800[®] HiPIMS coating system – at **WPP Engineering Co., Ltd.** WPP is deeply rooted in the tool making world there since the company is offering tool grinding machines from a premium manufacturer. With the HiPIMS coating technology, customers in Thailand and Vietnam now receive complete solutions for the production of cutting tools from a single source.

In Indonesia – the country with the fourth largest population worldwide – **CV Geswinn Indonesia** has successfully launched a coating service near the capital Jakarta with a newly installed CemeCon coating line. Geswinn is an expert in tooling solutions and sells cutting tools from well-known manufacturers. In addition, the company offers its own special tools and re-sharpened tools in original quality with CemeCon coatings.

AWARDED!

Our customer ZECHA wins the 2021 Baden-Württemberg State Innovation Award with a new type of diamond-coated micro-precision tool.



At the award ceremony for the Innovation Award of the State of Baden-Württemberg (Photo: Ministry of Economics, Labor and Tourism Baden-Württemberg)

The State Innovation Award – the Dr. Rudolf Eberle Award – was one of the first prizes to be awarded for innovation in Germany. It has been honoring unconventional ideas for innovative products, processes or services since 1985. It is awarded to medium-sized companies from industry, the skilled trades and technological services.

WE CONGRATULATE AND SAY:
RIGHTLY DESERVED!

With the IGUANA tool family, ZECHA is revolutionizing the market for di-

amond tools in the micro range. The high-end tools are multi-flute-cutters in the small diameter range with extremely sharp cutting edges and highly wear-resistant diamond coating.

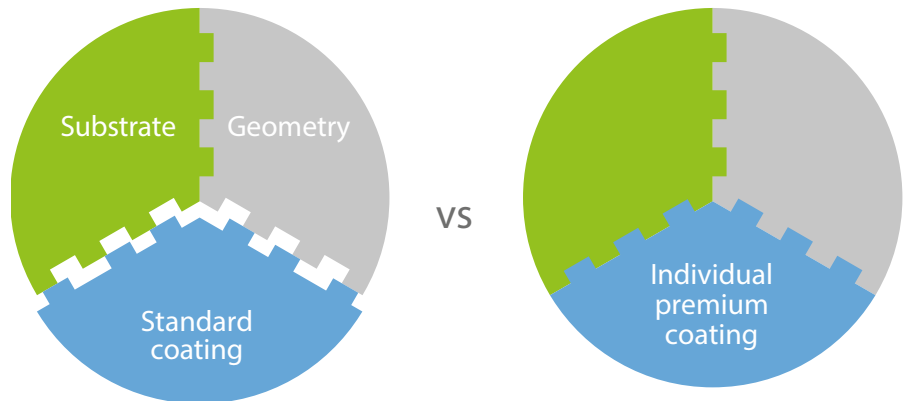
Our customer is now adding another component to the successful formula of “substrate + geometry + coating = perfect precision tool”: the subsequent processing of the coating by laser!

The prerequisite for this is the patented multilayer technology. By

combining different diamond structures, it ensures optimum adhesion and at the same time stops possible cracking that can occur during demanding use of the tool – the perfect wear protection. The high thermal conductivity of the diamond coating ensures rapid heat dissipation. This is enormously important when machining temperature-sensitive materials such as CFRP and GFRP and enables a higher machining speed during cutting. The diamond coating has been perfectly tailored to the geometry and material properties of ZECHA tools and to the machin-

ing of abrasive materials. ZECHA uses carbides specially suited for this purpose.

When machining highly abrasive materials, non-ferrous metals or copper in a wide variety of industries, many a tool reaches its limits. The innovative ZECHA laser machining ($R = 1 \mu\text{m}$) of the diamond coating has resulted in tools that shine above all due to their extreme sharpness, multi-flute design, miniaturization, extreme wear resistance, very long tool life and thus very high process reliability.



The formula for success: substrate + geometry + individual premium coating = perfect precision tool

“One innovation promotes the next! For us at CemeCon, every success story like that of our customer ZECHA is both a confirmation and an incentive. And it is a pleasure for

us to see the contribution we make to this with our multilayer diamond coatings,” says a delighted Dr. Toni Leyendecker, CEO of CemeCon AG.

ZECHA



ZECHA Hartmetall-Werkzeugfabrikation GmbH has been one of the pioneers and trendsetters in the field of micro cutting, punching and forming tools for almost 60 years. Originating from the watch industry, the uncompromising focus on miniature tools with the highest precision is evident.

www.zecha.de



With the IGUANA tool family, ZECHA is revolutionizing the market for diamond tools in the micro range. (Photo: ZECHA)

“Whether dedicated diamond coatings for our cutting inserts or high-performance HiPIMS COATINGS for SPECIAL APPLICATIONS – we have already worked with CemeCon in many SUCCESSFUL ENGINEERING PROJECTS and are always VERY SATISFIED with the results and with the speed of implementation. With CemeCon’s DIAMOND COATINGS, for example, we have been able to significantly increase the PERFORMANCE of our CUTTING INSERTS – both in terms of TOOL LIFE and MACHINING QUALITY!”



Stéphane Kalt,
Director of Alsameca

WOULD YOU LIKE TO LEARN MORE ABOUT OUR COATING TECHNOLOGY?

All contact information for our Coating Service and Coating Technology experts around the globe can be found at www.cemecon.de/en/contact.

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