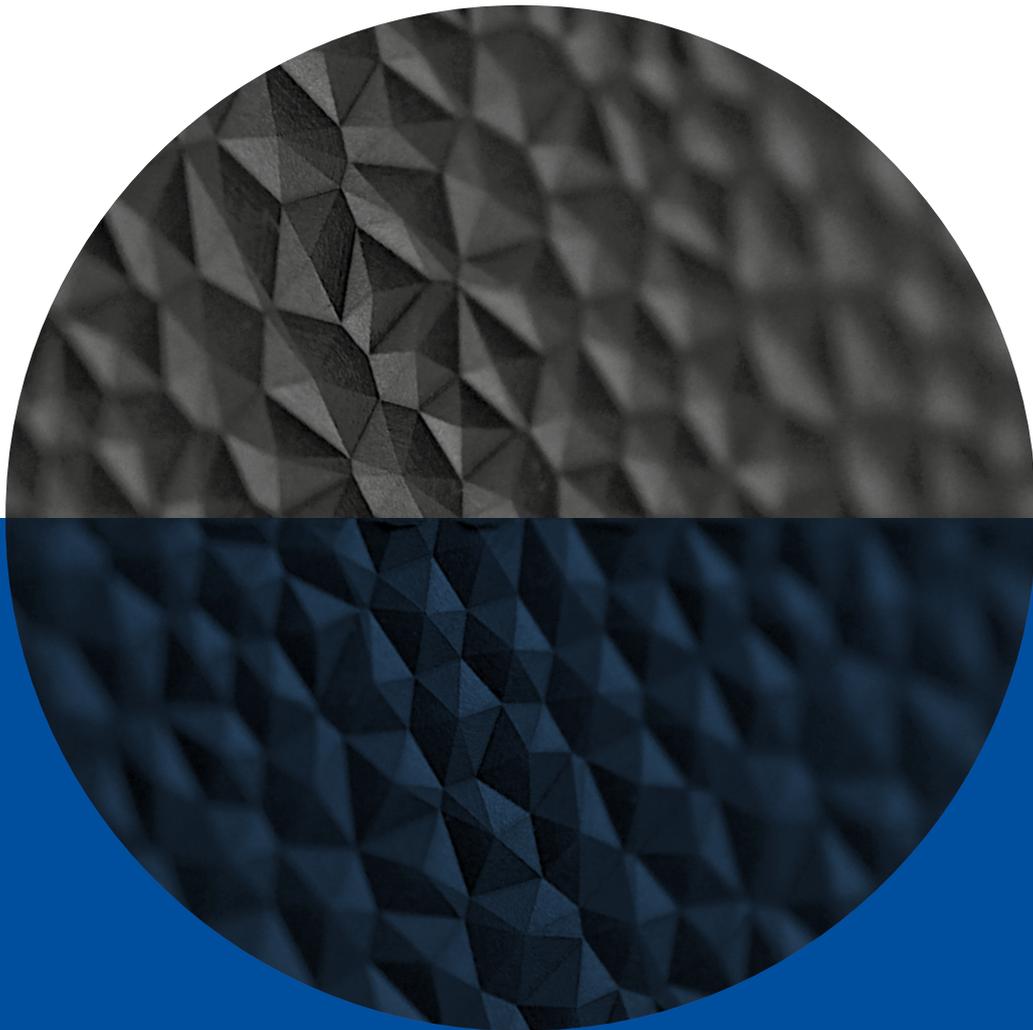


**DECORATIVE SURFACES
FOR PLASTICS**
from the initial idea to the
perfect texture

ESCHMANNTEXTURES



Get inspired

HISTORY

The perfect texture for every surface

TOUCH STIMULATES EMOTIONS

Since its founding in 1989, **Eschmann Textures** has had one objective in mind: to develop surface textures which make each product a very special experience – in terms of how they look and feel.

A product's look can communicate aesthetics and integrity. Emotions, on the other hand, are conveyed by how a product feels. The sense of touch is the most fundamental of our senses. Rather than just seeing our environment, we can experience it far closer thanks to our sense of touch. Haptics literally enable us to grasp our environment.

This applies to the many objects in our everyday lives that we perceive through their surface. Whether it is a coffee pot, the dashboard in a car or a cosmetics bottle. For many products which we come into contact with each day, an intelligently designed surface texture creates an emotional, perceptual experience.



ABOUT US

Surface specialist within a powerful group

HIGH PERFORMANCE METALS DIVISION OF VOESTALPINE AG

As a company of voestalpine AG and part of the voestalpine High Performance Metals Division, Eschmann Textures is firmly anchored in a high achieving organisation with strong partners.

Together, the companies in the High Performance Metals Division benefit from the unique know-how of each individual company, ensuring synergy effects and transfer of knowledge over the entire spectrum of various areas of technology.

Eschmann Textures core business is to develop and execute innovative customer solutions for decorative plastic surfaces. With more than 180 employees based at different locations in Europe and India we are a truly global business.



Here you can find more information on the brands of High Performance Metals GmbH

voestalpine

ONE STEP AHEAD.

3



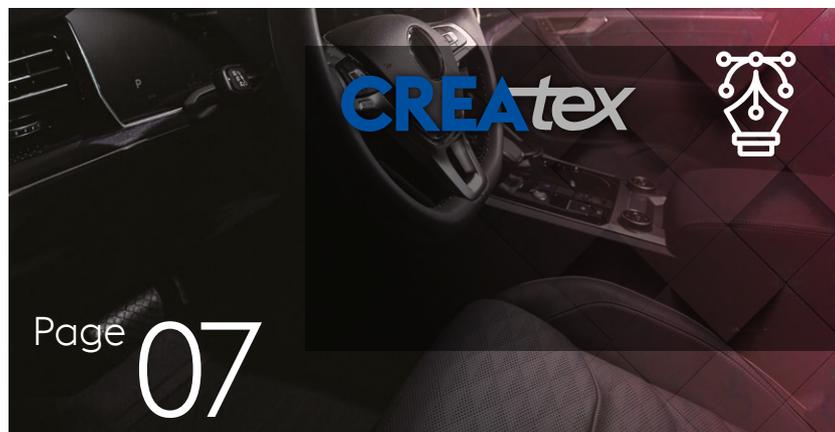
At a glance: the brands of the voestalpine High Performance Metals Division



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Advanced services from the surface design experts

TEXTURING TECHNOLOGIES BY ESCHMANN TEXTURES



- From initial concept to production feasibility
- Design studios in UK, Germany and India
- Fast and highly efficient design process
- Design and development workshops



- High definition three-dimensional texture replication
- Quick and responsive
- Wrapping new texture designs on prototype parts
- Ideal for design review



- Conventional chemical/acid etching process
- 35 years of engraving experience and craftsmanship
- Wide range of textures from simple 'stipple' structures to highly detailed surfaces
- Match VDI spark eroded finishes



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- State of the art direct laser ablation and hybrid laser process
- Manipulate geometric textures on to complex moulds
- Consistent process and high repetitive accuracy
- Highly detailed and previously unachievable designs

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- Ground breaking ceramic technology
- Innovative and sustainable processes
- Perfect texture replication
- Light weighting and cost reduction

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- Coating systems for a wide range of applications
- **G-Coat:** improve injection and moulding issues, optimise surface finish
- **CERA-mat:** gloss level adjustment
- **SCREWcoat:** cut purge and colour change costs

GLOBAL FOOTPRINT



ESCHMANN TEXTURES BRANCHS

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● 1	Germany	Eschmann Textures Int'l, GmbH Höhebusch 6, 51764 Wiehl, Germany Tel: +49 2261 / 9899 - 0
● 2	Germany	Eschmann Textures Int'l, GmbH Otto-Neumeister-Straße 17, 74196 Neuenstadt a. K., Germany Tel: +49 7139 / 9316 - 0
● 3	France	GMV Eschmann Int'l Zone artisanale sous le Vernois 39360 Viry, France Tel: +33 384 411 143
● 4	UK	GRAVUTEX Eschmann Int'l, Ltd Peakdale Road, Brookfield Industrial Estate, Glossop, Derbyshire, SK13 6LQ, United Kingdom Tel: +44 1457 867 627
● 5	Portugal	Eschmann Textura Int'l Rua 23 de Outubro, 2A 2445-573 Moita MGR, Portugal Tel: +351 244 545 360
● 6	Portugal	Eschmann Textura Int'l Rua da Boavista, 315 3720-502 Santiago de Riba UI, Oliveira de Azeméis, Portugal Tel: +351 256 609 053
● 7	India	Eschmann Textures INDIA P. Ltd Building 1, Gaodevi Industrial Complex, Opp. Sai Service, Sativali, Vasai-(E), Dist. Thane 401-202 Tel: +91 250 66 54 400
● 8	India	Eschmann Textures INDIA P. Ltd Plot No. 12. Shed No. 2, Thirukatchiyur- Sendgundaram Indl. Layout CMDA Indl. Area, Marai Malai Nagar, Chengalpattu Taluka, Kanchipuram, Tamilnadu, 603204 Tel: +91 - 4427 464507
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“ We offer our portfolio worldwide in cooperation with market leaders in Asia and the US - benefit from an outstanding network in the world of surface design. ”



Design expertise

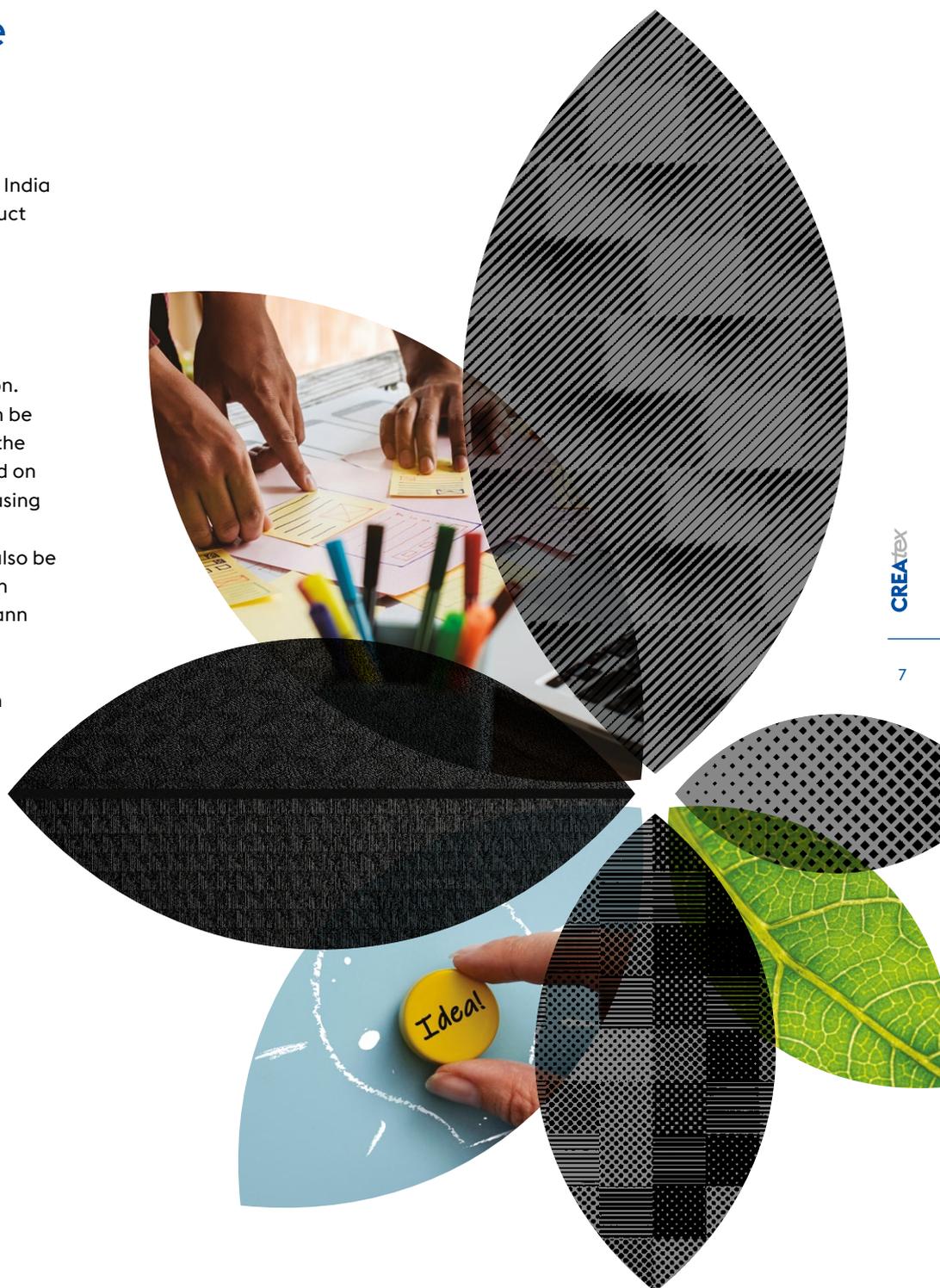
GIVING EXPRESSION TO IDEAS

AT A GLANCE

- Turning ideas into reality
- Design studios in UK, Germany and India
- From initial design concept to product feasibility
- Fully integrated service

Expressing your ideas is our motivation. Aesthetic and functional surfaces can be developed unbelievably quickly with the latest graphics processing and plotted on plastics with a wide range of colours using 3D print technology. Surface textures developed in a 3D print process can also be transferred to components with a high degree of reproducibility with Eschmann Textures prototype modelling.

This leads to a significant reduction in the decision-making process for our customers. The right technology can be selected for the subsequent tool processing depending on the demands placed on tool geometry and design.





Innovative 3D printing technology for pre-visualisation

FAST DEVELOPMENTS

AT A GLANCE

- Ideal for design review, models and show cars
- The texture can be transferred in 3D printing to any material, e.g. plastic, model board and alloy
- Unique process, providing a cost-effective way of bringing together colour and texture in a single tool
- 3D textures can be applied to flexible, self-adhesive decorative carriers
- Virtually any design can be presented, even in multi-colour

We develop aesthetic and functional surfaces with cutting-edge graphics processing and can present them in plastic using 3D printing technology in a wide colour palette. Surface textures developed in a 3D printing process can also be transferred to components with a high degree of reproducibility with Eschmann Textures **PROTOTEX** prototype modelling.

For our customers this means a significant shortening of the decision-making process. Depending on the respective requirements for tool geometry and design, the appropriate technology can be selected for subsequent tool processing.



Design meets functional purpose



Plain colors DIGITEX samples

DIGItex

VISUALISING A RANGE OF DESIGNS

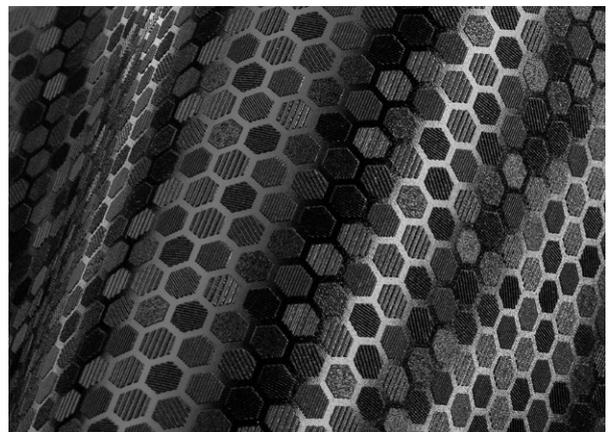
- Rapid development cycles
- Textures can be graphically designed by our design team in line with your ideas and modelled in 3D
- Cuts product development and decision-making processes substantially
- Can be painted to customer specifications, from matt to gloss, or impressive colours



DIGIflex

UNIQUE PROCESS

- Wrapping models and parts for design review or show cars
- 3D textures can be applied to flexible, self-adhesive decorative surfaces
- Particularly suitable for use in blow moulding
- Unique process offering a cost-effective way of bringing together colour and texture in one tool



“ Give expression to your ideas. ”

APPLICATIONS

- **Part wrapping** - Ideal for design review, models and show cars
- **Injection moulding** - Flexible grained sheet that can be easily replaced with different designs
- **Blow moulding** - Allow to obtain superior reproduction from the engraved texture surface on the mold



Expertise gained from decades of experience

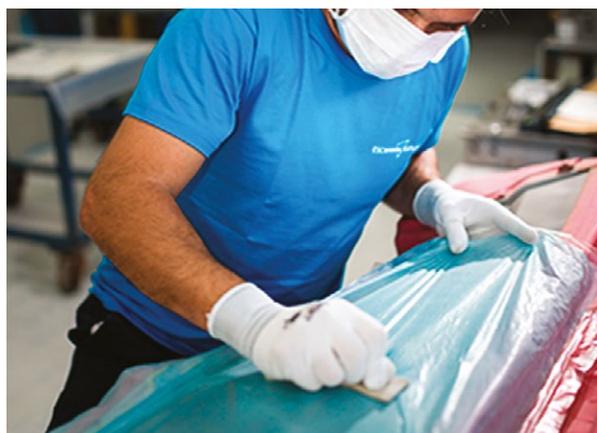
THE (HE)ART OF ENGRAVING

AT A GLANCE

- Ideal for large surfaces
- Multi-layer etchings are feasible
- Structural limits in the die must be precisely defined
- Requires polish grades of at least 320
- Production-related tolerances of up to +/- 10 µm are required
- Available worldwide

Etching technology is a traditional craftsmanship used to apply textures to metal surfaces by means of chemical reaction. This technology is used in particular for the further treatment or finishing of plastic injection moulding dies made of steel or, to a limited extent, non-ferrous metals.

Skilled craftsmanship with decades of experience. The on going development of the technology ensure that customer designs and functionality requirements are met. Our customers can select suitable surfaces from a wide range of patterns or develop individual textures based on these patterns.



Worldwide biggest 5-axis FEMTO laser machine

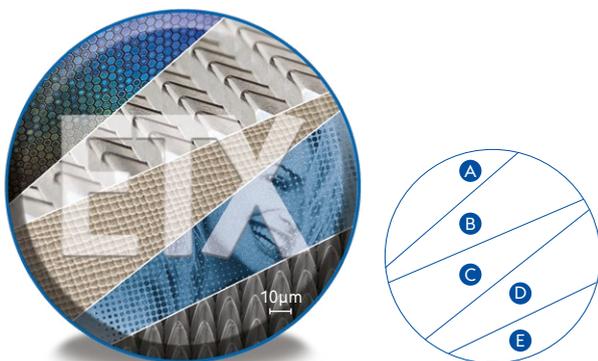
NEW HORIZONS FOR TEXTURE APPLICATIONS

AT A GLANCE

- Fully digital process chain with high repeatability
- Unlimited freedom of design
- Direct lasering of 3D textures
- Suitable for steel, aluminium and with some restrictions - for electrode materials (copper, graphite, tungsten)
- Capability for ultrafine (<1µm) hybrid morphing textures with very fine details and enables precise surface lasering
- High Precision Quality Check by GOM/Zeiss Scanning System with the possibility of Reverse Engineering

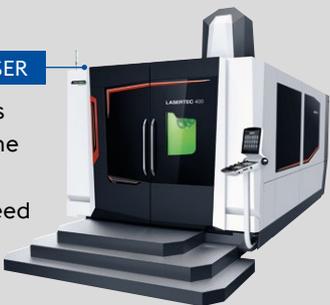
Our modern **LASERtex** studios in Germany, France, Portugal **Marinha** and **UK**, offer state of the art laser textures, from ultra-fine to prominent geometric patterns. It can also process tools with weights of up to 20 tonnes. We also offer 5-axis **LASERtex** services worldwide with carefully selected partners.

The innovative 5-axis **LASERtex** uses laser ablation where a laser beam removes layer by layer from the tool surface of a plastic injection die. This produces multi-layered surface textures, ranging from complex architectural or geometric patterns to textile, natural patterns and fine textures. This method is also suitable for manufacturing functional surfaces such as for light reflection, friction, aerodynamics, etc.



5-AXIS FEMTO LASER

The largest 5-axis FEMTO Laser in the world with high precision and speed offering new opportunities for texturing.



COMBINATION OF FEMTO & NANO

GF LS 1200 U FS Hybrid

improves your texturing performance to achieve unparalleled texturing productivity without compromising your quality. Perfect for ultrafine textures with <1µm of depth.



THE POWER OF ULTRASHORT PULSE LASER

- A** Color laser
- B** Micromachining capabilities
The new femtosecond solutions allow for sharper geometries, lower Ra levels and higher brightness. It brings the laser into the micromachining world.
- C** Endless diversity in laser materials
Applied for all kind of steel: aluminium, coatings PKD, CVD,PVD, ceramic, sapphire, glass, semiconductor, plastics, composites etc.
- D** Laser blasting capabilities
The laser blasting offers superb surface homogeneity to ensure perfect surface continuity and contouring. It gives users the ability to increase the depth perception with very shallow textures.
- E** Fine details and finest textures
With only 10µm in diameter of each pin.



Ceramic systems

SURFACE ENHANCING TECHNOLOGY

APPLICATIONS

- Ranges from one-off custom designs to small batches
- Physical foaming (MuCell)
- In-mould graining (IMG)
- Blow moulding
- Silicone moulding tools
- Pu foaming tools
- Plastic injection moulding (including polypropylene, Polyurethane etc.)

Greater design flexibility for plastic injection moulding: Eschmann Textures has an innovative technology **CERAtex** which enables different designs to be produced from the same tool. In conventional production methods the tool determines how the structure looks. Things are different with this process: By applying a heat-resistant, almost wear-free ceramic coating to the tool surface, plastic components can be produced in a very wide range of different looks. This provides you with a completely new level of flexibility that gives you an extra dimension of design creativity. **CERAtex** adds a ceramic coating to create the surface texture.

This technology enables users to enhance an almost infinite range of products by adding customised surface textures. This ceramic process facilitates true-to-original design reproduction at unbeatably short reproduction lead times. **CERAtex** can be removed at any time from the tool without leaving residues and be re-applied without the need for additional polishing, modified wall thicknesses or similar.



Hide flaws from foaming process

CERAfoam

BREAKTHROUGH FOR THERMOPLASTIC FOAM INJECTION MOULDING, LIGHTWEIGHT & UNIQUE GRAIN DESIGN

The combination of ceramic coated surfaces and unique Femto laser texturing offers high end design for foamed parts - free of foam streaks and with high freedom in part construction.

BENEFITS FROM

- Lightweight
- Reduce energy/CO₂
- Unique grain
- Sustainability



PRODUCT EXAMPLES



Solid part which designs for foaming process (e.g. Rib ratio, thinner wall thickness, etc.) shows all defects (sink marks etc.)

No sink marks formed but streak marks occur

Premium surface without defects

CERAshibo

CERAMIC TOOL COATINGS

- All surfaces can be moulded 1:1 and transferred into the smallest detail to the tool geometry
- Can be removed from the tool and re-applied with a new texture.
- Heat and wear-resistant, it processed at temperature ranges of up to 200°C
- Ideal for all standard plastic mould steels and aluminium as well as for physical foaming (MuCell)



“ Innovative lightweight construction meets design.”

The logo for COAtex, with 'COA' in blue and 'tex' in white.

Innovative coatings

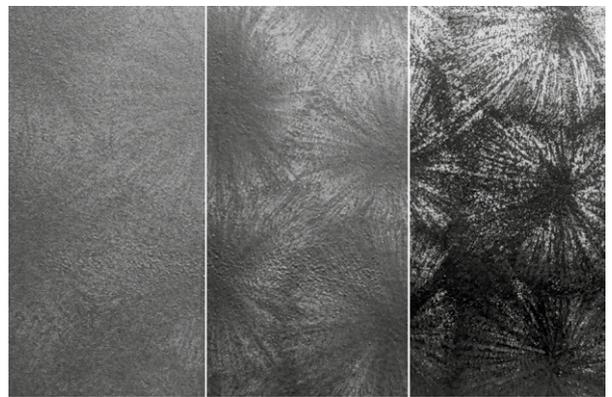
COATINGS FOR MANY AREAS OF APPLICATION

AT A GLANCE

- **G-Coat:** improve injection and moulding issues, optimise surface finish
- **CERA-mat:** gloss level adjustment
- **SCREWcoat:** cut purge and colour change costs

The quality and optics of a plastic surface are affected by many parameters in the production process. New design trends can reach their limits caused by restrictions to tools or material. This is where the coatings from Eschmann Textures come into play: Improved filling ability optimise material, substance properties in production, higher wear resistance, longer service lives and ensure a constantly high quality - to ensure that your products stay in trend.

CERAmat and **G-Coat** are flexible coating processes. Both can significantly reduce shine to a nearly lacquer-like finish without changing the surface's basic texture – flexible and a reasonable cost.



Extra matt

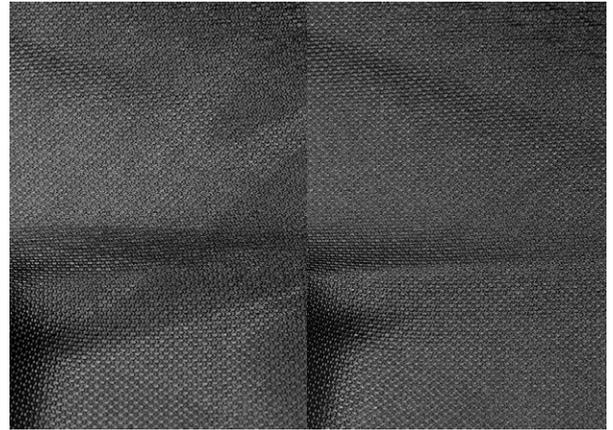
Matt

Glossy

G-coat

OPTIMISED INJECTION MOULDING PRODUCTION

- Reduces process-related problems in the production of plastics such as “tiger striping”, gloss spots or micro-ghosting
- Can be used in combination with all standard plastic moulding steels and aluminium on chemically etched and/or lasered surface textures
- Especially for PP-based plastic substrate



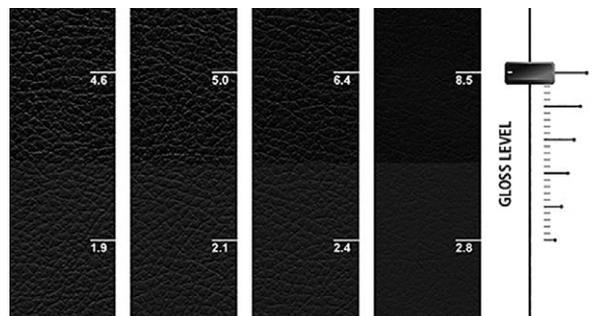
Without coating

With G-Coat

CERAmat

ELEGANCE YOU CAN SEE AND FEEL

- Flexible coating process for injection moulding applications
- Significantly reduce gloss to a nearly lacquer-like finish without changing the surface's basic texture
- Enhance or completely replace conventional gloss reduction processes
- Easy to protect from corrosion using a VCI powder



Wider range of gloss values

CERAcOAT

COST-SAVING INNOVATION

- Ceramic-based coating technology with an extended range of applications
- Suitable for textured tool contours in order to supply small batch series
- Can be handled mechanically and allows flexible change management (e.g. milling, grinding, drilling)



SCREWcoat

SYNTHETIC COATINGS

- Surface protection for plasticising screws
- Reduces carbonisation
- Improves repeatability, downtime purging and cycle time
- Time-saving when color or material needed to change
- For PP-based plastic substrate
- Polypropylene (PP) is frequently used in Automobile Industry. It is known for being durable, robust, and resistant to many external factors





Find all contact persons from our
locations on the internet at:
www.eschmanntextures.com

