

A close-up photograph of a worker's hands, wearing purple nitrile gloves and a light-colored long-sleeved shirt, reaching into a large industrial rack filled with numerous identical metal cast parts. The parts are arranged in rows and columns, and the background is filled with more of these parts, creating a sense of a large-scale manufacturing process. The lighting is bright, highlighting the metallic surfaces.

# TREATMENTS AND FINISHES

# **GIESSE** TREATMENTS AND FINISHES

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# PIONEERS IN QUALITY, INNOVATION & DESIGN

We are pioneers.

For more than 50 years, we have opened new frontiers and changed the way of conceiving and producing hardware for aluminium windows and doors.

We are part of SchlegelGiesse, the international division of Tyman plc, a global group with hardware manufacturing plants in Italy, United Kingdom, China, United States and a sales network able to serve almost every country in the world.

Our mission is to be a global partner for engineered components for the fenestration industry thanks to our full range of sealing systems and hardware solutions for doors and windows, with more than 100 registered patents.

Our core values of quality and innovation can be found in all our designs. Our focus is complete customer satisfaction through the design, manufacture and marketing of cutting-edge solutions in line with market demands, all over the world.





# TREATMENTS AND FINISHES

High performance,  
eco-friendly

The next few years will be of crucial importance for the environment, especially in relation to global warming. The major industrialized countries have set reduction targets for the use of polluting substances in industrial production. The response to such policies has focused on the search for eco-friendly materials, treatment and processes, while maintaining product quality and reliability.

Giesse R&D has led to **consolidation of the pre-treatments and treatments** employed in our products, and to the development of new **eco-sustainable finishes** which nonetheless maintain the **high standards** of the company's production. This has led to the launch of a new series of products and components which enable us to obtain qualitatively superior results, with effective wear and corrosion resistance, using non-noxious materials and treatments with a low environmental impact.

## The project

The establishment of CE certification for windows, combined with the need for products of increasingly lower environmental impact, has led Giesse to **develop and use eco-sustainable technologies** for all its products, while maintaining the high performance required by the company standard.

Indeed, although the construction industry is not presently governed by regulations as restrictive as those in the automotive industry, for example, which require that all components must guarantee extended service life, Giesse nonetheless wishes to offer future-oriented and eco-sustainable products, in observance of QID philosophy.

Excellent design and fabrication are not sufficient to obtain an outstanding product; **quality starts with the raw materials**. For this reason, Giesse searches worldwide for the best materials to provide unbeatable performance in all conditions, thus guaranteeing constant service life for all its products.



## Environmental certification

In march 2009, Giesse obtained **UNI EN ISO 14001 certification**, the standard governing the environmental aspects of all production processes, from TÜV Italia for its Budrio plant.

ISO 14001 certification is a concrete demonstration of the company's commitment to the identification, control and reduction of the environmental impact of its processes, products and services, and **attests the reliability** of its **Environmental Management System**.

The standard requires the company to set out its objectives in writing and to implement the Management System to achieve them. The standard specifies the following principal components of such a system: environmental policy; planning; actuation and operation; controls and corrective actions; management reviews.

The certification is based on Management's basic commitment to legislative conformity, continuous improvement and prevention of pollution. These activities include data collection, verification of conformity to established environmental standards and legislation, identification and evaluation of environmental issues, assignment of priorities and identification of significant environmental aspects.

On this basis, Giesse has now further optimized its consumption of natural resources and implemented measures to ensure that all suppliers and partners are aware of environmental issues by giving priority to those whose processes are positive in this regard.



Giesse's commitment has been **acknowledged and certified by TÜV Italia**, the independent certification and inspection agency operating in Italy since 1987, subsidiary of the TÜV SUD group (established in 1866), today one of the largest and most authoritative certification and inspection agencies, with 600 offices and over 13,000 employees around the world.



## Raw materials

### Aluminium

Giese uses first quality aluminium alloys with excellent workability, extruded and die-cast, for obtaining a wide range of geometrics with constant, narrow tolerances. The result is outstanding design and ergonomics.



### Zamak

Zamak's mechanical properties are outstandingly suited to parts subject to wear and required to resist mechanical deformation. It enables the fabrication of very precise, geometrically complex parts, very thin walls and robust threads, and assures constant quality in both large and small production runs.



### Brass

Brass has mechanical properties comparable to those of steel, but with unique ductility and inalterability over time. It can also be worked into a vast variety of shapes and finishes.



### Stainless steel

Giese products are designed to provide constant performance throughout their service life. This is why we make extensive use of high quality stainless steel. Mechanical strength, corrosion resistance, hygiene and ease of cleaning -all these make it the ideal material for severe environments like the seaside and chemical and industrial settings. It also suits exceptionally smooth and shiny finishes, which makes it a favourite of designers.



### Plastic polymers

Giese uses avant-garde polymers, the result of in-house research projects and collaborations with leading chemical companies.



## Pre-treatments

Surface finish is a fundamental component of Giesse product quality. This often applies to the finish of concealed components of the basis for aesthetic finishing processes. The corrosion resistance of surface finishes is decisive for the quality of the product, inasmuch as it determines its service life, even under conditions of mechanical wear. All Giesse processes pay special attention to the environment and use exclusively materials which respect the rigorous standards governing safety in the workplace and protection of the environment. In order to prepare the surface of components for final finishing, Giesse uses surface pre-treatment processes.

### **Tumbling**

All semi-finished aluminium and zamak parts are subject to tumbling before finishing. This process eliminates surfaces defects due to fabrication processes (vibratory finishing) and areas prone to rusting, and smoothes out surfaces in preparation for finish application.

### **Chrome III passivation**

All products which are used outdoors and subject to the aggressive action of urban or saline atmospheres are treated with chrome III passivation. This process improves the adherence of powder coatings and significantly increases corrosion resistance. This is achieved by chemically converting the aluminium surface with a layer based on trivalent chrome. The process does not employ hexavalent chrome and thus has a lower environmental impact than traditional products and is non-toxic. This enables conformity with environmental standards and health and safety policies.



## GS Silver Plus surface treatment

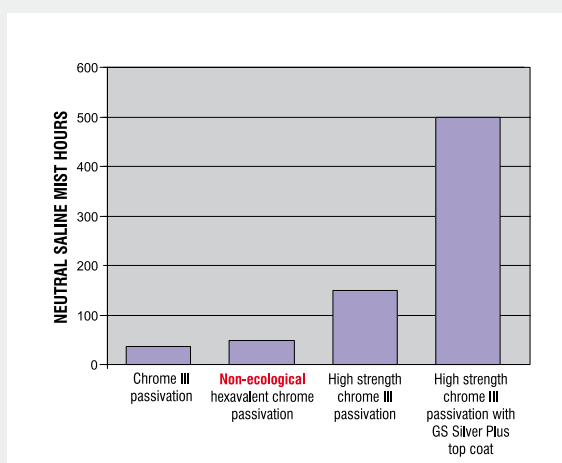
GS Silver Plus is an eco-sustainable finish for zamak whose corrosion resistance has been tested to 500 hours in saline mist. It is also available for steel components.

GS Silver Plus is a treatment designed to protect surfaces previously treated with chrome III passivation. The GS Silver Plus top coat is an innovative sealing process which obtains superior results, including improved distribution of the seal layer and elimination of accumulations in concave sections.

The protection gives the surface an active and highly effective resistance to corrosion even following thermal shock at 120°C, and has been developed in response to the need for corrosion resistance while controlling the coefficient of friction.

The GS Silver Plus top coat enables parts to be installed on window frames while improving resistance to wear and UV radiation, thus providing the best available finish combined with high resistance to corrosion. This enables our accessories to be used in the most challenging locations, with extreme, highly aggressive atmospheric conditions.

Finally, the silver colour of Silver Plus enhances the shine of the treated surfaces.



The table compares a variety of treatments used on zamak accessories with reference to resistance to saline mist in line with EN9227 and EN1670. The result refers to a component without machining operations.

## Treatment advantages

The use of high quality raw materials, combined with the surface finishes listed above, means that Giese products are Class 4 per EN 1670, in line with European standards governing window frame accessories.

Class 4 (resistance superior to 240 hours in saline mist) corresponds to exceptional corrosion resistance and suitability to use in severe climatic conditions.





## Aesthetic finishes

The resistance of aluminium and aluminium alloy parts is given by the dense layer of oxide which rapidly forms in an oxidizing environment and which, since it covers the surface, protects it against subsequent attack.

### Anodising and electrocolouring

Giesse employs cutting edge technology to anodise and colour parts with processes which provide extended lifetimes and elevated resistance to corrosion, thanks to an oxide layer of, on average, 12-13 microns.

### Coating

All Giesse products are treated and painted in-house, in an almost fully robotic system, using exclusively thermosetting powder paints which are non-toxic and non-noxious, and hence non-polluting and eco-friendly (TGIC free).

### Metallic painting

Metallic liquid paint with corrosion and mechanical resistance (grid test) in line with Giesse powder coating standards.

Test run on our products have yielded a film thickness in the range 60 to 100 microns, depending on part geometry. The polyester powder was found to comply with standards BS 64/96, BS 64/97, GSB/RAL RG631 and AAMA 603.8 regarding resistance to lime and detergents.

**Base Painting** and **Base Oxidation** are surface treatments that Giesse provides on products that will subsequently be painted or anodized.

**Base Painting** (Giesse code 005) is a passivation treatment of **chromium VI free** that keeps over time the surface characteristics suitable for subsequent painting. Base Painting provides an effective protective layer which gives to pre-treated components, once painted, **excellent corrosion resistance** and a **strong adhesion of the paint** to improve the quality of the final finish. Base Painting is ideal for both liquid and powder coating and it is compatible with all pre-treatments which provide a step of cleaning with acid attack.

**Base Oxidation** finish (Giesse code 006) is instead a tumbling treatment made to obtain the maximum smoothing component surface suitable for the subsequent anodic oxidation.



## Painted finishes chart

Thanks to the extra-thick film and dense reticulation, the powder paints are able to achieve their full potential in terms of adherence and resistance to corrosion. Powder paints can be used to create a complete range of surface finishes with varying degrees of shine, as well as an array of special effects and metallic finishes.

Best selling Giesse finishes (others available):

			
Giesse Silver <b>376</b>	Bronze euro <b>380</b>	Giesse dark bronze <b>382</b>	Pure white <b>410</b>
			
RAL 1015 Clear Ivory <b>414</b>	RAL 9003 Bright white <b>415</b>	RAL 1013 Pearl white <b>430</b>	RAL 9016 White <b>470</b>
			
RAL 6005 Musk green <b>480</b>	RAL 8017 Chocolate brown <b>490</b>	RAL 9005 Black <b>500</b>	Mat green SFX <b>510</b>
			
Mat grey SFX <b>530</b>	9010 white french <b>610</b>	RAL 9010 White <b>611</b>	RAL 8019 Brown painted <b>640</b>
			
Musk brown grinz <b>650</b>	Musk green grinz <b>660</b>	Mat brown SFX <b>670</b>	RAL 1247 Dark brown <b>960</b>
			
RAL 9006 Silver <b>970</b>			

*Finishes shown here are for illustration purposes only and may not be an exact representation of the actual product. Please contact your Giesse sales representative to receive the Giesse Colour Chart, which includes real samples.*

## Oxide / Electrocolour finishes chart

Anodic oxidation or anodization is a process carried out on surfaces in aluminium and its alloys. This process results in the formation of an extremely hard and compact oxide layer, on average 12-13 microns thick, which increases the durability of the treated materials and makes them exceptionally resistant to atmospheric agents.

Best selling Giesse finishes (others available):



## Trend chart

Trend is a range of steel and painted wood finishes, ideal for modern windows. The beautiful desing-led finish is both versatile and durable.



## Special orders (300 - 600)

Finishes which are not available can be created at the customer's request after feasibility has been assessed, since some finishing treatments can only be applied to certain types of material and not others.

The 300 (oxidised) and 600 (powder painted) finishes are generic options created to manage these cases, known as "custom orders".

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### North America

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

### UK and Ireland

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

### International

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



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