

METAL BY SOLDERING

THE PROCESS

The first steps of the process are the component selection and the loading of the soldering equipment.

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Afterwards there's a manual polishing and an accurate check of surfaces.

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The whole process is finalized by a manual assembly of plastic components and manual coloring of the frame with a syringe, if requested.



Components selection



Equipment loading



Manual polishing



Surfaces check



Assembly



Manual coloring

Safilo uses special **copper-alloys** for frames such as:

1. nickel silver (alloy of copper, zinc and nickel) with strength and elasticity to guarantee durability and reliability
2. monel (alloy of nickel, copper, iron) that guarantees richness and brightness; it's a durable material, appropriate for creating thick frames and small parts

Stainless steel is one of the most suitable materials for eyewear thanks to its ultra-thin lines, lightness, strength and versatility of the design. Moreover, steel is not a particularly expensive material, offering the advantage of a high quality product at a really affordable price. Usually the frame is not completely made of steel, but mainly the rims. Main advantages:

- ideal solution for people with a high degree of skin acidity; frames are not attacked by sweat, cosmetics and weathering
- resistance over time
- comfort and adaptability to the face shape
- flexibility and strength

Safilo has dedicated an area of its factory in Longarone to stainless steel production and the best quality standards are guaranteed by highly skilled workers and sophisticated control procedures.



HOW TO WORK WITH METAL

Adjustment must be done without heating. Different systems can be used depending on rim type (full rim, half-rim or rimless). Therefore due to the huge variety of models, each frame is provided with specific instructions.

MAIN OBJECTION

«IS IT HYPOALLERGENIC?»

Pure Titanium is the only hypoallergenic metal. All the other metal parts are treated through galvanization treatments and quality tests are made to avoid damages and allergies.



Safilo **Titanium** glasses are synonyms of uniqueness, comfort and biocompatibility with a supreme lightness (48% less than traditional metal alloys) and a high resistance to corrosion. Exclusive frames designed for customers able to recognize and fully appreciate all the advantages and benefits:

- crude-nickel free and completely hypoallergenic frames, this is the ideal solution for people with a high degree of skin acidity as frames are not attacked by sweat, cosmetics and weathering
- high stability, durability and adaptability to the face shape
- corrosion resistance at 100% and resistance to mechanical stress
- flexibility (in particular the beta-titanium)

The cost of titanium frames is higher than other materials due to: expensive raw materials (difficult extraction process), high cost and more rapid wear of the equipment used to process it, use of special procedures for welding, need for high skilled and specialized workers, complex techniques for finishing and coloring.

Aluminium is a very valuable material as it is an excellent barrier to light, it is waterproof and it can be recycled indefinitely without losing its original quality. In the eyewear industry it has limited use because of the difficulties regarding the surface treatments process, such as the surface polishing. However, the lightness and colours obtainable from aluminium make this material an excellent solution to create temples and fronts. Main advantages:

- good mechanical properties, high stability and durability
- high resistance to corrosion: frames are not attacked by sweat, cosmetics and weathering;
- maximum comfort

Flexible metal is particularly innovative because it is made in metal with shape memory. This material is characterized by high strength, extreme lightness and absolute comfort. The structure is so flexible that it can be folded and then returned to its original form without alteration and damage.

CASTING FOR METAL COMPONENTS

Some **copper-alloys** are particularly suitable for the production of optical components:

1. copper-Beryllium (alloy of copper and tin), the most suitable material for the casting process with the possibility to obtain highly decorated components
2. bronze (alloy of copper and tin)

