

# Press Release

21/12/2023

## Metal-replacement: ELESA continues to innovate for the range of components in SUPER-technopolymer

The new **STP threaded stems**, designed for levelling equipment and machinery, are entirely made of SUPER-Technopolymer, a latest generation polymeric plastic material with high mechanical performance, excellent resistance to chemical agents, and optimum thermal properties.

Driving the development of the range is the increasingly widespread Metal-replacement phenomenon which today affects an increasing number of application sectors.

Replacing metals with engineering plastics has been possible thanks to the advent of high-performance polymers and composites which, due to their high mechanical performance and excellent temperature resistance, have allowed new uses also in applications which until now were the sole preserve of metals.

Each material has its own unique properties and is chosen based on the application, the sector, and the operating and use conditions. For this reason, the wide range of ELESA levelling elements, in addition to this latest innovation, is made up of different combinations of materials including the standard configuration with a polyamide or polypropylene based technopolymer base and stems with zinc-plated steel or AISI 304 stainless steel joint, also with no-slip disk in NBR rubber or anti-vibration disc for vibration dampening, and the numerous variants entirely made of zinc-plated steel and of different AISI classes of stainless steel, including 316L for special applications and Hygienic Design for use in environments where a certified level of hygiene is required.

### Standard, but still high-performance!

The new STP stems, available in different lengths and with threads from **M8 to M12**, guarantee a **maximum static load resistance** ranging from **2700 N** for the smallest sizes up to **7000 N** for the largest. The surprising mechanical resistance is accompanied by the numerous advantages typical of the SUPER-technopolymer category. Let's take a closer look at them:

- **high mechanical resistance** thanks to the presence of very high percentages of glass fibre bonded with appropriate chemical primers to the base polymer and/or the presence of synthetic aramid fibre;
- **resistance to corrosion** and **to the most common chemical agents** for applications that require frequent washing (food, pharmaceutical, medical, etc.) or for use in humid environments or outdoors, with excellent durability.



STP stems for levelling feet



Levelling feet

## Press Box

**Contact:** Fabio Invernizzi  
**E-mail:** [fabio.invernizzi@elesa.com](mailto:fabio.invernizzi@elesa.com)

**ELESA S.p.A.**  
Via Pompei, 29 - 20900 Monza (MB) Italy  
Tel. +39 039 2811.1 - [info@elesa.com](mailto:info@elesa.com)

[elesa.com](http://elesa.com)

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Figure 3 compares resistance to the most common chemical agents between the SUPER-Technopolymer version and the zinc-plated steel and stainless-steel versions. As can be seen in the detailed table, there are many more black marks (Suitable) in the SUPER-Technopolymer material column;

- **lightness** which, in addition to making transport, storage and handling more economical, represents an advantage especially for those applications intended for mobile machines or equipment;
- a **significant economic advantage** compared to traditional stainless steel or zinc-plated steel solutions (Figure 4). The “y” axis shows how the range of unit costs, depending on the size, of the STP stems in SUPER-Technopolymer, for the same size of the ball joint (Ø 14), is far more cost-effective than the stainless steel stems or even the zinc-plated steel stems.

CHEMICAL AGENTS	SM-SST Stainless Steel AISI 304	SM Stainless Steel AISI 304	STP SUPER- technopolymer
HYDROCARBONS, OILS AND FATS	●	●	●
WEAK BASES	●	●	●
SOLVENTS	●	△	●
WEAK ACIDS	△	△	●
CHLORIDE CONCENTRATES	△	△	●
GALVANIC CORROSION	△	△	●
STRONG ACIDS	△	△	△
STRONG BASES	△	△	△
AMMONIUM CHLORIDE	●	△	●
CALCIUM CHLORIDE 5%	●	△	●
SATURATED CALCIUM CHLORIDE	△	△	△
IRON CHLORIDE (III) 5-10%	△	△	△
POTASSIUM CHLORIDE 10%	●	△	●
SODIUM CHLORIDE 10%	●	△	●
ZINC CHLORIDE 10%	△	△	△

Suitable ● Not suitable △

Figure 3

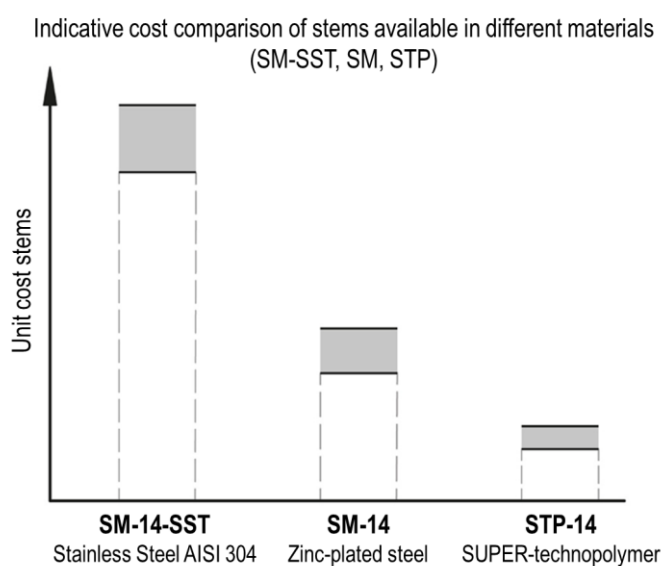


Figure 4

1941 – 2023

80 years at the service of the industry

Elesa designs and produces the widest range of standard components for industrial machines and equipment: handwheels, clamping handles and levers, adjustable levers, clamping elements, knobs, position indicators, indexing and spring plungers, levelling feet, hinges, tubes connectors, latches, accessories for hydraulic systems, modular roller tracks, castors and wheels, magnets, vibration mounts and vacuum components. Made with the most advanced technopolymers and metals, highly efficient and reliable, ergonomic and innovative design, Elesa brand products are used in the most diverse areas of application in the sector of industrial mechanics. The constant commitment to R&D is combined with a strongly customer-centric service. Founded in 1941 with headquarters in Monza and 14 subsidiaries abroad, Elesa exports its products to more than 60 countries worldwide.

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**E-mail:** [fabio.invernizzi@elesa.com](mailto:fabio.invernizzi@elesa.com)

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 Via Pompei, 29 - 20900 Monza (MB) Italy  
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