

Sapa in Poland orders electromagnetic pulse technology system from PSTproducts in Germany

Sapa Aluminium Sp. z o.o. in Trzcianka (Poland) has ordered an electromagnetic pulse technology system from PSTproducts GmbH in Alzenau (Germany), and Sapa is now the first aluminium extruder to apply this process commercially on the shop floor.

The need for aluminium lightweight structures becomes more and more evident, and Sapa specialises on adding value to aluminium extrusions by producing prefabricated parts using various innovative joining processes. The electromagnetic pulse technology (EMPT) is the newest of these enabling processes. It has been used for more than a decade for joining, welding, forming, cutting and compression of powders, but only now reliable equipment becomes available for industrial applications.



EMPT joining of lightweight seat structures from Sapa extrusions at PSTproducts

The electromagnetic pulse technology (EMPT) can be used to join dissimilar materials, e.g. hybrid joints between aluminium and high-strength steel, or for anodised or powder coated extrusions. Sapa in Poland uses its EMPT machine initially mainly for testing, prototype manufacture, small series production and back-up in close cooperation with experienced staff of PSTproducts in Germany. This collaboration demonstrates the world leading role that these two companies play in their respective fields of operation.

The electromagnetic pulse technology (EMPT) provides non-contact processes for joining, welding, forming and cutting of metals. For EMPT processing electromagnetic coils are used, to which a short but very high-power electric current is applied from a pulse generator. The coil produces electromagnetic forces, which can for instance change the diameter of tubes by compression or expansion. Non-magnetic metals such as aluminium

tubes can also be processed, as an eddy current is temporarily induced in the skin of the tubes. Non-symmetric cross-sections can be expanded or compressed, resulting in a mechanical interlock, a solid phase weld or simply a geometry change if required.

Sapa offers high-quality profiles and fabricated parts, which meet different surface quality requirements – as extruded, anodised and powder coated – for the following applications:

- automotive components such as instrument panel beams, longitudinal members and crash boxes,
- furniture, lighting fittings, refrigerators and freezers,
- shower cubicles, bathroom equipment and decorative strips,
- façades, windows, doors, railings and building systems,
- products used in public buildings such as shop equipment, display cases, electronics boxes, cooling fins and ladders,
- roofs, solar collectors, gates, sunshades and banister posts,
- yacht masts, truck bulkheads/sideboards and football goals,
- load-bearing structures, guides, scaffolding, corner joints, industrial railings, fencing posts, platforms and floors,
- components for telecommunications and electronics industry.

About PSTproducts GmbH

PSTproducts GmbH is the leading manufacturer of electromagnetic pulse systems for welding, joining, forming and cutting processes without touching the work pieces or generating heat affected zones. PSTproducts focuses on the application of electromagnetic pulse technology (EMPT) for the manufacture of lightweight and hybrid structures in various industry sectors. These structures fulfil the functional demands and can withstand high static dynamic loads. As a systems integrator of EMPT machines, tools and bespoke materials handling systems, PSTproducts offers customer related solutions, which guarantee an efficient application in the in-house high-volume production.

PSTproducts is passionate to find a technically and economically satisfactory solution by applying and implementing EMPT to industrial products:

<http://www.english.pstproducts.com/>

About Sapa Aluminium Sp. z o.o.

Sapa Aluminium Sp. z o.o. manufactures and sells aluminium profiles and components. In Poland Sapa can offer the complete production process from manufacturing of aluminium profiles through fabrication to surface treatment. In order to meet customer requirements, Sapa extrudes the aluminium profiles using extrusion presses with a diameter of 6", 7" or 9". Sapa has also a power coating plant and an anodising plant, where the required surface treatment for profiles and components can be provided. Sapa is the largest aluminium profiles producer in the world. The Sapa Group develops, manufactures and markets value-added profiles, profile-based building systems and heat exchanger strip in the light-weight material aluminium. Sapa is divided in the business areas Sapa Profiles, Sapa Building System and Sapa Heat Transfer and is represented in Europe, North America and Asia. The business concept is built on close cooperation with customers. Sapa is the leading company in its field of operation and has customers in the building, transport-, engineering, telecom and home and office industry. Sapa is part of Norwegian Orkla ASA. The Sapa Group has combined net sales of 32,500 MSEK and 12,000 employees:

<http://www.sapagroup.com/en/Company-sites/Sapa-Aluminium-Sp-z-oo/>

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