

Shoulderless tube welded by ultrasound

TUBEX GmbH has revolutionised the process of producing standard tubes. The tube sleeve is now welded directly to the cap by ultrasound, thereby dispensing with the shoulder. Production of the shoulderless tube, therefore, saves not only on material but also on weight.



The challenge

Normally standard plastic tubes consist of a polypropylene (PP) cap, as well as a shoulder and tube sleeve made from polyethylene (PE). Because the materials and mixtures of them do not produce a permanent, firmly bonded joint, it is the purpose of the shoulder to connect the cap and sleeve by screwing or snapping on one to the other. Beyond this the shoulder has no further purpose but does make a decisive difference to the weight of the tube.

In order to save weight when producing standard tubes, the sleeve has to be joined directly to the cap, to produce a shoulderless tube.

The solution

The patented SL-T-cap was produced in two parts from PP (top) and PE (bottom), so that it can be welded to the tube sleeve. This is where ultrasound plays a part and ensures seamless and absolutely tight connections. Ultrasound also has the advantage of reducing the amount of energy used in the production process, because welding is timed.

Compared with conventional tubes, the shoulderless tube saves up to 40 per cent of material. At the same time, the ultrasonically welded cap forms a homogenous unit with the tube, thereby avoiding unwanted residues in the cap. For the tube manufacturer this means possible new ways of designing tubes.

The advantages

- Seamless join between sleeve and cap by ultrasound
- Production process uses less energy
- High process speeds
- Sustainable tube with material savings of up to 40%
- Less product residues in the cap
- Individual tube designs

Successful co-operation in tube manufacture: SONOTRONIC and TUBEX

The shoulderless tube makes it possible to produce ecological, functional, sustainable and above all cost-conscious packaging. The production process, coupled with the many different design opportunities for the tube, have already won several awards, including the German Packaging prize.



SONOTRONIC Nagel GmbH entwickelt und produziert Hightech-Ultraschallsysteme und Komponenten für die Verpackungs- und Lebensmittelindustrie.

www.sonotronic.de



TUBEX GmbH is one of the leading companies in the packaging industry and specialises in aluminium aerosol cans, aluminium tubes and plastic tubes.

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