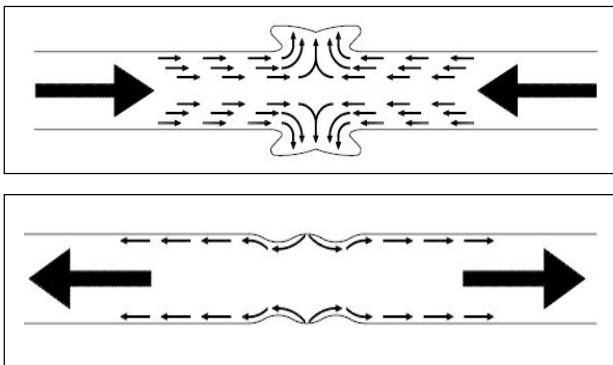


Welding procedures for TPU round- and profile belts

During the extrusion the molecular chains are arranged in linear order. Further processing (e.g. welding or moulding) changes the order of the molecular chains to some extent. As a result, the properties of these processed parts are modified. Choosing the right welding joint considerably influences the quality, durability and resilience of the product, especially when they are used dynamically as drive- or transport profile.

Mirror-imaged welding (butt-welded)

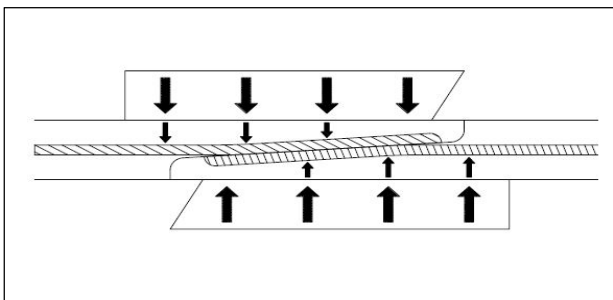


Mirror-imaged welding separates the molecular chains at a right angle to the extrusion direction. When the hot ends of the profiles are joined, the melted material flows outwards and the molecular chains are not in linear order at the welding seam.

Under tensile stress they try to align themselves again in linear order. This often results in constrictions, the so-called "wasp waist."

This welding procedure is the most common, even though the weld contact area is small.

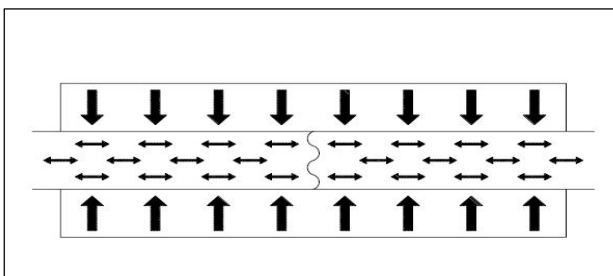
Mirror-imaged welding (overlapping)



Overlapping mirror-imaged welding is mostly used for profiles with reinforcement. The advantage of this welding procedure is that the reinforcements are parallel to each other at the welding seam and can absorb tensile forces without much loss.

The molecular chains mostly remain in linear order, but there is a considerable welding bead which is hard to remove. Compared to the butt-welded procedure, the weld contact area is considerably larger.

Shape-welding (German utility model no. 20 2014 010 743)



The big advantage of shape-welding is that the profile ends can be both butt-welded and welded diagonally or as finger joints, without changing the order of the molecular chains. The pressure is distributed to a large area and the material is melted together smoothly. Finger joints are top-quality joints because they have the largest weld contact area.

There are only very small welding beads or none at all, so no time-consuming cleaning work has to be done.

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