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## MIXER APPLICATION SHEET no. 7:

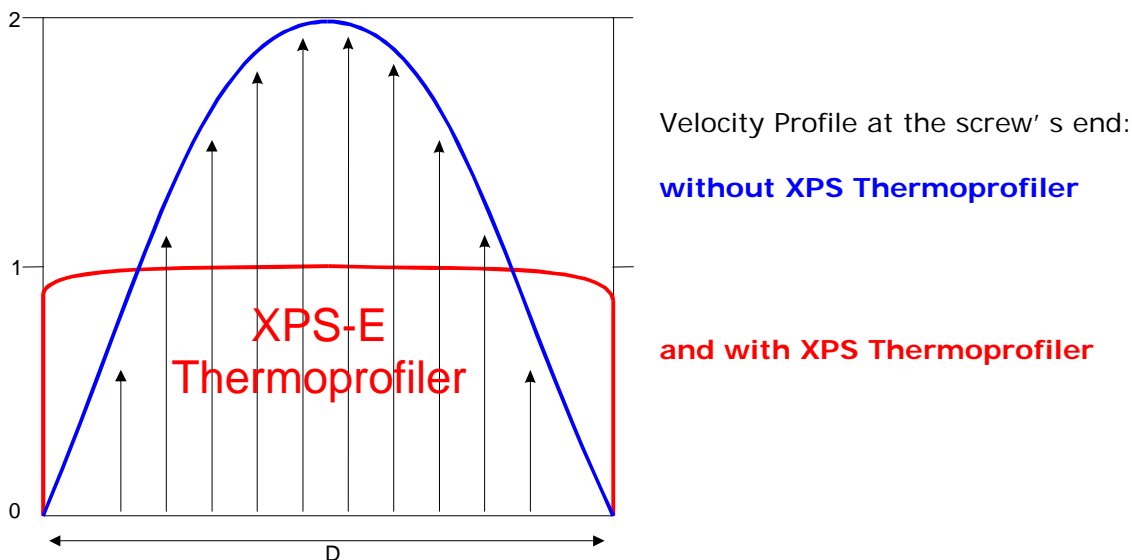
### XPS Thermoprofilers for Polymers Extrusion & Injection Moulding

A perfectly homogeneous melt is one of the most important pre-requisites needed to cope with today's stringent high quality products demand in Injection Moulding and in Extrusion. If the polymer melt is not perfectly mixed at the screw's end, it is showing strong inhomogeneities, specially radial temperature differences and colour and/or additives maldistribution. Radial temperature differences cause velocity differences across the melt pipe cross section. Such a situation can lead to problems in the wall thickness, shape distortions, colour streaks, spots formation, discrepancies in weight and to local differences in the mechanical resistance.

Why? The screw must pull the material, melt it, homogenize it thermally, mechanically, distribute additives into it, and discharge the melt, without degrading it!

The screw profile is therefore a compromise.

Furthermore, in Injection Moulding, plasticizing occurs in a discontinuous process and the effective screw length is dramatically reduced.



#### What can the Pittaluga Static Mixers XPS-E ed XPS-I do:

- ✓ Homogenize the melt Temperature
- ✓ Homogenize the melt Viscosity
- ✓ Homogenize the melt Velocity into the die
- ✓ Avoid colour or velocity streaks, and internal tensions
- ✓ Get constant thicknesses
- ✓ Mix different polymers
- ✓ Perfectly mix colourants
- ✓ Mix concentrated CaCO<sub>3</sub> masterbatches
- ✓ Improve plasticizing
- ✓ Save the costs of pre-mixed and pre-coloured compounds