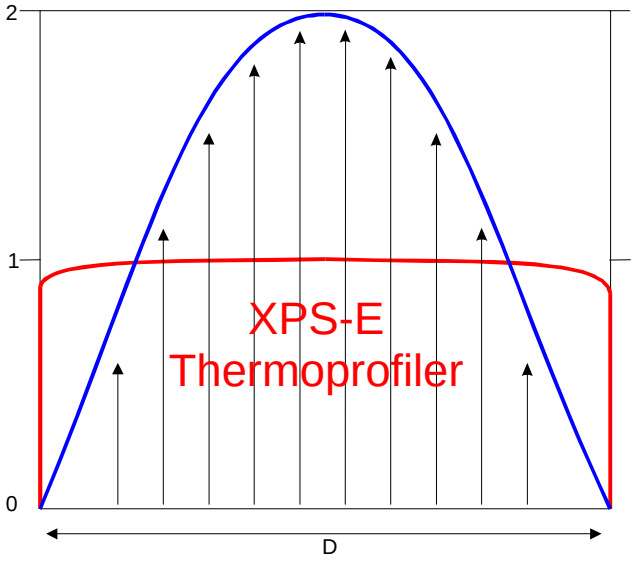
DR. B. PITTALUGA & C. s.r.l.
Via Ludovico Muratori, 18 – 24030 MOZZO (BG) - ITALIA
Fax (0039) 035/618710 - ☎ (0039) 035/466246
E-MAIL info@pittamix.it

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.



Velocity Profile at the screw' s end:

without XPS Thermoprofiler

and with XPS Thermoprofiler

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

- ✓ Homogeneize the melt Temperature
- ✓ Homogeneize the melt Viscosity
- ✓ Homogeneize 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 CaCO3 masterbatches
- ✓ Improve plasticizing
- ✓ Save the costs of pre-mixed and pre-coloured compounds