

Progress in process

Mixer optimisation in PVC processing



Higher performance requirements, new raw material properties, a modified process sequence or increasing quality demands – there are numerous reasons for adjusting the parameters of a production line. Often the material preparation as first step in the process chain is not considered properly. However in particular an optimised mixture is the key to reproducible top-level results. For these optimisations the MTI expert engineers provide technical advice based on their long-term know-how in process technology – regardless of the mixer's type and brand.

Parameters, processes, performances

The optimisation of a mixer requires an overall view of all parameters. Due to the interaction of e.g. mixing tool configuration / filling level / raw material properties each modification always interferes with all other parameters, too. The key value for each modification is the required quality of the mixed product.

As a first step the actual state is carefully analysed to disclose error sources and present possible solutions. Often it is necessary to refurbish worn parts or modify the mixing tools by changing the geometry of the blades in order to improve the mixing effect or increase the friction input.

Having more than 40 years of experience in mixing technology MTI is able to present the optimum solution for almost every application.

Many times the addition of fluids is a sensitive detail within the mixing plant: an improper positioning or



Mixing tool, material deflector, lance for addition of liquids

design may cause an inhomogeneous distribution of the liquids within the product. As a result there is encrustation and product sticking to vessel and lid, finally leading to thermal degradation and dark spots in the mix. Even for this feature MTI offers a solution with optimised process technology: a lance having a spraying nozzle with non-drip valve directly dispersing the liquids into the vortex. This system can be installed into the mixing vessel or on the vessel lid in case of subsequent modification of existing mixers.

Progress and success – our experience

An optimisation carried out at a Western European manufacturer of window profiles did not only cause a significant rise in quality. Also the productivity could be increased by more than 30 % without the costly investment in a new production plant. After running numerous tests with stepwise optimisation and precise adjustment of the process technology a modified configuration of the heating mixer tools as well as the installation of a highly effective aspiration system

for the dehumidification of the dryblend led to the requested material properties.

Finally a reproducible quality of the mixture with a residual moisture < 0.1 % could be achieved.

The additional exchange of the existing Cooling Mixer against a considerably more effective MTI Flex®-line Mixer of the same size resulted in the significant increase in capacity from 7.5 to more than 9.5 batches/h.



Mixer aspiration

All advantages at a glance

- Constantly superior dryblend quality, no colour variations, significant reduction of sieve residue
- Maximum throughput rates
- Improved availability of the total production chain
- Less plate-out at the extrusion tools
- Substantially reduced maintenance costs

Find your way

In our newly established R&D Center our complete mixer portfolio is available for running tests with your products. Using the most modern analysing and data recording systems we are able to develop the tailor-made solution for your future success.