

Streak-free with 50% less color additive

How Promix Mixing Nozzles make injection molding more efficient

Winterthur, Switzerland, October 1, 2024 - Injection molding companies today face a variety of challenges. On one hand, they have to ensure consistently high product quality despite varying raw material sources and quality. On the other hand, they need to meet technical requirements like accuracy of fit and appearance, while keeping energy and material costs low.

Occurring quality problems are often solved by modifying the process parameters. However, in many cases this does not always solve the problem sustainably, but only shifts it. For example, color streaks can be smoothed out by overdosing the color batch, yet this results in higher color consumption. Other measures to make the melt more uniform include increasing the back pressure, temperature and screw speed. However, this will result in a higher melt temperature, which can cause warpage during cooling. Moreover, the increased energy input increases the cycle time.

Using a Promix Mixing Nozzle can solve these problems at the source. As the pictures of the building blocks illustrate, the result is a streak-free part, without excess coloring or additional energy input. The Promix Mixing Nozzle is mounted instead of the open nozzle and equalizes the color distribution right before the mold. This usually reduces the amount of colorant required by 30-50%. Given the cost of masterbatch or liquid color, this is a significant factor. The lower energy input also makes it possible to reduce cycle time and increase machine productivity. Tolerance deviations and warpage are significantly reduced due to the lower temperature, leading to a lower scrap rate. The mixing nozzle also facilitates the mixing of recycled material and enables a higher proportion of regrind or recycled material without visible quality losses.

In conclusion, mixing nozzles can efficiently and sustainably fix quality issues, like poor additive distribution, surface defects, weak weld lines or warping. They also help use more recycled materials. With the example of the stack stone, made at SKZ, it could be shown that even demanding color mixing problems can be solved quickly and reliably by using a Promix mixing nozzle. The 50% color savings are a welcome reduction in production costs in today's very demanding economic environment.

Promix Solutions is presenting mixing nozzles and other key components for saving material, , increasing productivity and reducing production cost at Fakuma in Friedrichshafen, Germany, from October 15 to 19, 2024, in Hall A6, Booth 6108.

About Promix Solutions AG

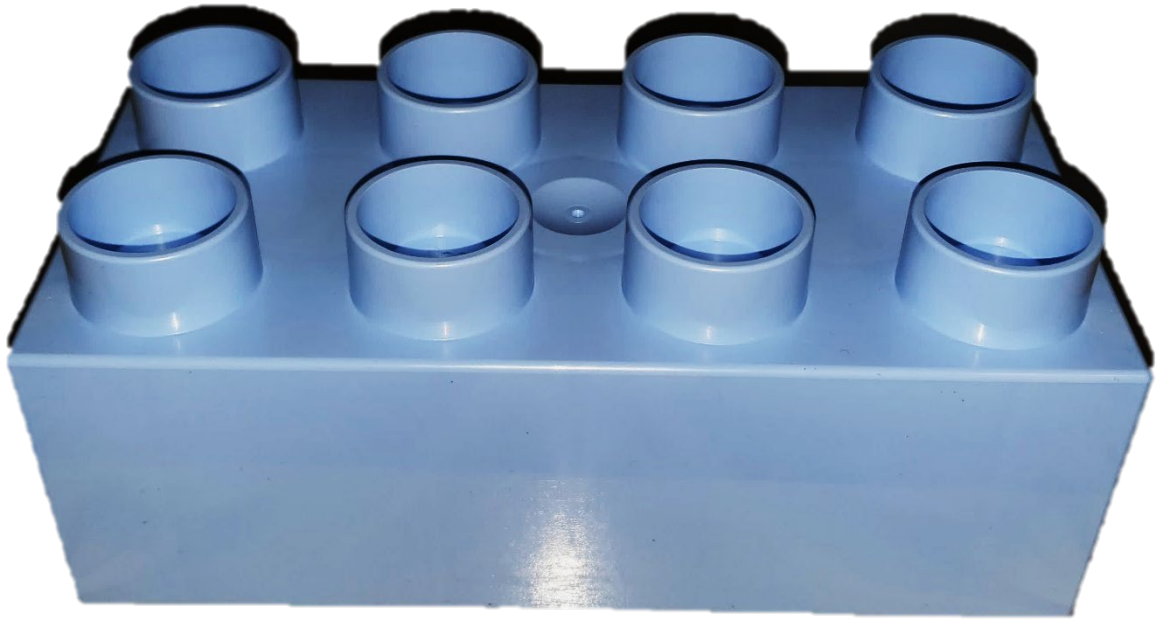
Promix Solutions AG is the leading supplier of unique key components and solutions in the area of mixing, foaming and cooling in plastics processing and polymer production. Promix serves the industry with effective solutions for the reduction of the environmental footprint, cost savings and quality improvements in extrusion and injection molding. A motivated team with long standing experience and extensive process and application know-how ensures excellent consultancy and service. The product portfolio includes Foam Extrusion Systems, CO₂/N₂ Gas Dosing Stations, nucleation additives, Key Components for the production of Light Foams, Mixing Nozzles, Melt Blenders, Melt Coolers and Inline Viscometers. For more information: www.promix-solutions.com.

Pictures



Before – without mixing nozzle

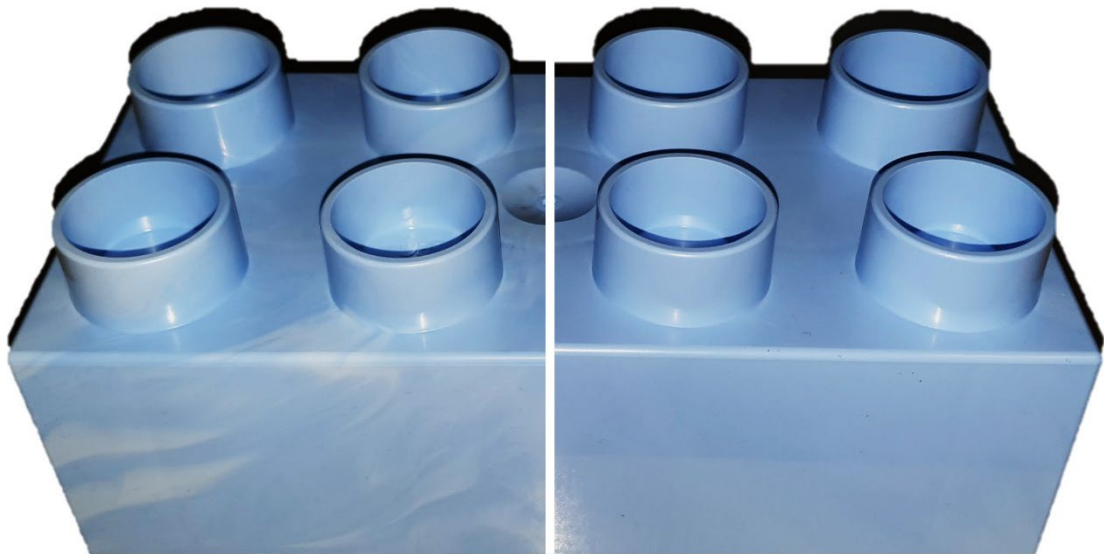
Building block made of white ABS with 2% liquid color and open nozzle: the color pattern is irregular. Despite increased color addition, increased back pressure and higher temperature, the streaks remain.



After – with Promix Mixing Nozzle

Building block made of white ABS with 1% liquid color: With the Promix mixing nozzle, an excellent color result could be achieved using 50% less colorant.

Before – after in one picture



(Pictures: Promix Solutions AG)

Note for editors (not for publication)

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