

# UFD “Elite Series” Nozzles



# What is the Technology?

**Simplified UFD applicator nozzles with larger orifices and fewer, thicker plates**



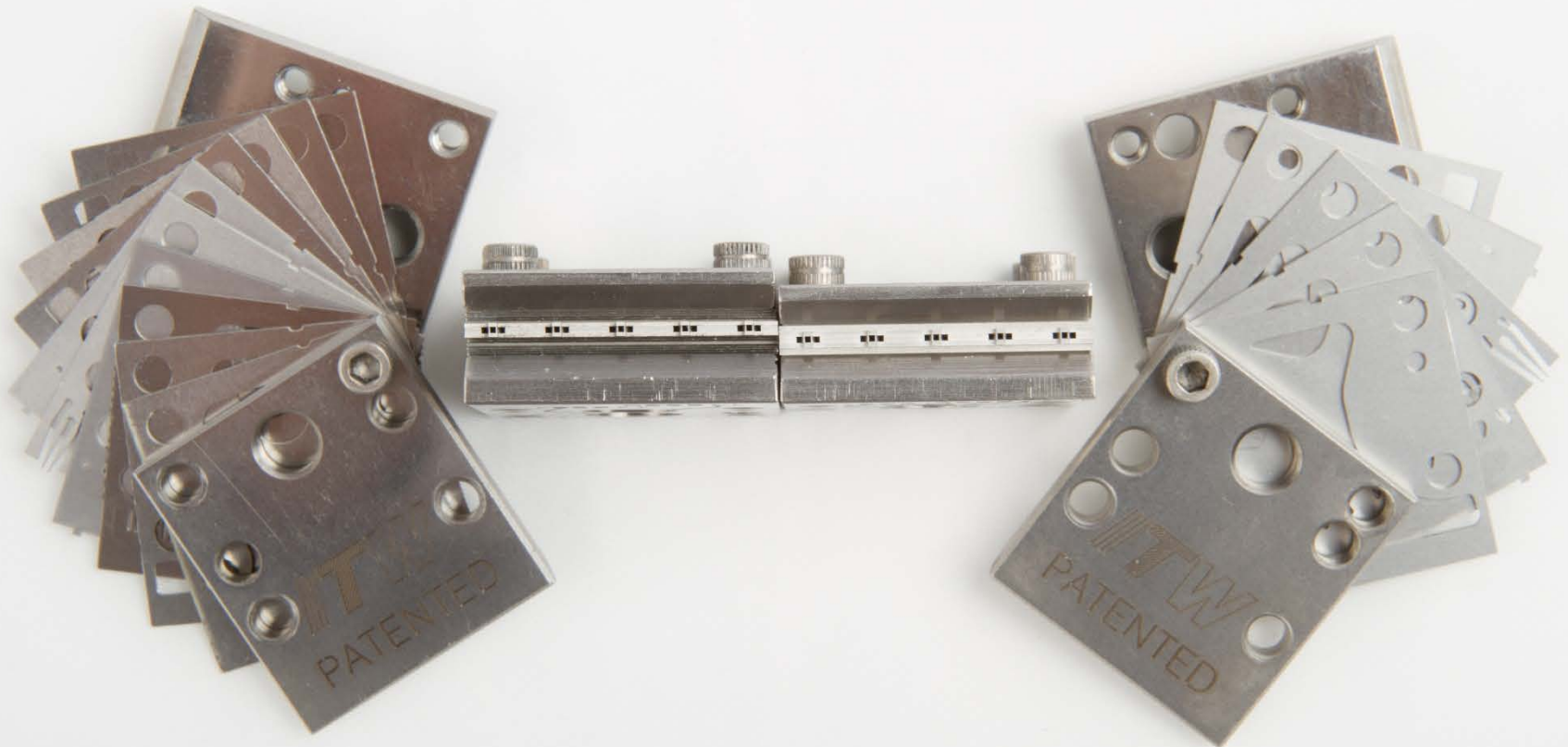
# Concept

## Previous Design:

- 11 plates
- 11.1 mm total thickness

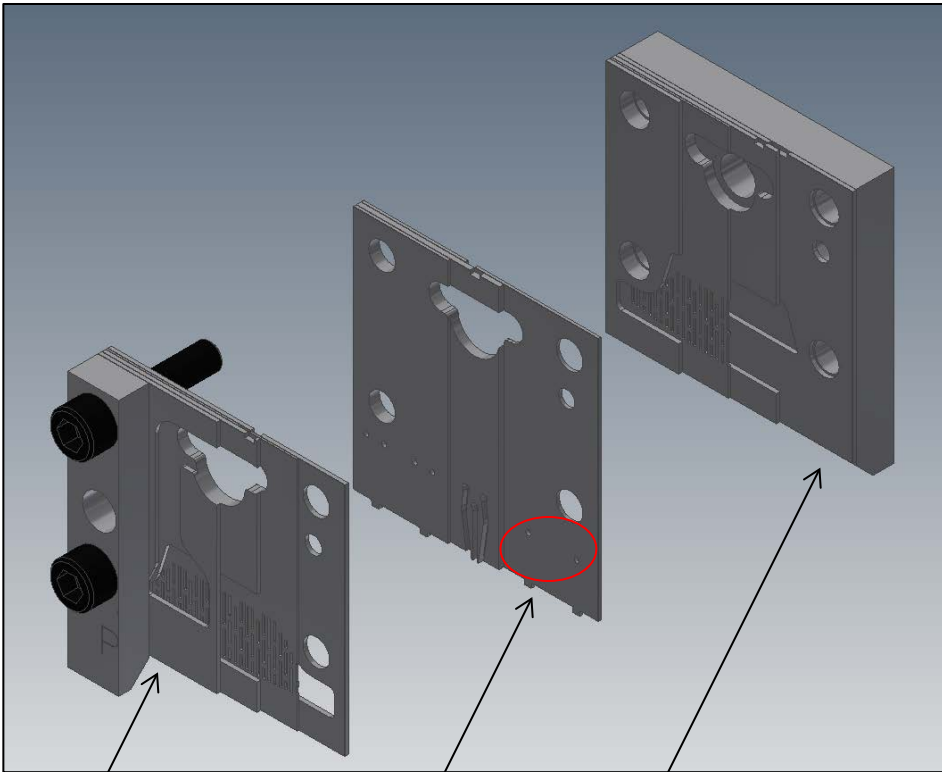
## New Design:

- 5 plates
- 9.5 mm total thickness



# Visual Explanation

## Previous Design

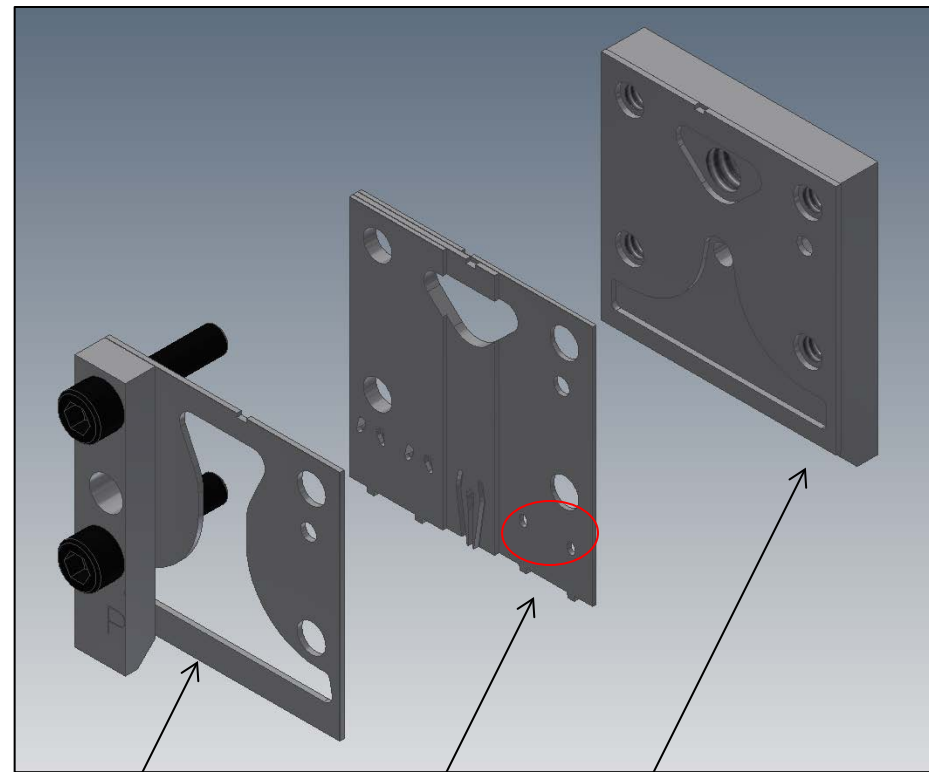


Four Plates

Three Plates

Four Plates

## New Design



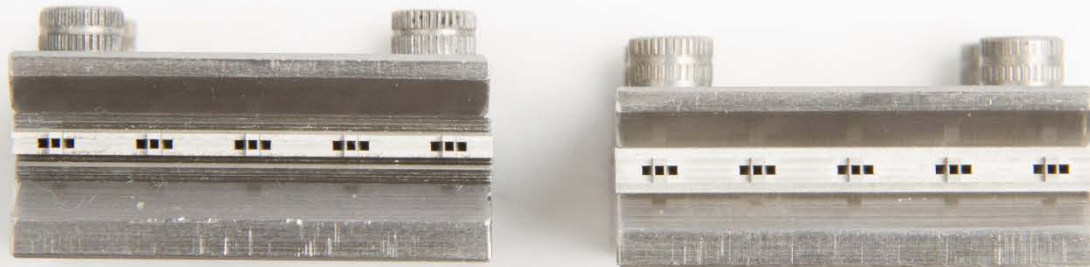
Single Plate

Three Plates

Single Plate

# Differentiation

**Next generation of patented UFD nozzle applicator technology that provides improved performance, robustness, and simplified maintenance**



# Features & Benefits

## **Adhesive Flow Optimized with Computational Fluid Dynamics (CFD) Modeling**

Higher velocity in critical flow paths, less area for glue to collect. Flow distribution is more even across the nozzle.

### **Customer Benefit**

Reduced nozzle plugging, less downtime

More uniform pattern, consistency of end product

# Features & Benefits

## **Robust Plate Design**

Improved flow path results in higher fluid velocity through the nozzle, especially in the fluid plenum plate. Orifice entry passages increased in size up to 50%

## **Customer Benefit**

Significantly reduced nozzle plugging, less down-time

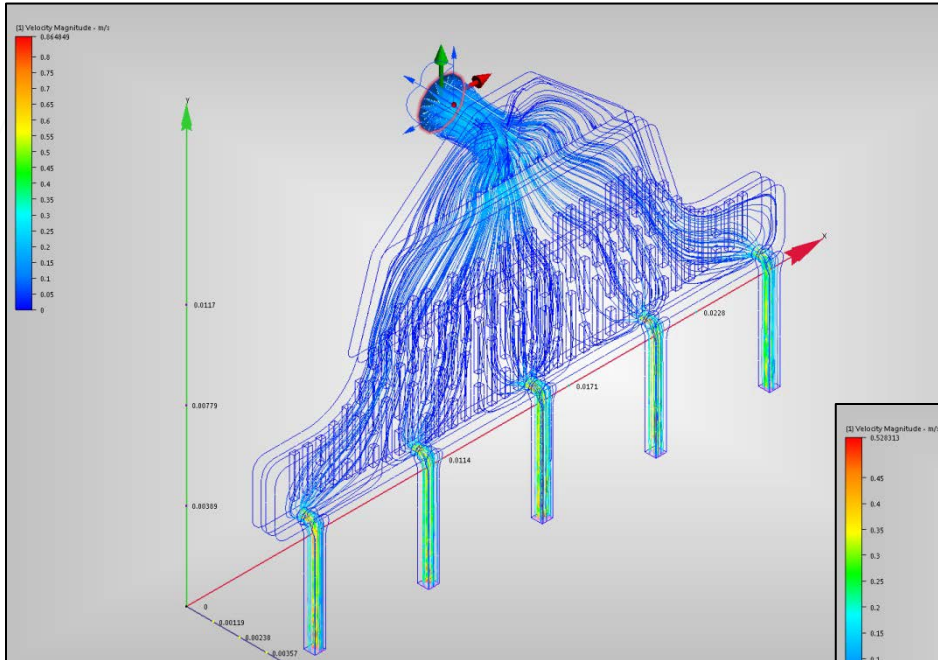
Easier to clean and maintain, reduced labor requirements

Increased nozzle lifetime

Potential to improve processing of Polyolefin adhesive chemistries



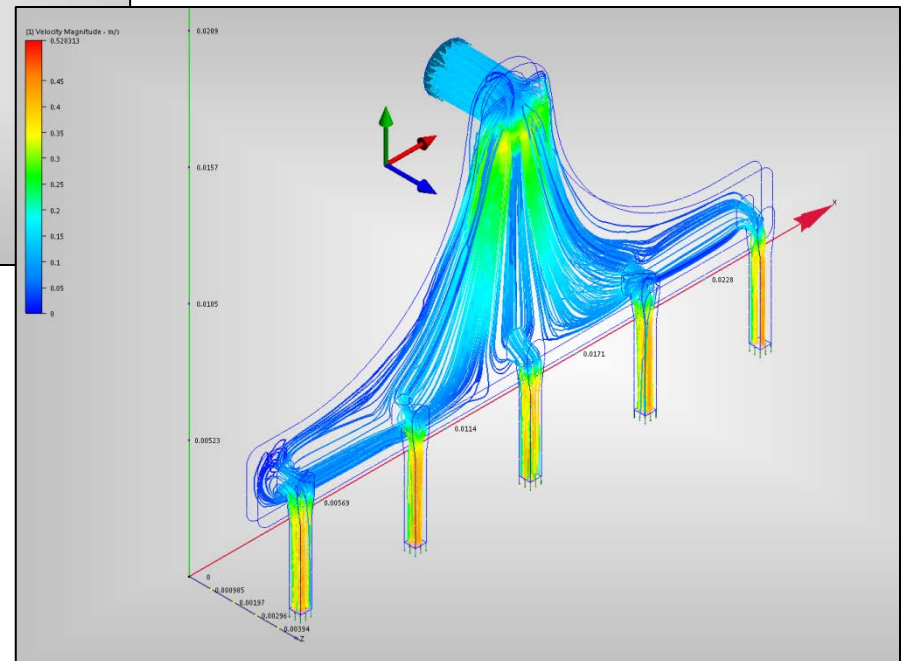
# CFD Simulation



**Previous Design**

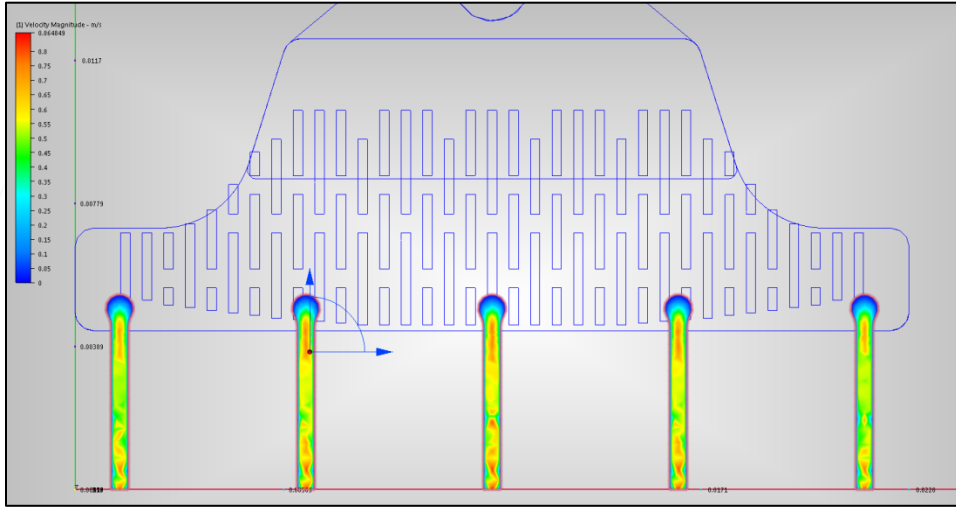
## New Design

- *More direct flow path*
- *More even distribution*
- *Higher velocity throughout nozzle*

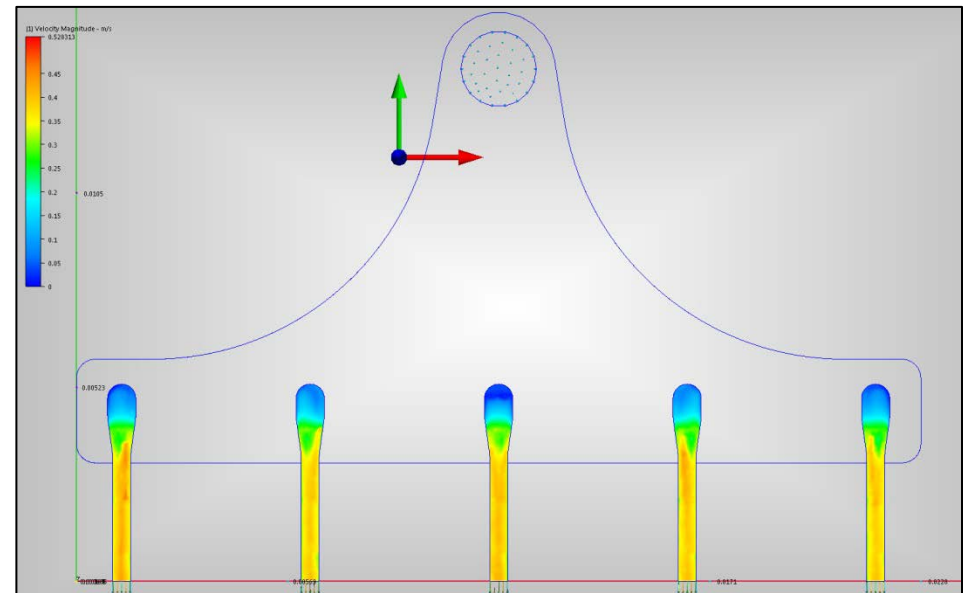




# CFD Simulation



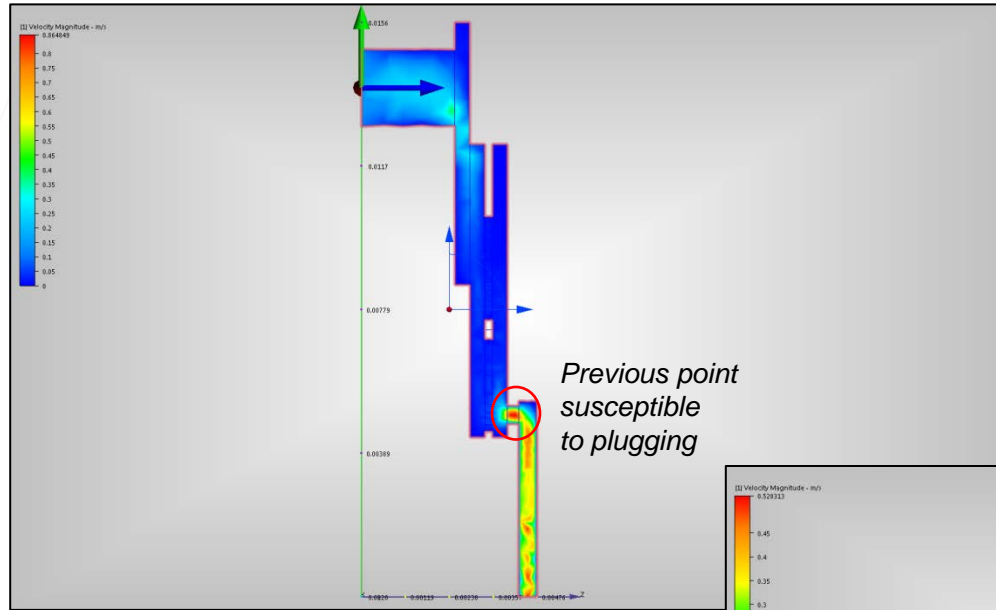
**Previous Design**



**New Design**

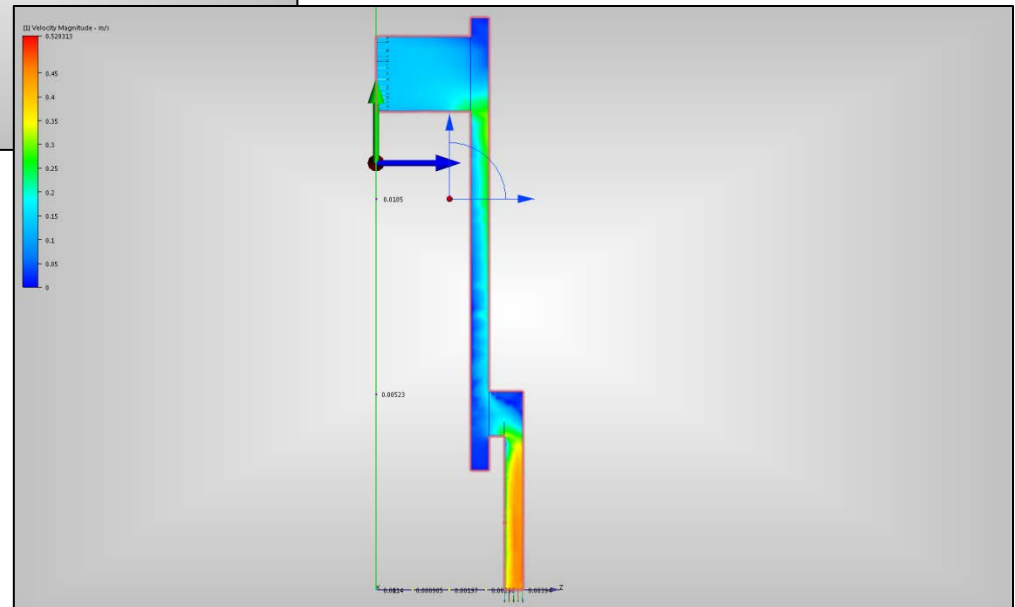
*More uniform velocity gradient in each orifice*

# CFD Simulation



**Previous Design**

**New Design**  
*Increased velocity/consistency  
through new flow path*



# Technical Data/Specs

Adhesive Viscosity	up to 30,000 mPas.
Temperature Range	up to 218°C
Air Pressure	0.3 – 2.1 bar typical

# Thank You!

