

# SEE INSIDE YOUR EQUIPMENT BEFORE YOU BUILD

**How Koch-Glitsch uses CFD to strengthen design recommendations and reduce project risk**

## WHAT IS CFD?

CFD, or computational fluid dynamics, is a digital simulation tool that helps you make informed decisions by showing how vapor and liquid move inside towers and separators. It helps visualize flow behavior early in a project — before fabrication, installation or turnaround.

We right-size the scope of the CFD study to the problem, from highly targeted analyses that quickly answer specific questions to detailed studies that offer more comprehensive evaluation.

## WHY CHOOSE CFD?



Make informed design decisions earlier



Reduce risk by identifying hidden flow issues



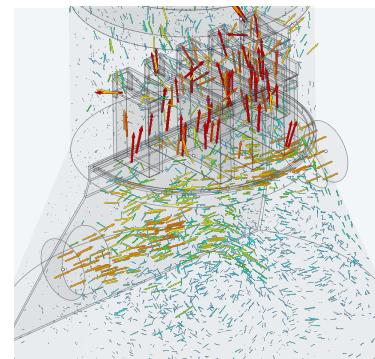
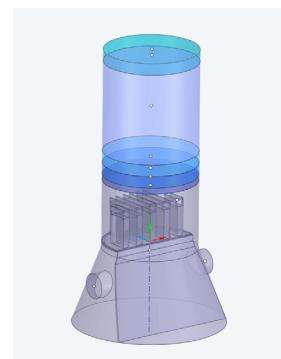
Improve tower performance and distribution



Validate design choices before fabrication

## HOW KOCH-GLITSCH USES CFD

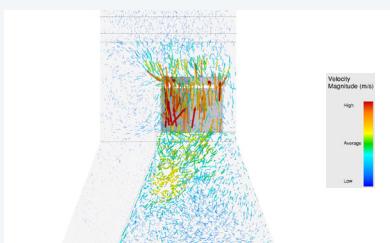
- ▼ Optimize design options
- ▼ Troubleshooting
- ▼ Diagnose existing tower constraints
- ▼ Support confident decision making across mass transfer and phase separation applications



## WHERE CFD ADDS VALUE

- ▼ Tight or limited spacing constraints
- ▼ Non-standard tower geometries
- ▼ Complex feed arrangements
- ▼ Inlet device evaluations

## CASE STUDIES

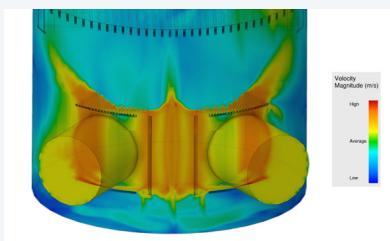


### Existing Chimney Tray Distributor Optimization

**Application:** Amine Regenerator

**Challenge:** Increase throughput on an underperforming tower

**Outcome:** Poor vapor distribution caused by a reboiler baffle restricting nearly half of the column area was limiting capacity in an amine regenerator. Koch-Glitsch optimized the riser hat design with CFD to restore uniform vapor distribution as vessel hot work wasn't an option. Combined with an upgrade to FLEXIPAC® structured packing and INTALOX® high-performance internals, the solution enabled a 35% throughput increase.



### Dual Reboiler Return Optimization

**Application:** Crude Styrene Tower

**Challenge:** Complex reboiler configuration creating uncertainty

**Outcome:** Our team used CFD to evaluate vapor distribution challenges caused by asymmetric reboiler return nozzle locations in a grassroots crude styrene tower. Koch-Glitsch analyzed multiple design concepts and developed a customized double V-baffle to ensure uniform vapor distribution to the packing, reducing project risk and confirming required separation performance.

Whether you're installing new towers or upgrading existing equipment, **we have teams around the world ready to help you make decisions with greater clarity and confidence** so you can reduce risk and improve performance.

