

ULTRA-FRAC® Trays Increase Tower Capacity by More Than 50%

Customer: Refinery

Location: Europe

Tower Name: Debutanizer

Tower Diameter: 9'-6" x 12'
(2,896 mm x 3,658 mm)

Mass Transfer Equipment: 48 ULTRA-FRAC Trays

Problem: A major European refinery had pushed the hydraulic limit of their existing sieve trays in the FCCU debutanizer, resulting in a high RVP Gasoline product.

ULTRA-FRAC high capacity trays also provided additional capacity to further increase the feed rate to the debutanizer. The debutanizer is no longer the constraint in maximizing charge to the FCC unit.

On-Line: May, 1990.

Deisobutanizer Tower Conditions: Before and After ULTRA-FRAC Revamp

	Before	After
Column Diameter	9.5'x12'	9.5'x12'
Tray Type	Sieve	Ultra-Frac
Tray Spacing		
Rectification	24"	24"
Stripping	30"	30"
Pressure Drop, psi	7.1	7.8
Tray Efficiency	65%	75%
Percent of Original Tray Capacity	100%	>150%

Solution: Koch-Glitsch, Inc. recommended replacing the existing sieve trays with 48 ULTRA-FRAC trays and two distribution trays to provide the capability to increase the internal liquid and vapor traffic in the column.

Results: The ULTRA-FRAC technology avoided the alternative of replacing the column with a larger vessel which would have cost several million dollars. The RVP of the gasoline was significantly lowered, which opened new highly profitable markets to the refiner.