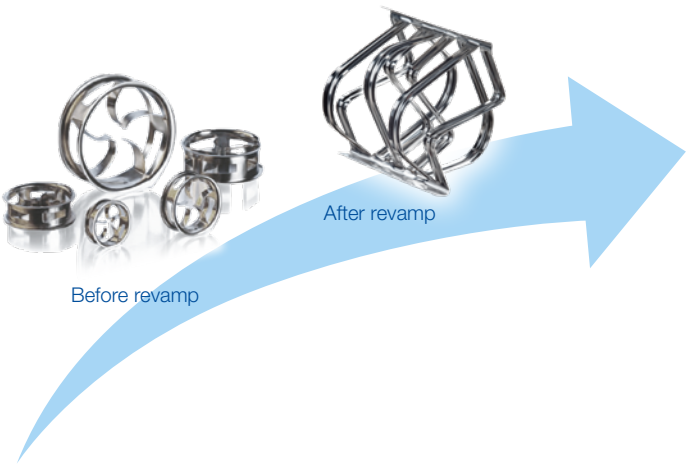
Caustic tower revamp

NeXRing™
The NeXt generation random packing



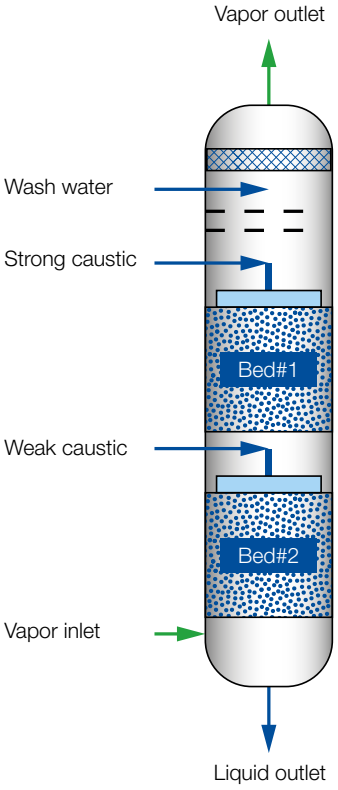
A customer contacted Sulzer to increase capacity while improving the CO2 removal in the existing CO2 absorption column of their ethylene plant. This was the third revamp for this particular column and continued improvements can be hard to find. A proper caustic tower design requires a proper understanding of CO_2 absorption with caustic.

$$CO_2 + 2NaOH \longrightarrow Na_2CO_3 + H_2O$$

Sulzer replaced the conventional random packing with NeXRing and modified the operating parameters to match the packing performance. The result was a 20% increase in capacity and a vapor outlet CO_2 concentration of less than 0.32 ppm, well exceeding expectations.

Revamp objectives:
(I) Improve column capacity
(II) CO2 outlet < 1 ppm

	Before revamp	After revamp
Inlet gas, t/h	**Base Case**	**+ 20%**
CO_2 inlet, ppm mol	Base case	Base case
Strong caustic concentration, wt%	Base case	Base case
Weak caustic concentration, wt%	Base case	< Base case
CO_2 outlet, ppm mol	**1.25**	**< 0.32**



For more information, please contact your local Sulzer Chemtech sales representative

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