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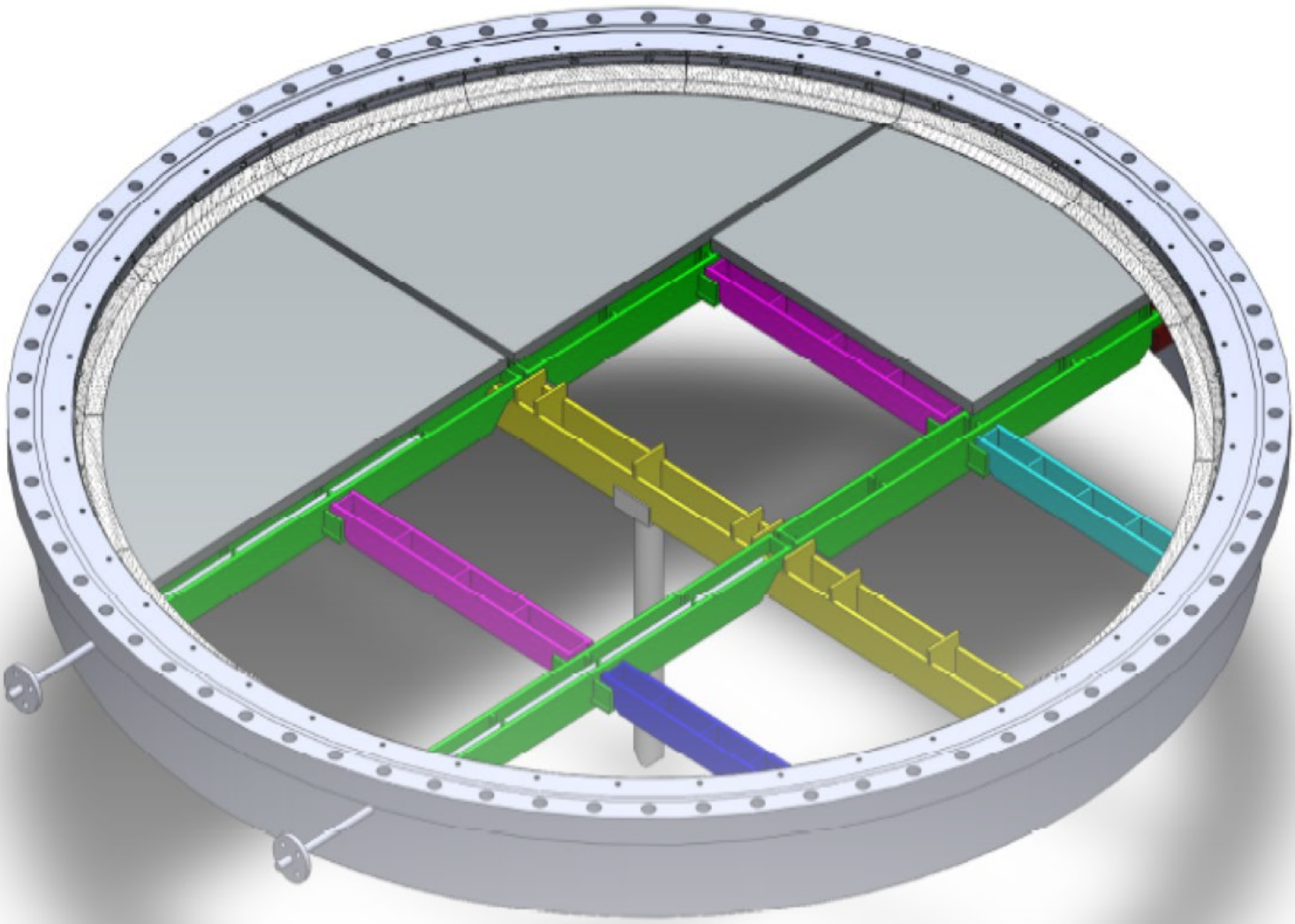
Basket designs for nitric acid plants



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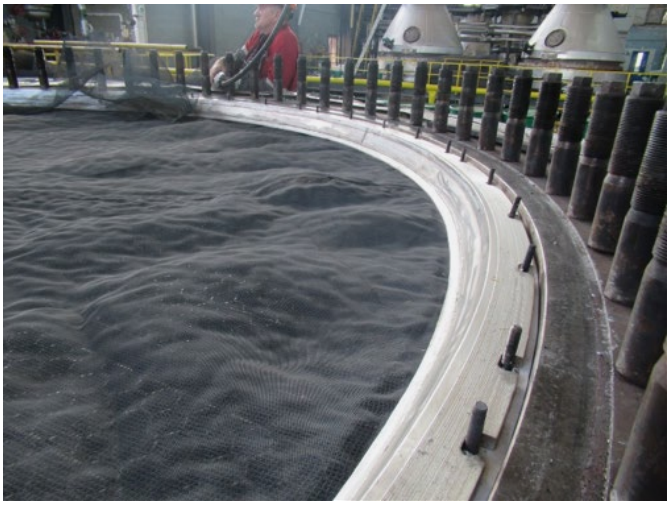
Maximising secondary N_2O abatement through basket design

The most effective method of producing nitric acid is by the precious metal catalysed combustion of ammonia and air. Even with the best oxidation catalysts some impurity N_2O arises that without specific action may be emitted into the atmosphere.

Although several technologies exist to remove N_2O from the gas stream, in-burner secondary N_2O abatement is still the most widespread, cost effective, efficient and desirable solution.

However, the considerable expansion of the burner vessel as the temperature is raised from ambient to the 850-900°C followed by contraction on cooling can have a dramatic effect on the performance of the secondary abatement catalyst. As a result, an engineered solution is required that would overcome the potential gas by-pass routes that can easily develop during this thermal cycling and which are so detrimental to process efficiency and emissions control.

Johnson Matthey's experience in a wide range of catalyst applications combined with knowledge of process design in this and other sections of the chemical industry, allowed development of modifications which allow successful operation of the catalysts across the diverse range of existing plants. These modifications vary from minor changes, to prevent loss of N_2O abatement catalyst, to a unique design which can be retrofitted easily into plants with even the most arduous operating characteristics.



Today this innovative technology is widely used throughout the world and combines leading edge catalysis and engineering design suitable for retrofit into all nitric acid plant designs.

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