

NORAM
SULFURIC ACID
Products and Services

NORAM SX[®]
ALLOY TOWERS &
NORAM SX[®]
ALLOY PUMP TANKS



Development of the SX high silicon alloy over 25 years ago introduced new possibilities for the design of sulfuric acid towers and pump tanks. The traditional brick lining could be avoided and the vessels could be made smaller and entirely out of stainless steel. The first decades were a learning period for the industry. It was recognized that merely relying on the excellent corrosion properties was not sufficient without paying attention to the detail design and operation of the vessels.

NORAM has learned the lessons from the industry well. Utilizing proven materials such as NORAM SX[®] and, with carefully improved designs, **NORAM SX[®] Alloy Towers and NORAM SX[®] Alloy Pump Tanks** offer a safe, reliable and overall cost effective solution.

The use of NORAM's patented HP[™] low pressure drop packing enhances the benefits of the NORAM SX[®] towers. The high performance packing allows for a further reduction of the tower diameter or provides increased capacity. Complemented with a NORAM SX[®] acid distributor and tower internals, NORAM provides a complete high performance tower solution.

Compared to traditional brick lined carbon steel, alloy vessels offer several advantages, particularly for replacement of towers and pump tanks.



NORAM SX[®] Alloy Tower



NORAM SX[®] Alloy Pump Tank

The reduced tower diameter or optional increased capacity/ reduced pressure drop is an attractive benefit.

- Alloy vessels are considerably lighter, with smaller footprint reducing the cost for foundations and facilitating installation.
- Overall installation time is reduced, circumventing the time required for brick lining.
- Small and medium size towers and tanks can be shop fabricated and shipped to site, reducing installation work and shut down time to a minimum.
- Maintenance, service and inspection is made considerably easier.



The long experience of NORAM together with the proven designs and materials makes NORAM SX[®] towers and NORAM SX[®] pump tanks the most effective and reliable choice for new installations and replacement of old units.

NORAM ENGINEERING AND CONSTRUCTORS LTD.

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Ask about the products and services
NORAM supplies to the sulfuric acid industry:

NORAM PLANTS, PROCESSES, SYSTEMS, AND PROCESS EQUIPMENT

NORAM PLANT UPGRADE AND DEBOTTLENECKING ENGINEERING STUDIES
NORAM/CPPE HYBRID SULFURIC ACID PROCESS (HSAP)
NORAM CLEAN START™ PROCESS
NORAM PLANT PREHEATING SYSTEMS
NORAM'S TURBOSCRUBBER FOR GAS SCRUBBING
NORAM STAINLESS STEEL CATALYTIC CONVERTERS
NORAM RF™ RADIAL FLOW GAS-TO-GAS HEAT EXCHANGERS
NORAM SF™ SPLIT FLOW GAS-TO-GAS HEAT EXCHANGERS
NORAM BRICK-LINED ACID TOWERS
NORAM SULFUR & SPENT ACID BURNERS
NORAM CELLCHEM SULFUR BURNERS
NORAM ANODICALLY PROTECTED ACID COOLERS
NORAM SX® ACID COOLERS
NORAM SX® TOWERS AND NORAM SX® PUMP TANKS

NORAM EQUIPMENT INTERNALS, PERIPHERALS AND ANCILLARY EQUIPMENT

NORAM HP™ SADDLE PACKING FOR ACID TOWERS
NORAM SMART™ ACID DISTRIBUTORS FOR ACID TOWERS
NORAM TROUGH ACID DISTRIBUTORS FOR ACID TOWERS
NORAM SX® CHIPGUARD CG™ ACID STRAINER
NORAM ENTRAINMENT MITIGATION DEVICE (EMD)
NORAM ACID DILUTION SYSTEMS
NORAM SX® MATERIAL
NORAM SX® ACID DISTRIBUTORS
NORAM SX® PIPING
NORAM SX® VALVES
NORAM GAS DUCTING
NORAM DAMPER
NORAM SULFUR GUNS

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