



Transport

Container Tank

Container tanks are used to transport gas and liquid on the same vessels as standard shipping containers. Stainless steel is chosen for this application because of its strength and ability to withstand the corrosive environment onboard a ship at sea.



Location/environment | WORLDWIDE/OUTDOOR

Product | STAINLESS STEEL PLATE

Fabrication process | FORMING AND WELDING

Grade/surface | 410L, TTS443, 316L

Material thickness/diameter

Weight

Competing material | CARBON STEEL

Date of completion | 2007

Manufacturer

Material supplier | TISCO

Source of information | TISCO

Remarks

Industrial Machinery

Autoclaves

This type of autoclave is often manufactured with a layer of carbon steel, lead lining and brick lining. Replacing these layers with duplex stainless steel grade SAF2205 and changing the design slightly has led to improvements in process, performance, safety, maintenance, and cost to manufacture.



Location/environment | SOUTH AFRICA/OUTDOOR

Product | STAINLESS STEEL PLATE

Fabrication process

Grade/surface | SAF2205

Material thickness/diameter

Weight

Competing material | CARBON STEEL

Date of completion | 2008

Manufacturer | IMPALA PLATINUM HOLDINGS

Material supplier

Source of information | SASSDA

Remarks

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Industrial Machinery

Biogas Plant

The plant is made of Verinox coil with LIPP bending technique. Verinox coil consists of two layers, one of stainless steel and the other of galvanised iron. The layers are connected using pressure adhesion.



Location/environment | SOUTH KOREA/OUTDOOR

Product | COLD ROLLED STAINLESS STEEL SHEET

Fabrication process | FORMING AND BENDING

Grade/surface | STS316T/2B

Material thickness/diameter | 0.3 MM STAINLESS STEEL/TOTAL 2.5 MM

Weight | 10 TONS

Competing material | PLASTIC, CARBON STEEL

Date of completion | OCTOBER 2008

Manufacturer | JUNGLIHN NATURAL INDUSTRY

Material supplier

Source of information | KOSA

Remarks | MATERIAL THICKNESS CAN BE MODIFIED DEPENDING ON THE CUSTOMER'S PREFERENCE OR PURPOSE.

Industrial Machinery

Bipolar Plates for Fuel Cells

The production costs of fuel cells need to be significantly reduced before the technology can gain commercial acceptance. The Proton Exchange Membrane fuel cell stack contains the membrane electrode assembly, bipolar plate, seal, and end plate. Of these components, the bipolar plate is one of the most costly and problematic to produce.

The bipolar plate is a multi-functional component in a PEM fuel cell stack. Its primary function is to supply reactant gases to the gas diffusion electrodes via flow channels. Stainless steel grade 444 is an excellent material to use for the bipolar plates. It is comparable to austenitic 316 grade in corrosion resistance. It also has the advantage of being significantly less costly than 316 grade.

The Mexican Centre for Research and Technological Development in Electrochemistry (CIDETEQ) has undertaken research which shows that grades 316 and 444 both exhibit good performance in the fuel cell. The plate underwent 500 hours of operational testing.



Location/environment | QUERÉTARO, MÉXICO/INDOOR

Product | COLD ROLLED STAINLESS STEEL SHEET

Fabrication process | CUTTING AND MACHINING

Grade/surface | GRADE 444

Material thickness/diameter | 3.43 MM

Weight | 0.250 KG

Competing material | STAINLESS 316, 316L AND GRAPHITE

Date of completion | MAY 2008

Manufacturer | CIDETEQ AND INMEC SA DE CV

Material supplier | THYSSENKRUPP MEXINOX

Source of information | CENDI

Remarks

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