

# CTS

# MAGAZINE

CTSMAGAZINE | ISSUE 2020



**ARAMCO TANK  
SEAL ORDERS**

**FULL CONTACT  
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MEXICO**

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FULL CONTACT  
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# CTS

[WWW.CTS.GLOBAL](http://WWW.CTS.GLOBAL)

SYSTEMS AND PRODUCTS FOR INDUSTRIAL CARGO TRANSFER AND STORAGE

# RETURNING HOME

In 2017 I decided that it was time to leave CTS to pursue my ideas about building TECS, a new company engaged in a similar field of business, carrying similar product lines. That was not an easy decision, as CTS had and has developed itself to a strong support partner in the field of specialised products and systems for atmospheric storage tanks with a global presence.

Now you truly find out the strength of a team and brand name you helped building when you are on the other side of the fence. So when the current majority shareholder in CTS approached me to consider a return the decision was much easier. So CTS has acquired TECS per the end of 2019, and as per the 1st of January 2020 I have returned to take the helm at CTS, as CEO and shareholder.

The main reasons to come back were the following:

- ▶ The strong international presence of CTS
- ▶ An excellent reputation built over the years
- ▶ A motivated and highly skilled team of colleagues
- ▶ The large number of customer and product approvals held by CTS

Now I can only confirm that these considerations have proven to be correct, and I am excited to be in a position that allows supporting all our customers, suppliers, staff and partners.

## PRODUCT DEVELOPMENTS

In recent months we have worked on several product improvements for the main product lines we distribute. These include the following main developments:

- ▶ Introduce a higher degree of design automation, to allow faster submittals
- ▶ Develop a double batten bar gasket for aluminium domes, resulting in great water tightness
- ▶ Design, test and introduce a new wax scraper design, to reduce product run-off on top of floating roof tanks
- ▶ Develop a detailed training in the area of tank seals for floating roof tanks

We will be more than happy to support you on the basis of these developments as well.

## INTERNATIONAL PRESENCE

In the past decades our international presence has played a large role in our growth supporting our customers with an international presence. Our presence has developed from being a single office in The Netherlands to being present in more than 15 countries with a local presence. In 2019 we have opened offices in the UAE and Malaysia, where in the preceding years we have opened offices in countries such as Panama and India.

We are convinced we are required to have a strong network of vital offices to allow the best possible local support. So it goes without saying that we will continue to invest in this international presence. Let me assure you of our dedication to the quality of our support to all of you, expressing our gratitude to all of you for the opportunities given to be of support and remain the partner of choice for your atmospheric storage tank related products and services,



Yours sincerely,  
CTS International Holding

Gert van Meijeren (B. Sc.)  
CEO

A handwritten signature in blue ink, appearing to be 'Gert van Meijeren'.



# IFR CONTRACT FOR LINC TERMINAL CILEGON

**CTS Indonesia has been awarded with the contract to design, supply and install 2 aluminium skin and pontoon type Internal Floating Roofs (IFR's) for LINC Terminal Cilegon Indonesia.**

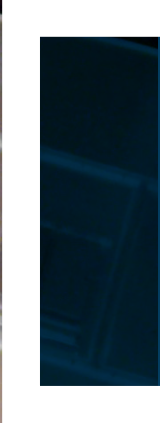
Both IFR's will be installed in 28.0m diameter tanks and will be equipped with a liquid mounted primary shoe plate seal. The vapour barrier used on this seal is manufactured from a specially formulated virgin PTFE material that is fire-safe and anti-static but also has much greater strength and elongation than normal coated fabrics.

Apart from that IFR's ordered will be designed for full scale filling

line Nitrogen pigging, for the IFR's being designed to have an adequate number of pigging vents and rim vents. Supervision and installation will be executed by CTS Indonesia in the beginning of Q2 2020.

CTS Indonesia is positive that it will live up to expectations in realising this important project in an effort to improve environmental conditions and tank safety in Indonesia!

# DOMES AND FULL FOR GPR



# CONTACT IFR'S

**Gunvor Petroleum Rotterdam has ordered aluminium domes and full contact IFR's (internal floating roofs) from CTS based on previous projects satisfactorily executed from CTS over the past decade.**

The order was for 2 new tanks as were shop built from the Dutch based tank contractor, and then were transported by barge to the terminal.

The Netherlands is probably one of the most challenging markets for CTS' distributed products as storage tanks owners have to live up to high expectations and very strict emission measurement protocols make sure expectations are met. These expectations include an emission reduction in excess of

99%, and compliance to all codes covering design and engineering, environmental performance as well as safety.

CTS has supported this special project by securing both the domes as well as the IFR's to allow the tank lifting and transport operation. Meanwhile the project has been completed resulting in new tanks with the best possible reliability paired with non-matched environmental performance for decades to come.





# DRAINMASTER ORDERS FOR OCENSA AND CENIT COLOMBIA

CTS Iberica is proud to have collaborated with several local contractors in Colombia for the tank maintenance plan of the Ocesa and CENIT storage tank farms in Colombia. Part of the scope of supply of CTS have been the following product lines:

- ▶ CTS30 liquid mounted and gas-tight primary shoe plate seal

- ▶ CTS 20 rim mounted independent secondary compression plate seal
- ▶ Drainmaster drain line hose swivels

As all products are manufactured in Western-Europe quality is guaranteed for any component supplied. Engineering the best possible products and systems is in the DNA of CTS and all its staff.

A thorough quality inspection makes sure all materials shipped will meet and exceed expectations.

Local supervision and support during installation has resulted in CTS Iberica being selected as supplier of choice for both end-users for tank seals and Drainmasters, as proper installation is the key for reliable performance.

In 2019 CTS Middle East received an order from Saudi ARAMCO to supply 48 units of specially formulated Drainmaster composite hoses to act as spare part to CTS 6" Drainmaster hose joints as installed in Aramco tank drain lines.

# ARAMCO ORDERS FOR COMPOSITE HOSES AND TANK SEALS



The CTS' manufactured Drainmasters represent the best possible choice in reliability and performance for the critical tank drain lines disposing rainwater from the top of floating roof tanks.

In addition to the composite hoses CTS ME supplied more than 5,000 linear feet (app. 1,500m) of high quality anti-static and fire-safe virgin PTFE fabric to different location and terminals.

Along with the seal parts CTS ME also supplied a special CTS7 vapour mounted primary foam seal combined with a CTS20 rim mounted and independently acting secondary seal to Mubarratz Tank Farm.

The local support by CTS ME experienced staff paired with the back-up from the CTS head office in The Netherlands will ensure the best possible performance for the products and systems supplied under CTS' responsibility.

# 28 DOMES ORDER PROJECTS IN SAUDI AR

With four large project orders confirmed, representing orders for 28 free span aluminium dome roofs CTS continues its position as market leader for the supply of ADR's (Aluminium Dome Roofs) in the Kingdom of Saudi Arabia.



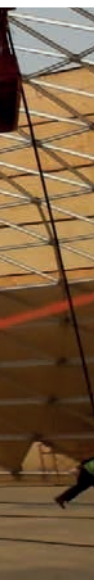
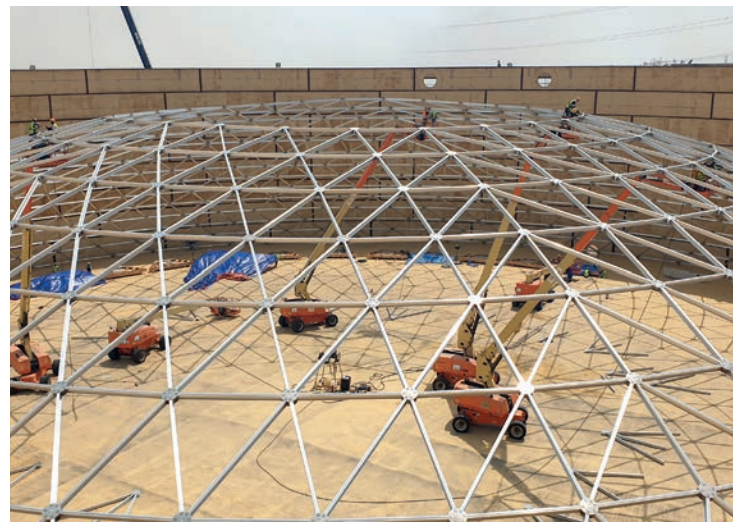
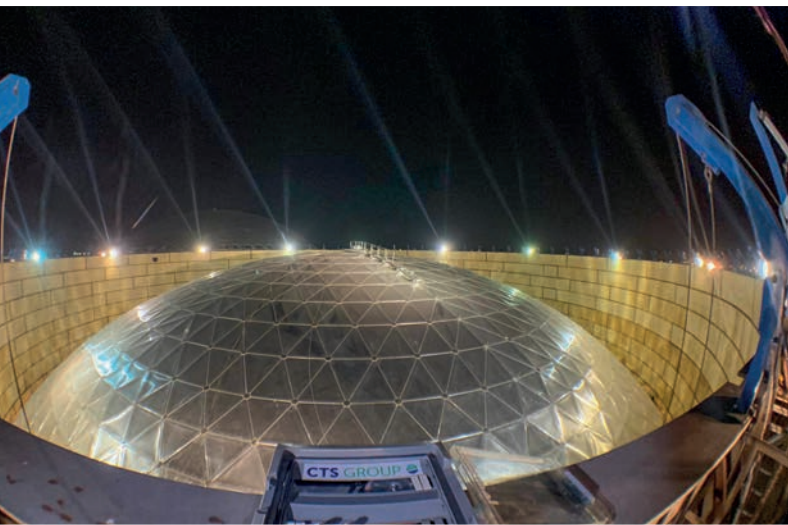
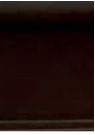
# RED FOR SWCC ABIA

These orders represent investments related to infrastructure projects for water tanks by order of Saline Water Conversion Corporation (SWCC), Kingdom of Saudi Arabia.

The 28 dome roofs ordered vary in diameter between 22m and 98.20m and will be supplied and installed under CTS supervision for more than 10 different SWCC-sites around the Kingdom. All domes will be

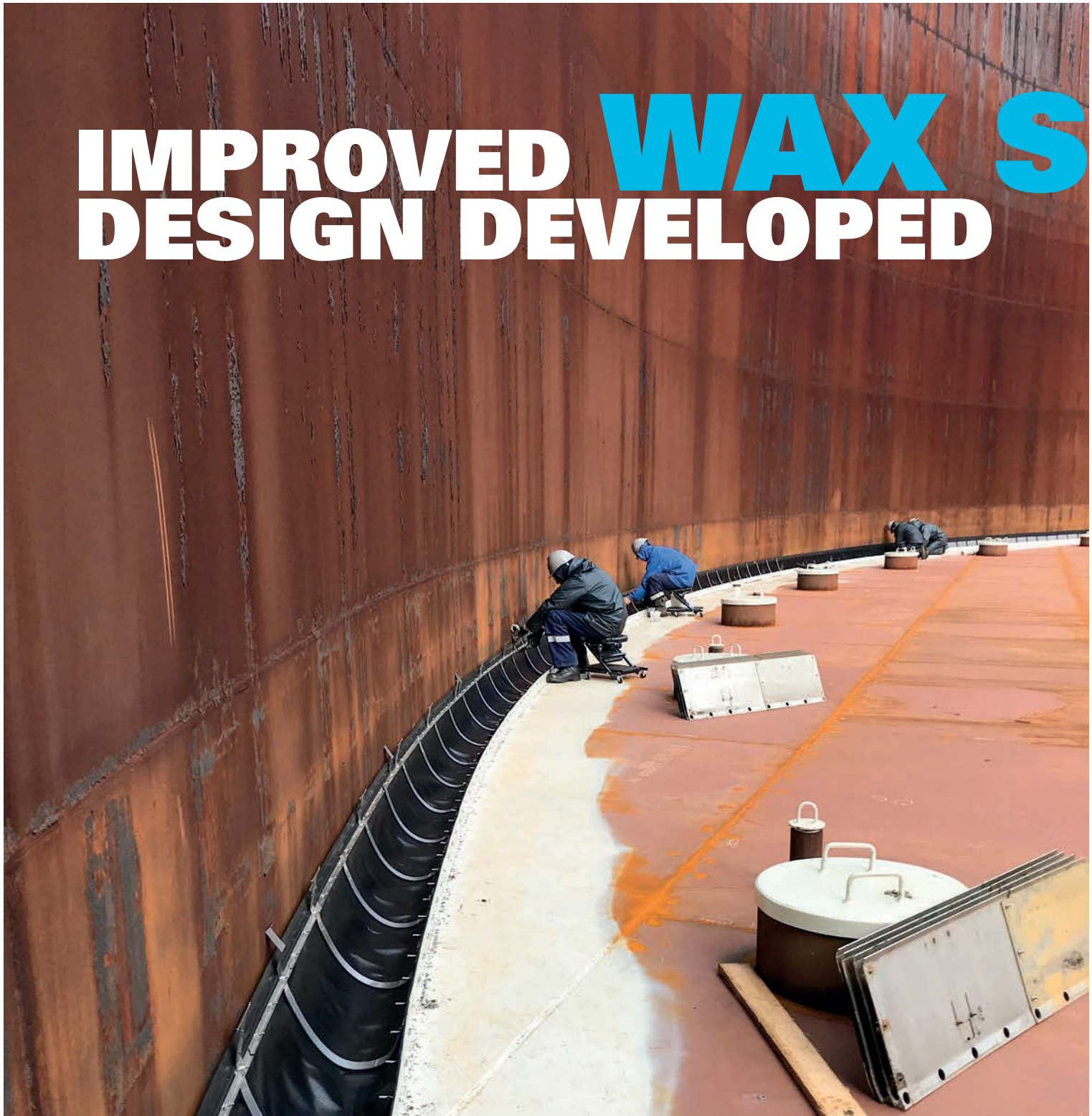
equipped with the double Silicone rubber batten bar gasket that will be able to withstand the challenging local weather conditions.

Under the supervision of CTS Middle East experienced crew we successfully installed 4 roofs for 2 sites, and with ongoing production of the remaining 24 dome roofs are estimated to be supplied and installed by the end of 2020.



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# IMPROVED **WAX** SCRAPER DESIGN DEVELOPED



By request of MOT The Netherlands CTS has developed an improved wax scraper arrangement as to be combined with the CTS30W gas-tight liquid mounted primary seal.



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# CRAPER

MOT is a joint venture Crude oil terminal in The Netherlands, and is amongst the largest Crude oil terminals in the world. Partners in MOT are the following companies:

- ▶ Aramco Overseas Company
- ▶ BP Nederland
- ▶ Esso Nederland
- ▶ Shell Nederland Refinery
- ▶ Vopak
- ▶ Zeeland Refinery (Total and Lukoil joint venture).

MOT operates 39 external floating roof tanks storing imported Crude oil for European refineries in tanks with a diameter of 84m and a height of 22m, representing a capacity per tank of app. 120,000 m<sup>3</sup> (750,000 bbl) and a total terminal capacity of app. 4.7 million m<sup>3</sup> (29.5 million bbl).

When operating floating roof tanks in products with a high viscosity or high pour point the remaining product residue on the tank shell is of major concern. These products usually involved Crude oil, Fuel oil and Condensates. The residue can be the following:

- ▶ Waxy product fractions becoming solid on the tank shell interior
- ▶ The product film left behind on the tank shell when the floating roof has travelled down in-side the tank

This waxy or liquid product deposition can damage the seal and corrode the roof area between seal and foam dam by blocking the drain holes of the foam dam, resulting in stagnant water presence in between the tank seal and the foam dam, accelerating corrosion of the roof pontoon top plate and foam dam. It can also result in product fractions contaminating the rainwater as collected on top of the external floating roof. In other cases the product deposits can damage the seals. A further negative impact is the fact that wax deposits on the tank shell will impact seal performance negatively, for seals not closing down on the tank shell, resulting in increased vapour emissions and possibly unsafe tank conditions.

CTS has been contracted to improve the wax scraper efficiency, and the revolutionary wax scraper design as extensively was factory tested has meanwhile been commissioned with impressive results for the first tank. In the top courses of the tank more than 10mm wax accumulation was removed completely, and likewise was the case for the product accumulation on the tank shell in the bottom courses. All of this was achieved without one of the more than 650 wax scrapers getting distorted or damaged. On the basis of these impressive commissioning results MOT will continue to convert all its tanks to the new wax scraper design.



# FULL CONTACT IFR'S FOR VOPAK MEXICO EXPANSION

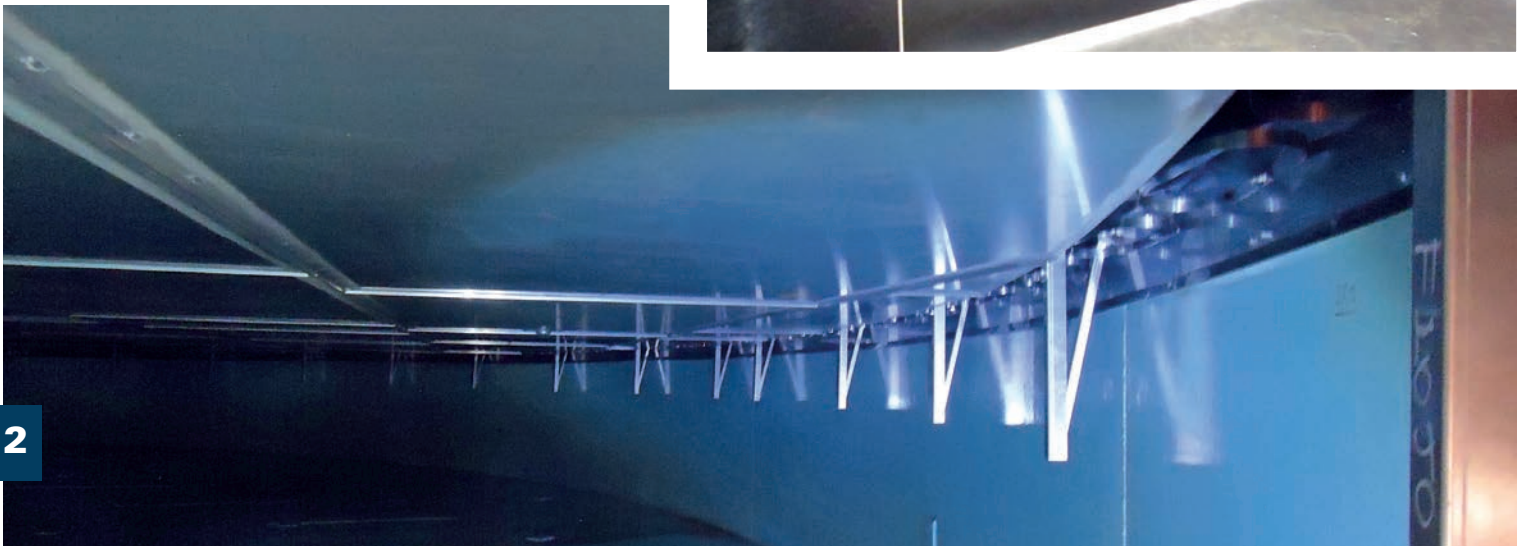
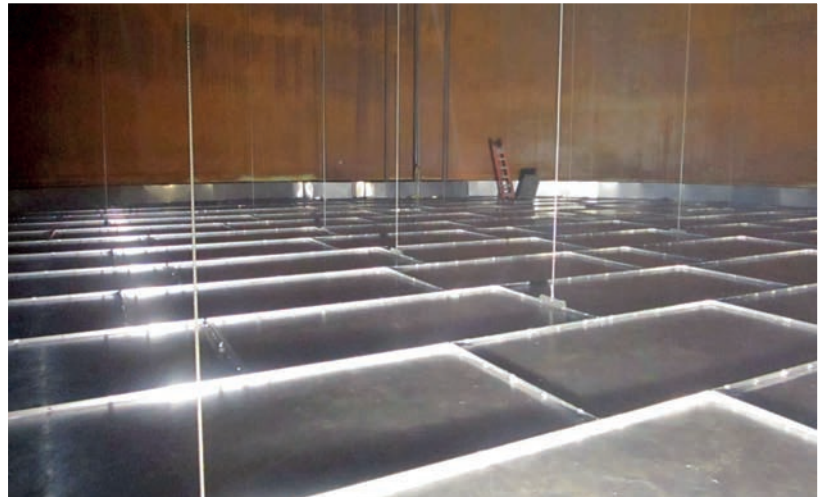
CTS Panama has been awarded with the contract to design, supply and to install 9 aluminium full contact type Internal Floating Roofs (IFR's) for Vopak Mexico's Veracruz CPP expansion project on two main phases.

The contract involves the following tank diameters:

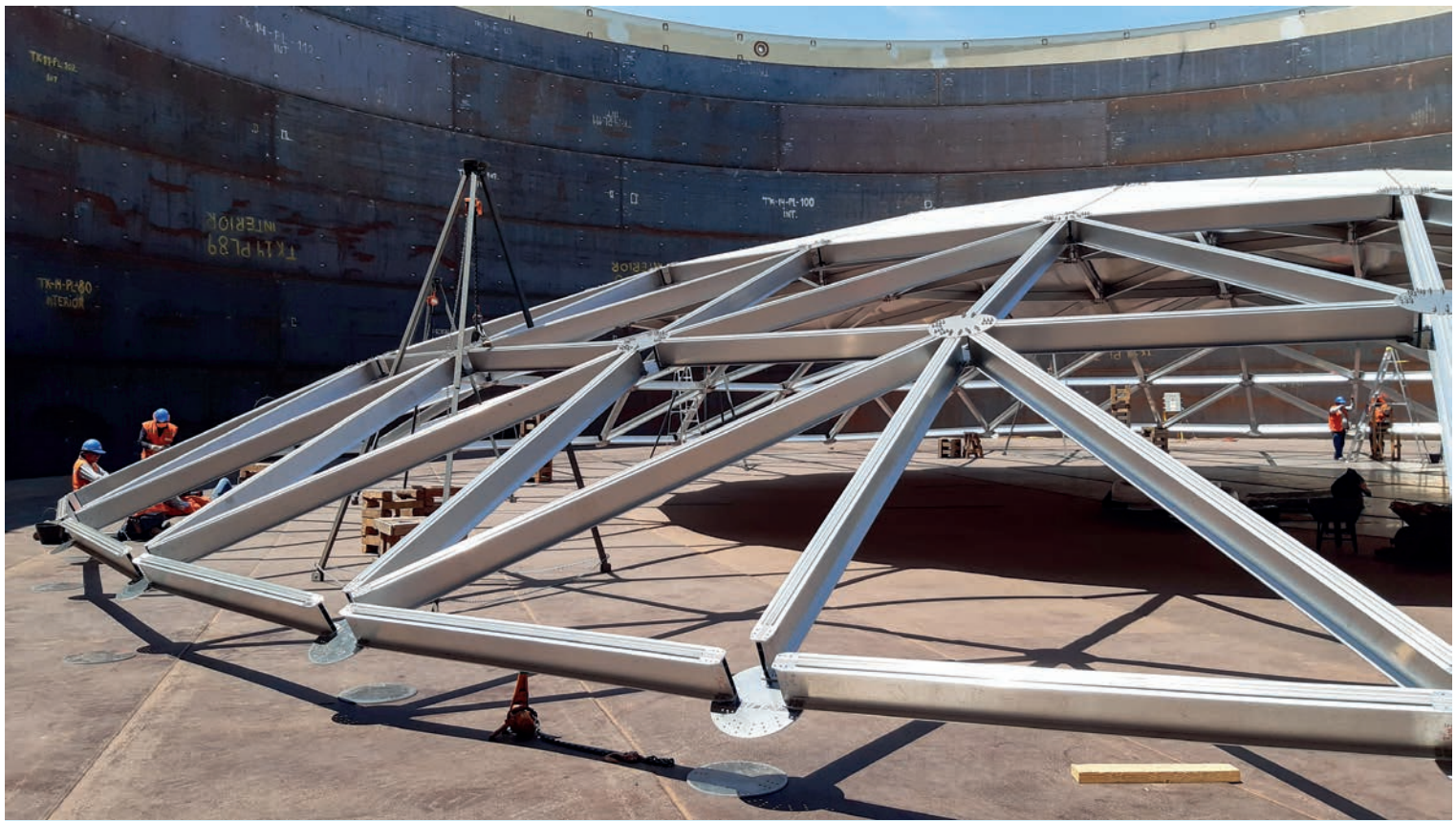
- ▶ Ø28.0m (1 tank)
- ▶ Ø28.3m (2 tanks)
- ▶ Ø22.4m (6 tanks)

All full contact HC IFR's will be installed by CTS Panama under the supervision of experienced CTS supervisors, and all HC IFR's are designed to reduce emissions well beyond 98%. It goes without saying that the full contact IFR's do meet all relevant standards such as API 650, API 653, ATEX, NFPA 11, API Chapter 19 and EPA as representing the most relevant requirements.

Phase I has already been successfully completed and the completion of Phase II is expected by the end of the 2nd quarter of 2020.



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# COPEC ORDERS 2 45M ALUMINIUM DOMES AND FSL'S FOR MAIPU

COPEC, whose company names stands for “La Compañía de Petróleos de Chile”, is one of the oldest and most important petrochemical companies in Chile with more than 80 years of operations and more than 650 petrol stations all over the country.

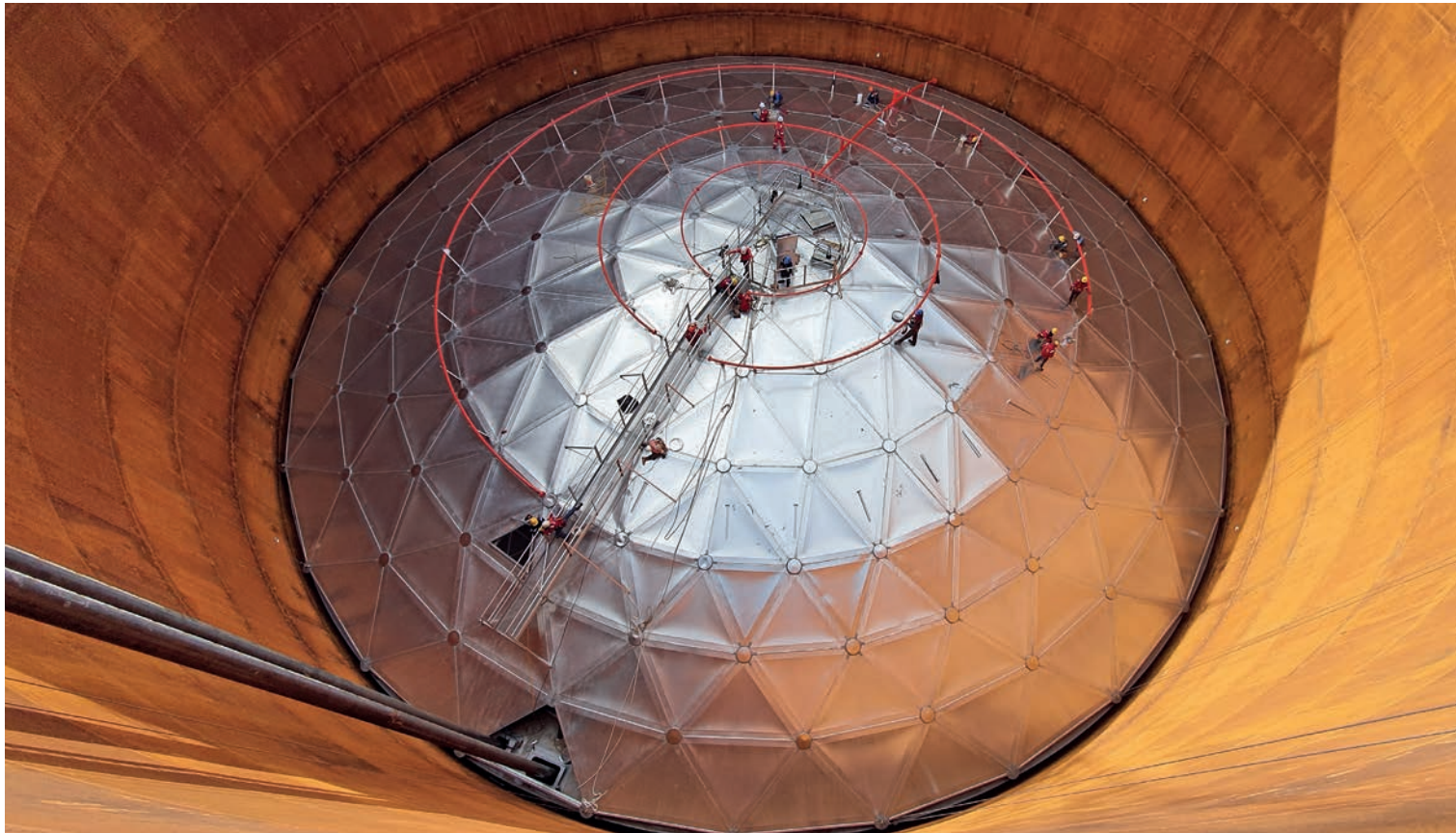
In 2019 COPEC awarded the contract for the engineering and construction of 2 20,000m<sup>3</sup> new Jet Fuel Storage Tanks for their MAIPU Terminal to the Chilean tank contractor. CTS Chile was sub-contracted to supply 2 aluminium dome roofs

and 2 18” aluminium FSL’s (Floating Suction Lines), both representing ideal and innovative solutions for these tanks which definitely will reduce the environmental impact and minimize any required maintenance in the future.

This project required a tailor-made engineering solution for the Domes as to comply with local regulations insisting on a frangible roof solution for their storage tanks. Furthermore, the Domes had to be engineered in compliance with extreme

seismic conditions, since Chile is one of the most seismically active countries in the world. Not only did CTS Chile manage to comply with both requests, but in addition the engineering of both domes has been fully certified to be in full accordance with API 650 by Lloyds Register as an independent third party.

In close collaboration with the contractor CTS Chile has successfully executed this project to the complete satisfaction of COPEC!



# ATB (VTTI) ORDERS DOMES AND CTS30W TANK SEALS

CTS Malaysia has been awarded the contract for designing, supplying and installing 6 41.4m diameter aluminium dome roofs (ADR's) and CTS30W liquid mounted gas-tight primary shoe plate seals with wax scraper for the Phase 2 project at the VTTI ATB terminal in Johor Malaysia.

ATB is a VTTI terminal located on South-West peninsular Malaysia

with well over 1 million m<sup>3</sup> storage capacity. In 2019 ATB has announced the expansion project involving 6 new tanks and the process unit to comply with the IMO 2020 for low Sulphur Fuel oil for sea going vessels.

The installation of CTS ADR's will significantly reduce emissions and product loss while as a result of this also improving

tank safety. CTS ADR's comply with the latest international design, environmental and safety standards, such as API 650, EPA and NFPA.

The project completion for the CTS scope of supply is scheduled for mid-2020, and is supported from the CTS offices in Malaysia and Singapore.

# CTS1 – CTS60 SEAL ORDER FOR SUEZ DEPOT

In 2019, CTS Middle East supplied 1 8" Floating Suction Line (single arm) for Gasoline tank at Suez Depot in Egypt. Along with the FSL, CTS provided a CTS1 liquid mounted primary scissor type shoe plate seal combined with a low rise CTS60 rim mounted and independently acting secondary wiper seal for Internal Floating Roof tanks.

The CTS1-CTS60 seal is fast becoming an important low rise seal for covered floating roof tanks. As multiple materials are available for the secondary CTS60 wiper seal

it can be combined with any liquid mounted primary shoe plate seal to provide an excellent seal that does not consume storage space and represents an economical seal.

OGI (Optical Gas Imaging) measurements conducted on series of tanks have confirmed the excellent vapour tightness for this CTS seal combination, so you can rest assured CTS remains the only tank seal supplier able to guarantee and to measure tank seal vapour tightness employing the latest technologies doing so.



# CTS PRODUCT TRAINING PROGRAM

In the process in developing as one of the largest companies supporting storage tank related products we have always taken great interest in developing and promoting product improvements as well as education through product related trainings.

CTS product trainings have been conducted for all major oil companies and independent storage tank companies such as ARAMCO, BP, ExxonMobil, Shell, Total and Vopak. Beside these end users we have also conducted training sessions for tank contractors, engineering companies and others dealing with atmospheric storage tanks.

These trainings are made to measure for professionals such as SHEQ-, maintenance and operation managers, project managers, operators, tank engineers, tank inspectors and purchasers. Naturally, other interested persons are more than welcome.

The following trainings are available:

- ▶ Introduction storage tanks
- ▶ Aluminium dome roofs (ADR's)
- ▶ Internal floating roofs

- ▶ Tank seals
- ▶ Emissions and fire prevention
- ▶ Codes and regulations

Some facts about the trainings given in 2019:

- ▶ More than 15 international end users have organised trainings
- ▶ More than 30 trainings have been conducted
- ▶ More than 250 persons have attended the trainings
- ▶ The trainings are rated with an average review score of 4.6 out of 5.0

Please contact your local CTS office if you are interested to organise a product training session, so we can help you to become a best in class storage tank operator. Whether we are given 2 hours or 2 full working days you can rest assured we will make sure to present a productive training program.

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