

## REFERENCE PROJECTS BEFORE 02.2021



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## Reference Projects before 02.2021

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### Projects of DIRK A. HENSEL INGENIERÍA S.L. (since 09.2005)

Consultancy service / review of FEED/detail design for several oil storage projects (ongoing).

Site supervision of a 20-inch LPG gas pipeline, Ghana (07.2019-09.2019)

Detail engineering of the steel structure (ladders, stairs, platforms and tank bridge) for two double wall cylindrical storage tanks according to DIN/EN code (12.2018 – 03.2019)

Detail engineering of the Steel Structure (Stairs, Ladders, Walkways, etc.) for 2x Tanks (MEG/DEG) including connecting walkway according to DIN 28017. (2018/2019)

Detail engineering of the Steel Structure (Stairs, Ladders, Walkways, etc.) for 2x Tanks (LIN/LOX) including connecting tank bridge according to EN 14122. (2018)

Detail design of roof nozzles and internal piping for a 52.000 m<sup>3</sup> LNG cryogenic storage tank according to EN 14620 (2016-2017).

Consultancy Service for a tank construction project of several aboveground external floating roof crude oil storage tanks and fixed roof service tanks according to API650 and several spherical LPG tanks according to ASME VIII division 2, (2014 – 2017).

Detail engineering of the structural steel (stairs, ladders, walkways) for a double wall storage tank according to DIN EN 14015. (2015)

Engineering for a dome roof air raising (design of temporary structure and equipment), (2015)

Consultancy Service for a tank refurbishment project on 2 aboveground external floating roof storage tanks according to API653, (08.2013-08.2015)

Detail design for 2 aboveground storage tanks (Ø19m/H10m, Ø16m/H8m) with secondary steel compartment (Ø22m/H9.3m, Ø19m/H7.3m) according to DIN EN 14015, final client Wintershall (2013)

Detail design for 3 aboveground storage tanks (Ø32m/H24m, Ø26.5m/H22m, Ø32,2m/H20m) with secondary steel or concrete compartment (Ø37m/H19.2m, Ø31.5m/H17.2m, Ø37,2m/H17.1m) according to DIN4119, final client BASF. (2013)

Material specification and detail drawings for 21x petrol storage tanks of diameters between ø6.4m thru 36.57m according API650, Final Client ENI Iraq b.v. (12.2012 – 03.2013)

Steel consumption Study of storage tanks according GOST, EN14015 and API650 (09.2012 – 02.2013)

Site assistance for roof air raising activities of a Cryogenic Ammonia storage tank (ø46.0m) according API620, Final Client OCP Morocco (12.2012)

General Orientation and main drawings for 3x Storage tanks (1x ø32.2m, 1x ø26.5m, 1x ø32.0m) according DIN 4119, Final Client BASF (09.2012 – 02.2013)

Detail design of Foam fire fighting and Protection piping for a Storage tank (ø34.0m) with cup (ø39.1m) according DIN 4119, Final client Airport Munich (06.2012)

Supervision of Tank bottom repair works (Material 1.4462) according API650 / API653 for an Ammonia Water Tank (ø15.0m) and a Urea Solution Tank (ø18.0m), Final Client SAFCO Saudi Arabia, (04.2012)

Supervision of detail engineering for 4 cryogenic double wall full containment tanks according BS 7777 (2 x 45.000 m<sup>3</sup> Propane Storage Tanks Inner Tank steel, Outer Tank concrete with liner plates, 2 x 35.000 m<sup>3</sup> Butane Storage Tanks Inner steel Tank, Outer concrete Tank with liner plates) final client OIEC, Iran (2011/2012)

Elaboration of the documentation and the specifications for QA/QC of the fabrication and installation of 4 cryogenic tanks (4x 1800 ton / 36879 m<sup>3</sup>) of liquid ammonia conform API620 and clients specifications. (2011/2012)

Detail design (GA drawings, fabrication drawings incl. material lists) for 10 petrol tanks (10x 1800 m<sup>3</sup>), include detail design of the steel structure (platforms, walkways, stairs, ladders and tank connecting bridges) conform DIN 4119. (2011)

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Detail Engineering of 4 LPG tanks (2 x 50.000 m<sup>3</sup> Propane Storage Tank, 2 x 22.500 m<sup>3</sup> Butane Storage Tank), including Basic Engineering of its Steel structure (platform, walkways, stairs and ladders) according API620 and clients project specification. 3D-modelling with PDMS of the tanks including steel structure (platform, walkways, stairs and ladders). (2010/2011)

Inspection of field erected water storage tanks in line with design requirements according to API650 and clients specification (2011).

3-D modelling with AVEVA PDMS of the tank including shell and roof nozzles as well as platforms, stairs, ladders and pipe support frames for esn Hamburg / Project ILAM. (2008/2009).

Inspection of pre-fabricated materials for one Ethylene storage tank according API620, ASTM/ASME, for adapt Network / BINA Iran / project ILAM (2009).

Detail engineering of a double wall and double roof Ethylene storage tank (Cryogenic Single Containment, 8.912 m<sup>3</sup>) according API620, ASTM/ASME and project specification incl. General arrangement drawings, detailed fabrication drawings material lists and cutting sketches, with Rudolf Schulte, for adapt Network / BINA Iran / Project ILAM. (2008/2009).

3-D-Modeling with CADWorx Plant of equipment and pipe racks for esn Hamburg / Project Wulf Milford Haven. (2008).

Supervision of the detail engineering for 12 flat bottom dome roof tanks with retaining cup (2x 10.000cbm, 3x 5.000cbm, 7x 2.000cbm) according EN14015, for ILF CONSULTING ENGINEERS, Munich. (2007/2008).

Basic engineering of nozzles, internal piping and steel structure (walkways, ladders, stairs and platforms) and 3-D modelling of the steel structure with CADWorx Plant of a 45.000cbm LNG-Tank, for adapt Network / Linde Munich / Lyse, Stavanger. (2007/2008).

Preparation of general assembly drawings and fabrication drawings including advanced bill of material and BoMs for a 13.000cbm Floating roof tank with steel retaining cup according EN14015 for Jochen Dietrich, Würzburg. (2007/2008).

Supervision of the installation of 2x horizontal earth covered Propane liquid gas tanks, 2000 m<sup>3</sup>, according PED, Final client OMV Burkhausen, (2007)

3-D modeling with CADWorx Plant of a Vacuum Ejector System (preparation of database of pipe classes, pipe routing, equipment modelling and preparation of isometrics), for esn Hamburg, Projekt Körting / BINA Rafenerie Indien. (2007).

Preparation of final documentation for 2 liquid gas storage tanks (Butane 30.126 to and Propane 60.126 to) according API620, ASTM/ASME and project specifications, for adapt Network / INTECSA Uhde S.A. supplied to Iran (10.2006).

Inspection of pre-fabricated materials for 2 liquid gas storage tanks (Butane 30.126 to and Propane 60.126 to) according API620, ASTM/ASME, for adapt Network / INTECSA Uhde S.A. supplied to Iran (2006).

Preparation of final documentation for 3 fixed roof storage tanks according API650, ASTM/ASME and project specifications, for adapt Network / Oiltanking GmbH Malta Ltd. (10.2006).

Preparation of general assembly drawings and plant layouts for the permit engineering of 13 fixed roof storage tanks with retaining cup (Petrol products 7x 43.000m<sup>3</sup>, 6x 24500m<sup>3</sup> according API650, ASTM/ASME), for adapt Network / Oiltanking GmbH Tank Terminal Antwerp, Belgium (09.2006).

Preparing of detail and general drawings for 2 fixed roof storage tanks with internal floating deck (Petrol products 20.000m<sup>3</sup>) incl. material lists, according API650, ASTM/ASME and project specifications, for Jan van Ommen / adapt Network for Oiltanking Malta Ltd. (08.-11.2006).

Technical Evaluation of Tender Documentation for 84 fixed roof storage tanks (2.000m<sup>3</sup>, 3.000m<sup>3</sup>, 5.000m<sup>3</sup> and 10.000m<sup>3</sup> in 13 depots in Rumania) according EN 14015 for ILF CONSULTING ENGINEERS, Munich (2006).

Preparing of detail and general drawings for 1 fixed roof storage tank (Petrol products 35.000m<sup>3</sup>) incl. material lists, according API650, ASTM/ASME and project specifications, for Jan van Ommen / adapt Network for Oiltanking Malta Ltd. (06.-08.2006).

Preparing of Inquiry Documentation for 84 fixed roof storage tanks (2.000m<sup>3</sup>, 3.000m<sup>3</sup>, 5.000m<sup>3</sup> and 10.000m<sup>3</sup> in 13 depots in Rumania) according EN 14015 for ILF CONSULTING ENGINEERS, Munich (2006).

Preparing of detail and general drawings for 3 fixed roof storage tanks (Petrol products 2x35.000m<sup>3</sup> and 1x20.000m<sup>3</sup>) incl. material lists, according API650, ASTM/ASME and project specifications, for Jan van Ommen / adapt Network for Oiltanking Malta Ltd. (2005 - 2006).

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### Projects as a freelancer (DES-CON Ingenieurbüro, from 08.2001 to 08.2005)

Preparing of general drawings for 2 liquid gas storage tanks (Propylen 14.601m<sup>3</sup> / Ethylene 19.553m<sup>3</sup>) for adapt Network / GOC Engineering GmbH / IOCL Ltd. Indien, (2005).

Preparing of detail drawings, general drawings and specifications for the rebuilding of a LNG tank (22.200m<sup>3</sup>) incl. material lists, according DIN 4119, API620, DIN ISO and project specifications, preparation of final documentation, for adapt Network / GOC Engineering GmbH / RWE (2005).

Preparation of final documentation for 8 fixed roof storage tanks with retaining cup, for adapt Network / Oiltanking GmbH tank terminal Terneuzen (2004).

Preparing of general and detail drawings for pontoon floating roof (4x Ø 12 m) incl. material lists, according API650, ASTM/ASME and project specification, Estonia, for Jan van Ommen / adapt GmbH / Oiltanking GmbH (2003).

Project coordination and material inspection for 2 liquid gas storage tanks (Butane 30.126 to and Propane 60.126 to), according API620, ASTM/ASME and project specification, for adapt Network / INTECSA Uhde S.A. supplied to Iran. (2003 - 2005).

Preparing of detail drawings, general drawings and material specification for 5 fixed roof storage tanks with retaining cup (MEG/Hot oil) and coordination of the steel structure engineering, according DIN 14015, DIN ISO and project specification, consultant for reparation of the final documentation, for adapt Network / LINDE GAS AG supplied to Hammerfest / Norway for STATOIL ASA (2003 - 2004).

Preparing of Statically position plan with typical details incl. advanced list of materials for process skid, for ESN GmbH / Tractebel Gas Engineering (2003).

Preparing of detail drawings, general drawings and material specification for 3 fixed roof storage tanks incl. steel structure drawings (AGO 150m<sup>3</sup>, Naphtha 150m<sup>3</sup>, Caustic 300m<sup>3</sup>), according DIN4119, ASTM/ASME and project specification, preparing of final documentation, for adapt GmbH / LINDE GAS AG supplied to Hungary / TISZAI VEGYI KOMBINAT RT. (2003).

Preparing of detail drawings (Bottom, Shell, Roof) for a gasometer (Ø 33m, H 20m, V 14.800m<sup>3</sup>) for Jan van Ommen / Dipl.-Ing.Quick GmbH / SHELL CAPSA (2003).

General and detail drawings for pontoon floating roof (Ø 26.5 m), according API650, ASTM/ASME and project specification, Estonia, for Jan van Ommen / adapt GmbH / Oiltanking GmbH (2002)

General and detail drawings for pontoon floating roof (Ø 14 m), according API650, ASTM/ASME and project specification, Estonia, for Jan van Ommen / adapt GmbH / Oiltanking GmbH (2002).

Preparing of detail drawings (bottom and shell) for 2 liquid gas storage tanks (Ethylene 32.000m<sup>3</sup> / Ethan 18.000m<sup>3</sup>), according API620, for MARALDI S.p.A. Italien (2002).

Preparing of general drawings for 2 liquid gas storage tanks (Ethylene 32.000m<sup>3</sup> / Ethan 18.000m<sup>3</sup>), according API620 for MARALDI S.p.A. Italien (2002).

Preparing of inquiry documentation for 3 fixed roof storage tanks (AGO 150m<sup>3</sup>, Naphtha 150m<sup>3</sup>, Caustic 300m<sup>3</sup>), according project specification for LINDE GAS AG, Hoellriegelskreuth (2002).

Preparing of detail drawings, general drawings incl. lists of materials and specifications for 2 liquid gas storage tanks (Ethylene 16.000m<sup>3</sup> / C2+ 17.700m<sup>3</sup>), according API620, ASTM/ASME and project specification, preparing of final documentation, for Jan van Ommen / adapt GmbH for LINDE GAS AG supplied to Iran. (2001 - 2002).

Project coordination and material inspection for 2 liquid gas storage tanks (Butane/ Propane 26.000m<sup>3</sup>) according API620, ASTM/ASME and project specification, preparing of final documentation, for adapt GmbH for LINDE GAS AG supplied to Iran (2001 - 2002).

## Reference Projects before 02.2021

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### Projects as an employee

**Project engineer, BRUNEL Multec GmbH, Kiel (11.2000 – 07.2001)**

Consultant and supervision for the detail engineering for 4 crude oil floating roof tanks, according API650 and project specifications in Tunis, to be supplied to Iraq.

Detail design, including preparing of drawings and material specification, for 2 liquid gas storage tanks (ethylene 16.000m<sup>3</sup> and C2+ 17.700m<sup>3</sup>), according API620.

**Project engineer, Steiner GmbH & Co. KG, Wilnsdorf (01.1999 – 03.2000)**

Technical project manager for supply and erection of one 105.000m<sup>3</sup> LNG Tank in Cartagena, Spain, according API620, ASTM/ASME, DIN, BS, Spanish standards and project specifications – responsible for the technical aspects of the project, time control and assistance of cost control.

Project engineer for a gas metering plant to be supplied to Iran, according ASME/ASTM, DIN and project specifications.

**Design draughtsman, Whessoe LGA Gas Technology Ltd., Darlington, Great Britain (01.1998 – 12.1998)**

Detail design work including calculations for 1 LNG tank (105.000m<sup>3</sup>) according API620, ASTM/ASME, DIN, BS and project specification, using AutoCAD, MathCAD and applications of MS Office.

Consulting drawing work for 2 LNG tanks to be supplied to Trinidad and 2 LNG tanks to be supplied to Greece.

**Project engineer, Noell-LGA Gastechnik GmbH, Hamburg (02.1996 – 12.1997)**

Detail design including drawings and material specification for silos, several petrol and liquid gas tanks according DIN4119, API650 and API620, ASME/ASTM and project specifications.

Project engineer for 1 LNG tank (105.000m<sup>3</sup>) to be supplied to Cartagena, Spain - responsible for cost and time control of the structural steel of the tank as well as detail design of the tank body.

**Draughtsman, JPM Ingenieurtechnik GmbH, Henstedt-Ulzburg (04.1991 – 09.1995)**

Detail design for silos, several petrol tanks (with fixed and floating roofs) and liquid gas tanks according DIN4119, API650, API620, ASME/ASTM and project specifications as required using PC-applications and CAD.

### Education History and Seminars

- (1) Training of developing of catalogues and specification for AVEVA PDMS, Hamburg, 03.2011,
- (2) Basic administration training for AVEVA PDMS, Hamburg, 02.2011,
- (3) Basic course 3-D Modelling for CAD-System AVEVA PDMS, Hamburg, 2009,
- (4) Diploma of European Welding Engineer (EWE), SLV Nord Hamburg, Germany, 2002,
- (5) Diploma in Mechanical Engineering, University of Rostock, Germany, 1991.
- (6) Certificate in Information Technology, University of Rostock, Germany, 1991,  
including:
  - operating systems i.e. UNIX, MSDOS,
  - programming languages i.e. Turbo-Pascal, FORTRAN y dBase,
  - advanced computer technology i.e. Graphic Standards GKS/R
- (7) Certificate in design of the structure of a Database for a ship piping software, University of Rostock, Germany, 1991.
- (8) Certificate of Computer Aided Design, Technical Collage, Bielefeld, Germany, 1990  
including:
  - 2-dimensional CAD
  - 3-dimensional CAD
  - developing of software utilities to be linked in to the main software
- (9) Certificate of Cost Control and Management, University of Rostock, Germany, 1991.

### Used Software (license holder)

- Autodesk AutoCAD 2015
- AVEVA PDMS 11.6 / 12.0 (expired)
- Microsoft office 2010
- Microsoft office Project 2007
- Adobe Acrobat X