



Ship

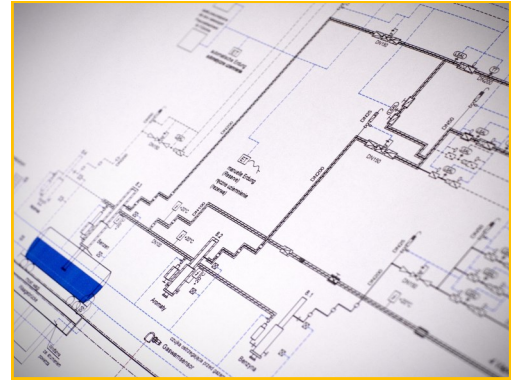
Loading- and unloading systems



LOADING YOUR FUEL

Dipl.-Ing. SCHERZER GmbH

Company profile:



Welcome to Dipl.-Ing. SCHERZER GmbH

The company's field of activities includes the planning and turn-key construction of plants for handling and storing liquid and gaseous products. Based on more than 50 years of experience in these sectors, the company offers a high degree of professionalism and is a leader in its field.

Our customers from the petroleum and chemical industries and from a range of other sectors at home and abroad value our groundbreaking technology and our high quality standards as well as our ability to address custom applications while optimizing the economic and environmental aspects of our designs.

Quality - Safety - Service

Social and environmental policy requirements place high demands on our company on a daily basis, as do constantly changing safety guidelines. These standards are our top priority. Consequently, all areas of the company are subject to a quality management system and certified in accordance with DIN EN ISO 9001:2015.

As a specialized company, we do, of course, have all legal permits necessary to operate both in Germany and abroad.

Our subsidiary, SCHERZER Umwelttechnik GmbH, will handle our after-sales service, allowing us to be there for you long after a successful start-up. Maintenance, the procurement of spare parts, and other important services will guarantee the continuous operation of your plant.

Range of services

Our comprehensive range of services includes:

- Concept design including essential performance characteristics
- Basic engineering
- Detail engineering
- Delivery of equipment
- Assembly of unit (for turnkey contracts)
- Supervision (for assembly by customer)
- Training
- Commissioning
- Performance check
- Documentation and handover
- Services

Scope of supplies and services

Our portfolio covers a wide range, allowing us to meet almost every requirement. In addition to new construction, it also comprises the retrofit, conversion or expansion of existing plants for the loading and unloading of:

- Railcars
- Tank trucks
- Ships

for transshipment of:

- Light products (petrol/gasoline, diesel, jet fuel, etc.)
- Dark products (crude oil, bitumen, etc.)
- Chemical products (arenes, acids, etc.)
- Stable gas condensate
- Liquid gases (propane, butane, LPG, etc.)
- Biodiesel / Bioethanol

The **scope of our services** covers also the new construction and reconstruction of tank farms as well as peripheral components and systems such as:

- Vapor recovery units (VRU)
- Vapor pendulum systems
- Fire-fighting systems
- Product and pump systems
- Drainage systems
- Power-supply systems
- Automation technology
- Control and monitoring systems
- Product data logging
- Railroad lines



Ship loading and unloading facilities for inland and seagoing vessels

For over 50 years our group has been involved in designing and turn-key construction of loading and unloading facilities for and storage of liquid and gaseous products. Our customers come from the oil, chemical and various other industries.

Scherzer does not only plan and supply the ship loading and unloading facilities, but also designs the complete loading and unloading plant covering all disciplines including instrumentation, loading computers, measured value loggers, piping etc.

In 1979 the first ship loading facility was upgraded by Scherzer. Since then we have been planning and supplying such facilities either as individual jobs or part of a tank farm construction project.

The individual projects can be gathered from the reference list for ship loading and unloading facilities.

Facilities for loading and unloading inland and seagoing vessels and the jetty are designed based on the local conditions.

Transfer stations are articulated steel tube loaders or hose safety systems with drift protection and disconnecting devices to prevent product from being discharged into the water.

The product is stored and removed through a combined system of manifolds to the tanks and the tanker respectively.

After each loading operation the relevant manifold is emptied by a residue discharge system.

Loading

The vessel is loaded from the involved tanks by the pumps of the tank farm via a calibrated and temperature-compensated measuring system. The measured values are logged automatically through loading computers and manually through tape printers.

The loading quantity is pre-selected and loading stops automatically.

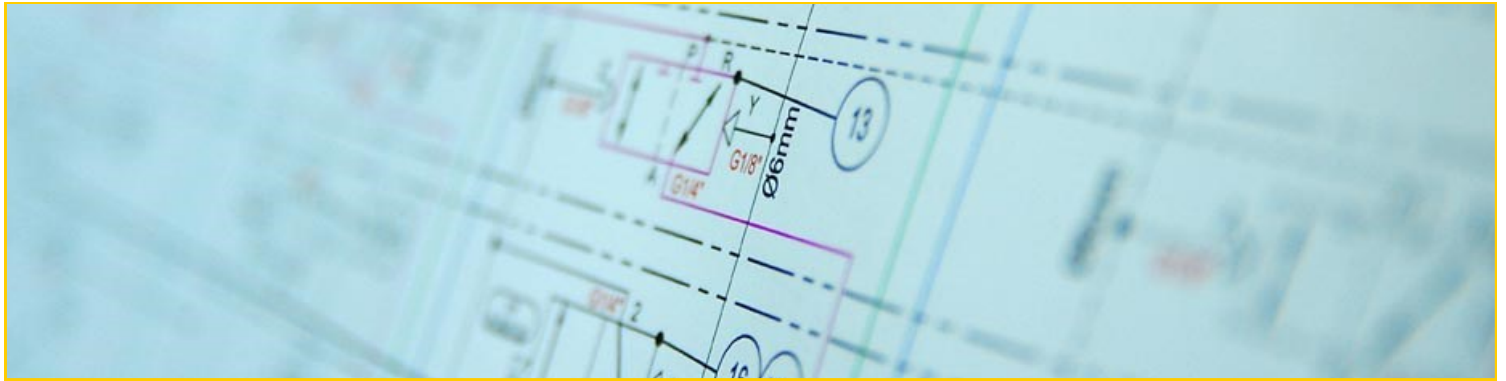
The hydrocarbon vapours developing during the loading operation can be returned to a vapour recovery system involving the tanks.

Unloading

Unloading is effected by the vessel's own pumps or stationary pumps on the jetty.

The measured values should be preferably logged by calibrated tank level meters because volumetric measuring devices require a more sophisticated design because of the high vapour quantities developing during the pump-out phase.





Planning and Documentation

Ship loading - and unloading facilities are designed in a composite engineering and planning work.

The main works of such facilities are:

- Construction works
- Pipe works
- Steel works
- Automation- and control systems
- Measurement systems (temperature compensated or mass metering)
- Fire fighting systems
- Protection of water ways by compressed air barrier
- Earthing and lightning protection
- Cables and connections
- Mounting works of supplied deliveries
- Slop systems
- Pump stations
- VRU (Vapour Recovery Unit)
- Buildings (Control room, electrical rooms, office buildings, substations, fire fighting buildings, etc.)

Engineering is prepared as follows depending on the progress of planning:

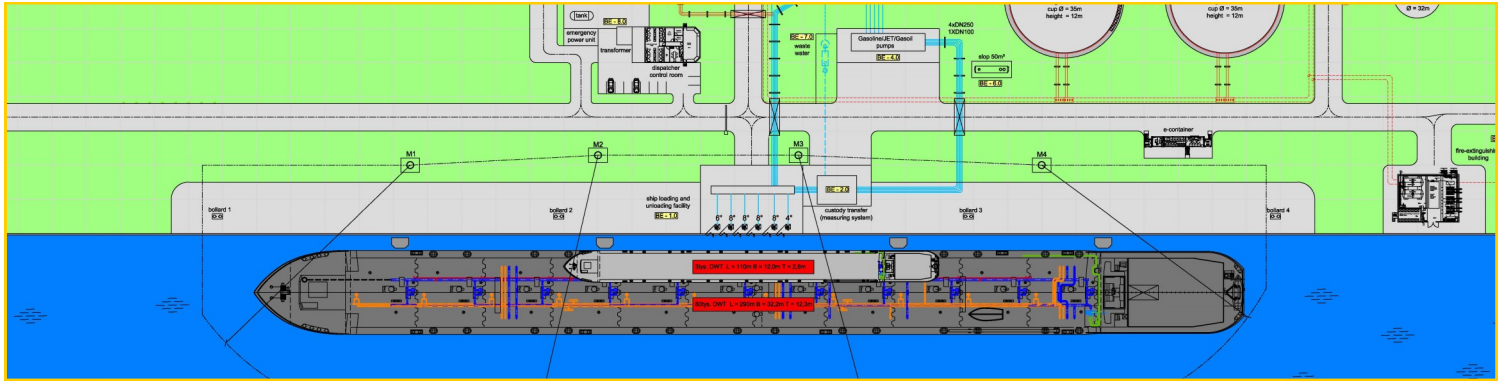
A) Determination of bases

- Determining of the requirements for the solution of ship loading - and unloading facilities planning.
- Determining the scope of services and the required preparatory work such as soil investigation and survey work.
- Summarising the results.
- Selecting and inspecting similar objects.

B) Preparatory planning

- Project and planning preparation, analysis of bases.
- Investigation of possible solutions for constructive and structural design, expedience, economy with due consideration given to environmental aspects.
- Preparation of the planning concept including alternative possible solutions as drawings and evaluation documents.
- Clarification and explanation of major specific connections, processes and conditions.
- Revision of the planning concept according to the requirements of the customer and authorities.
- Elaboration of the final cost estimates based on final preliminary planning.
- Compilation of the results of preparatory planning.





c) Design planning

- Preparation of the planning concept with due consideration of all specified requirements, with the assistance of other technical parties involved in planning up to the complete design.
- Elaboration of the explanatory reports.
- Drawings of the overall design.
- Preparation of a construction time and cost schedule.
- Summarising all design documents

d) Approval planning

- Preparation of the documents for the necessary procedures of public law to enable the customer of forwarding it to the local authorities.
- Completion and adaptation of the planning documents.

e) Execution planning

- Incorporating the results from approval planning with due consideration given to all technical requirements and utilising the inputs of other technical parties involved in planning up to the solution ready for execution.
- Drawings and calculations of the object with all individual data necessary for execution, including detail drawings in the scales required.
- Preparation of the bases for the other technical parties involved in planning and integration of their inputs up to the solution ready for execution.
- Continuation of execution planning during the implementation of the object.

f) Construction supervision management

- Supervision of the local construction supervisors, co-ordination of the technical parties involved in object surveillance, in particular checks for compliance and release of the plans of third parties.
- Preparation and monitoring of a schedule (bar diagram).
- Subjecting the executing companies under delay.
- Acceptance of services and supplies together with the local construction supervisors and other technical parties involved in planning and object surveillance, preparation of a record of the acceptance results.
- Application for and participation in the acceptance by authorities.
- Handing over of the object including compilation and submission of the required documents, e.g. acceptance reports and test reports.
- Preparation of maintenance regulations for the object.
- Monitoring the tests of the plant parts and the overall plant for proper functioning.
- Listing the statutory periods for warranty claims.
- Determination of costs and cost controlling.

g) Documentation

- Compilation of the drawings and calculation results of the tank yard on completion, As-Built documents.
- Compilation of plant certificates, operating manuals, maintenance and repair manuals as well as approvals of authorities for the operation of the ship loading - and unloading facility.
- Manuals and release of the overall project.

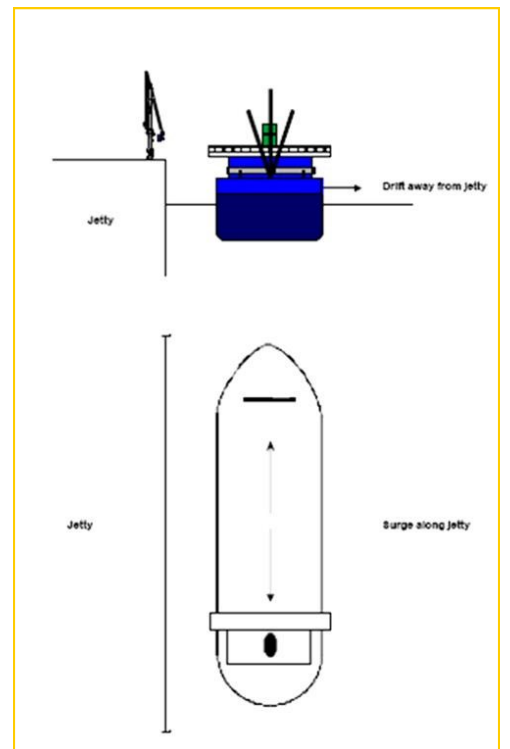
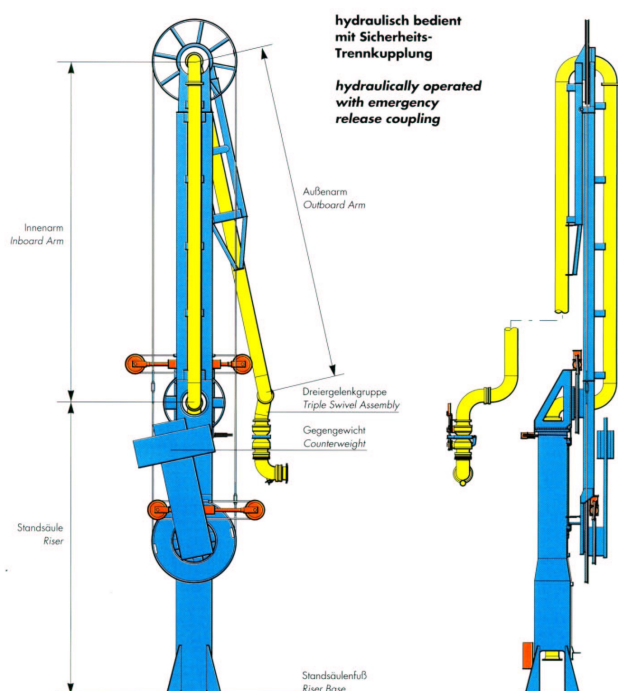




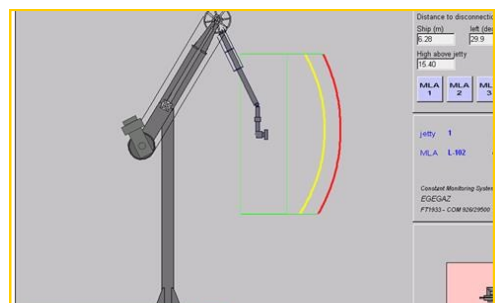
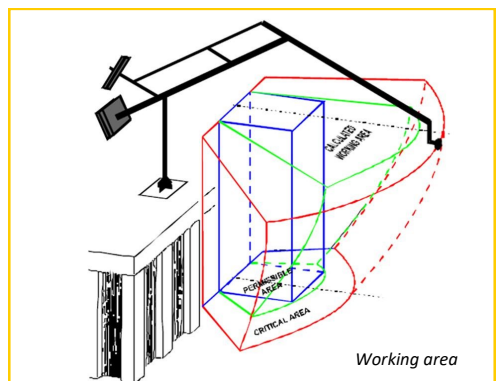
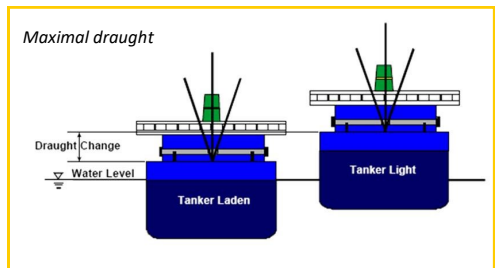
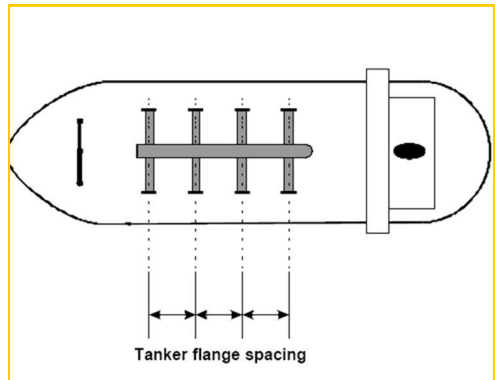
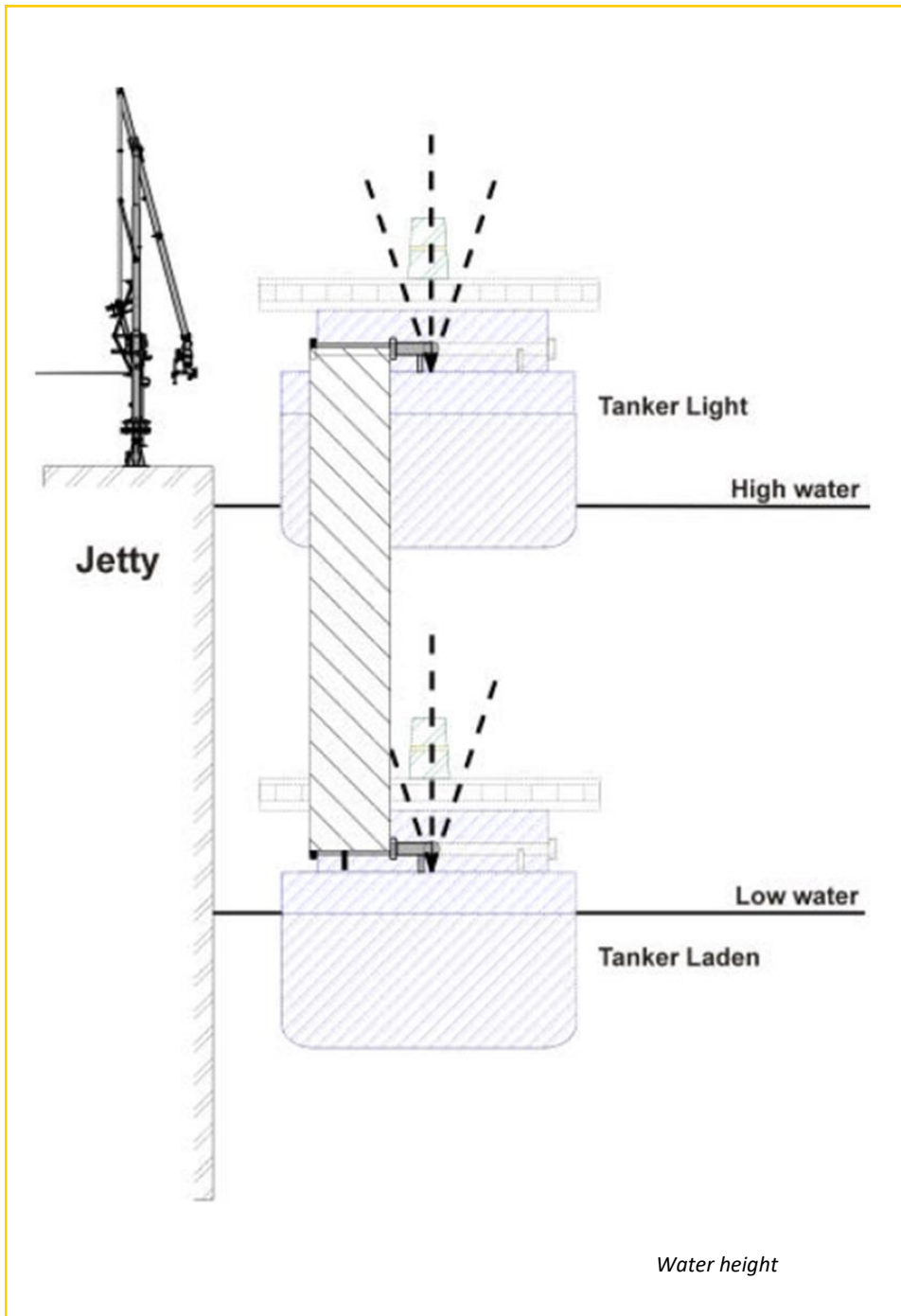
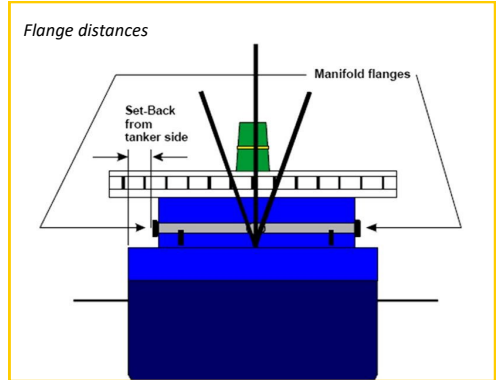
Design of ship loaders

The following parameters have to be specified before planning of the ship loaders:

- Products
- Range of temperature
- Maximal flow rate
- Loading time
- Flange connection
- Working area loader
- Kind of operation (manually / hydraulically)
- Drift securing systems
- Emergency release coupling
- Flange distance
- Sample extraction device



Drift & Surge





Design of measurement system

The following parameters of the measurement system has to be specified before planning:

- Products
- Range of temperature
- Maximal flow rate
- Obligation of calibration of the measurement system
- Billing according Volume VT or Mass
- Counter systems and types
- Nominal pressure ratings
- Control valve systems and types
- Full- and empty systems

Design of pipes and valves

The following parameters for pipes and valves have to be specified before planning:

- Products
- Range of temperature
- Maximal flow rate
- Valve systems and types
- Nominal pressure ratings
- Flange design
- Scope of delivery and services
- Acceptance test

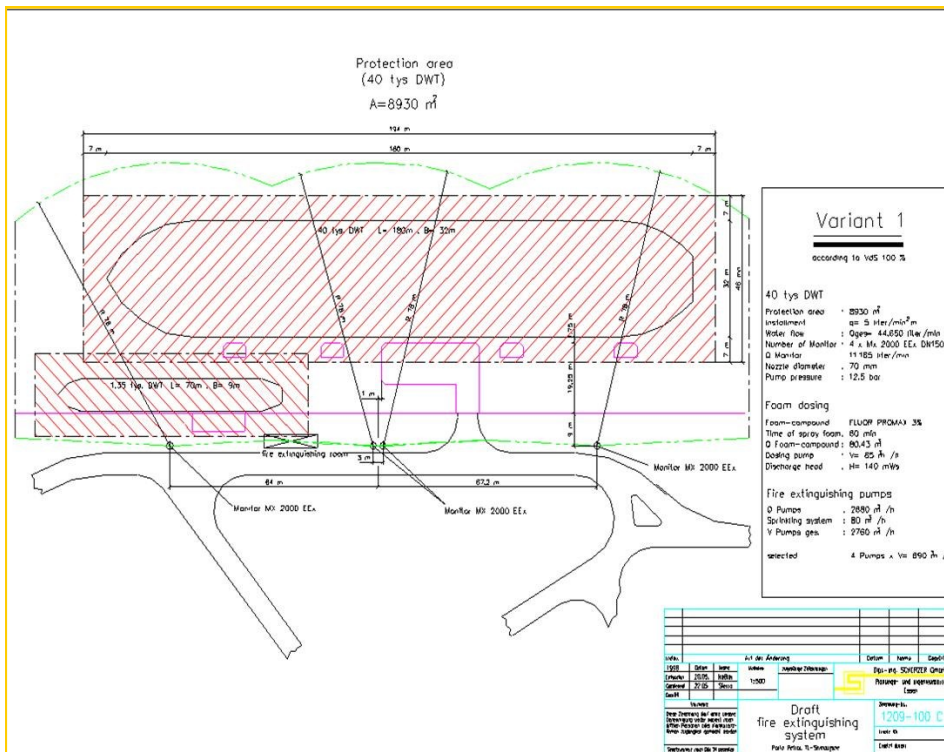
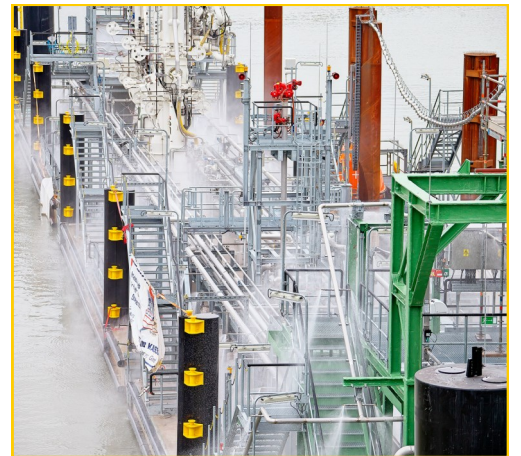


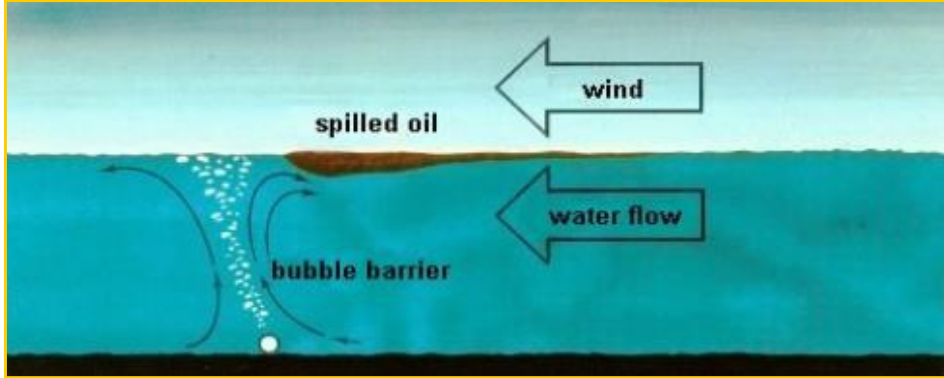


Design of fire fighting systems

The following parameters of the fire fighting system has to be specified before planning:

- Extinguishing medium
- Range of temperature
- Extinguishing area
- Requirements of the local fire fighting department
- Acceptance tests
- Scope of delivery and services





Design of compressed air barriers

The following parameters of the compressed air barrier system has to be specified before planning.

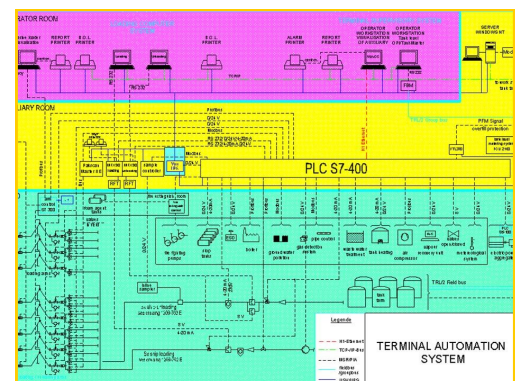
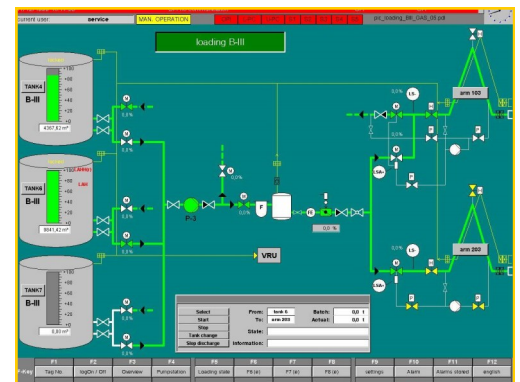
- Air compressors
- Working area
- Requirements of local authorities
- Scope of delivery and services



Automation— and control system

The following parameters of the automation—and control system has to be specified before planning.

- Interfaces
- Signal exchange with the customer
- Remote control via ISDN
- Kind and scope of automation
- Scope of delivery and services





Training, supervision and commissioning

Training, supervision and commissioning is performed by high qualified specialists of Dipl.-Ing. SCHERZER GmbH.

In-house training is generally combined with the function – test of the facility. Therefore it is secured that training activities are performed directly at control systems of the facility. During training substantial functions are explained as well as the complete engineering system such as tag number system, circuit diagram etc.

Our specialists of supervision are sub – classified regarding Mechanic, earth work and foundations, electric and MSR. Further a Chief supervisor for coordination and as the contact person for the customer is foreseen. Detailed schedules and organization sheets and plans for supervision and commissioning are worked out.

After Sales Service

Our After Sales Service are performed by the specialists of our subsidiary company SCHERZER Umwelttechnik GmbH.

Maintenance contracts can be settled directly and will be split between mechanical section and EMSR. Short term fault analyses are carried out by a remote diagnosis with VPN or modem connection for a quick solution of problems.

Various references:

1989 Melcher GmbH / Wismar (Germany)

Complete expansion of sea harbor Wismar for transshipment and storage of mineral oil – and cooking oil, in detail: Railcar loading and unloading, Ship - loading– and unloading, storage tanks.

1992 / 94 Reederei Dettmer GmbH & Co. / Magdeburg (Germany)

Engineering and commissioning of complete tankfarm

1997 Donau Chemie AG (Austria)

Delivery of a ship loading system for sulphur acid and phosphoric acid.

1998 Porta Petrol S.A. / Swinoujscie (Poland)

Complete reconstruction of a tank farm for storage, loading– and unloading of ocean ships and vessels incl. automation system

2004 SHELL Deutschland Oil GmbH / Dortmund (Germany)

Construction of a ship loading facility

2005 Deutsche BP AG / Gelsenkirchen (Germany)

Engineering vapor pendulum system at ship loading unit 3

2017 SHELL Deutschland Oil GmbH / Cologne (Germany)

Turnkey Reconstruction of a ship loading facility for loading and unloading of Para-Xylol

2022 SHELL Deutschland Oil GmbH - Kassens Bau / Cologne (Germany)

Engineering, Delivery, Mounting and Commissioning of a Jetty ship loading system





LOADING YOUR FUEL

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Other brochures of Dipl.-Ing. SCHERZER GmbH

- Company profile
- Railcar – Loading systems
- Railcar – Unloading systems
- Railcar – Filling tube and Hydraulic systems
- Options for SCHERZER filling tube systems
- Study to compare Rail Tank Car ON-SPOT loading systems with serial loading systems
- LPG Loading– and Unloading systems
- Tankcar - Loading– and Unloading systems
- Ship - Loading– and Unloading systems
- Tankfarms, including handling plants and Vapor recovery units (VRU)
- Reference lists

We are pleased to send you our brochures on request.