

## FEHMARNBELT FIXED LINK



# GENERAL PROCEDURE OPERATIONAL CONCEPT TUNNEL HARBOUR PUTTGARDEN / FEHMARN

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## OPERATIONAL CONCEPT TUNNEL HARBOUR PUTTGARDEN





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## LIST OF ABBREVIATIONS

AED	Automatic Externer Defibrillator
AnIBV	Anlaufbedingungsverordnung
CTV	Crew Transfer Vessel
DWT	Deadweight Tonnage / Tragfähigkeit
FLC	Femern Link Contractors
GDWS	Generaldirektion Wasserstraßen und Schifffahrt
HafEntsVO	Hafenentsorgungsverordnung
HafVO	Hafenverordnung
HaSiG	Hafensicherheitsgesetz
ISPS	International Ship and Port Facility Security Code
MarOps	Maritime Operations Centre
POB	Person overboard
NSW	National Single Window
PFSO	Port Facility Security Officer
UBB	Umweltbaubegleitung
VTS FB	Vessel Traffic Service Fehmarnbelt / Verkehrszentrale
WVC	Work Vessel Coordinator



## 1. GENERAL

### 1.1. Legal Basis

The present operating concept is based on the applicable legislation, the plan approval decision of 31 January 2019 and the port handbook for the *Tunnel Harbour Puttgarden*.

### 1.2. Purpose

The port's main purpose is to support the construction of the Fehmarnbelt tunnel with the following activities:

- Handling of excavated material
- Handling of rock material
- Handling of bulk goods and surcharges
- Supplying the offshore construction site with equipment, aggregates and machines
- Personnel transfer between Denmark and Germany (within the construction site)
- Work vessel crew change
- Ship supply
- Shelter for smaller floating units (tugs, CTVs, etc.)

The port is classified as a border crossing point.

### 1.3. Scope

The operating concept applies to the *Tunnel Harbour Puttgarden* and is intended to give an overview of activities and operations in the port. In the course of the project, this operating concept is regularly reviewed by the operator and adapted if necessary.

### 1.4. Responsibilities

Port Authority	<b>City of Fehmarn</b> <i>Der Bürgermeister</i> Am Markt 1 23769 Fehmarn +49 4371 506-612 E-Mail: <a href="mailto:L.Lafrenz@stadtfehmar.de">L.Lafrenz@stadtfehmar.de</a>
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Harbour captain / Harbour Management	<b>Blue Water Shipping</b> <i>Troels Nyerup</i> Færgevej 40 4970 Rødbyhavn, Danmark +45 2487 9512 24/7 <a href="mailto:tunnelharbour@bws.dk">tunnelharbour@bws.dk</a>



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### 1.5. Hydrological operating window of the port

The working window is between the "normal water level (-5.30m at the quay)" +1.00m and -0.60m for vessels affected by draught, from +0.75m and -0.4m a warning is given to the ships concerned.

Up-to-date water level information can be requested from the Harbour master or FLC's Work Vessel Coordinator (WVC). These persons are also responsible for disseminating the water level alerts.

Depending on the draught, ships lying in the port must prepare for leaving the port. Ships can then wait at anchor outside the port for the water level to normalize. Approvals from other authorities may have to be obtained.

All other vessels with a shallow draught will continue to have access to the port.

### 1.6. Operating hours of the port

The *Tunnel Harbour Puttgarden* is available 24 hours a day, 7 days a week.

### 1.7. Description of the mooring and handling area

The berth covers an area of 170m x 30m. The area is paved and carries a floor load of 2 tons per square meter. Bollards with a safe working load of 30 tons are provided as mooring devices, which are located in intervals of 15m from each other. At the edge of the berth there is a climbing aid (ladder) every 30m. The quay edge is sufficiently secured for cargo ships with fenders of the type "Trelleborg, Ø1400/800, with a length of 1.60m, 1,000 to 2,000 DWT". The berth area is fenced in accordance with ISPS and has two (2) double leaf gates and one (1) personnel gate.

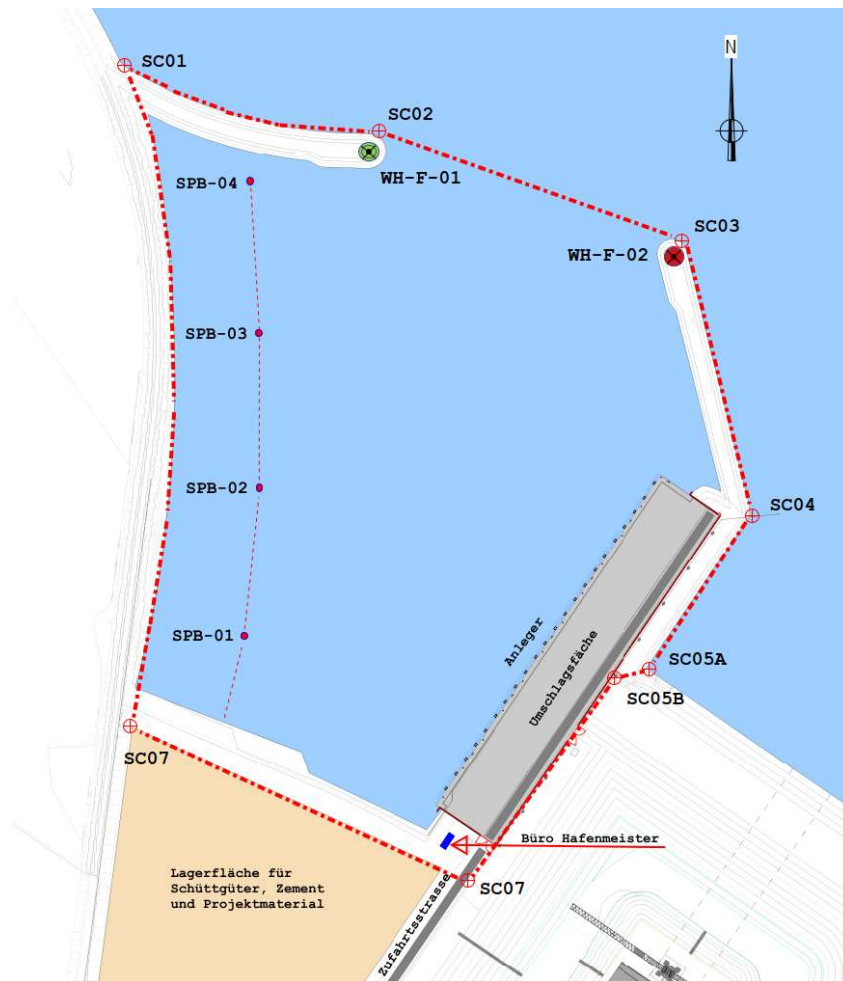


Figure 1: Port description

### 1.8. Lighting concept

Ten (10) light poles with a height of 8m will be mounted on the eastern longitudinal side of the fence, see Figure 2. The lighting used is of type COSMIC type 2 900W 3000K. An assessment of the emissions and the basic approval of the Environmental Construction Inspection (UBB) for the concept was obtained.

Properties	E	E <sub>min</sub>	E <sub>max</sub>	G <sub>1</sub>	G <sub>2</sub>	Index
Relevant area 170x30m	97.1 lx	3.90 lx	528 lx	0.040	0.007	CG1
Vertical illuminance						
Hight: 0,20m						
Distance between masts 22m						

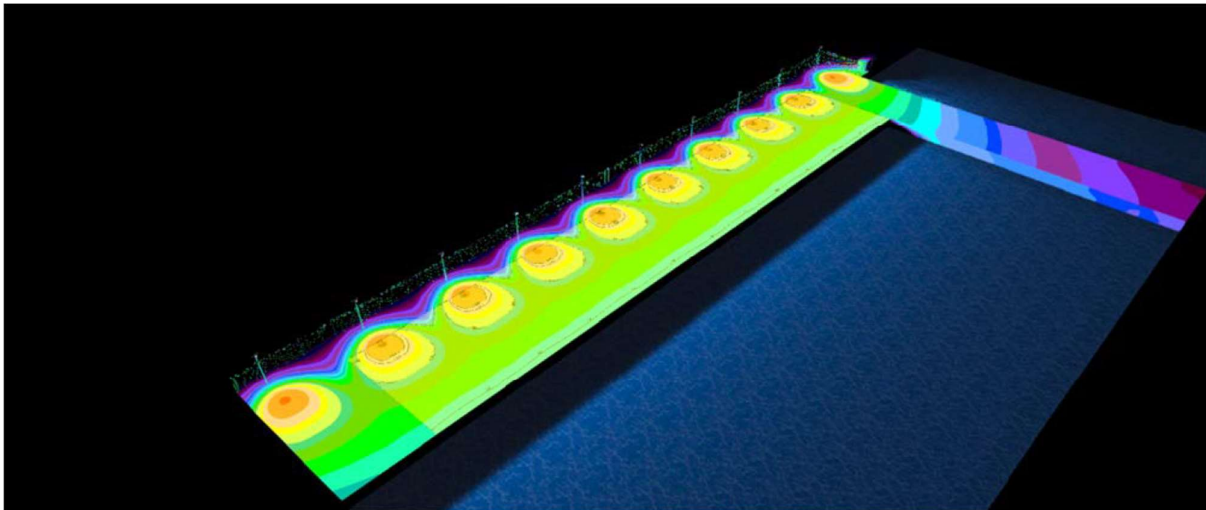


Figure 2: Description of the lighting in the port

### 1.9. Description of life-saving equipment and facilities

Sufficient life-saving equipment and rescue facilities are available in the port in accordance with the applicable requirements (Figure 3)

A total of three lifebuoys are installed in permanently positioned holding devices at a distance to each other of approx. 60m. In addition, a rescue rod is provided (in the middle). For works to be carried out on the quay edge, 2 additional (mobile) lifebuoys are provided. A rescue boat is moored in position at the southern end of the jetty. A lifting device (boat davit) is available. During launching or lifting, the boat is guided and held in position by tag lines from the quayside.

The planned boat davit will not have a "man-riding" function. For the recovery of persons from the lifeboat to the quay, an additional rescue davit, as often used in the offshore wind sector, is used. When needed, the rescue davit is anchored to the quay edge, close to the lifeboat in a floor tube and made ready for use. The fall arrest system should be used when the crew is entering or leaving the boat via the safety ladder. Further details, illustrations and functionality are described in Appendix 1 to this document, the Rescue and Emergency Plan of the Tunnel Harbour Puttgarden.





In addition, a container with further rescue and first aid material is provided in the entrance area of the port. In addition to the standardised first aid material, it contains additional life buoys and lines, an AED, rescue stretcher, eye wash and suitable means of firefighting (e.g., fire extinguishers).

Suitable oil barriers and binders are provided to protect against environmental hazards and to contain leaking (operating) materials.

Further details and information can be found in the rescue and emergency concept of the *Tunnel Harbour Puttgarden* and the corresponding Action Cards.

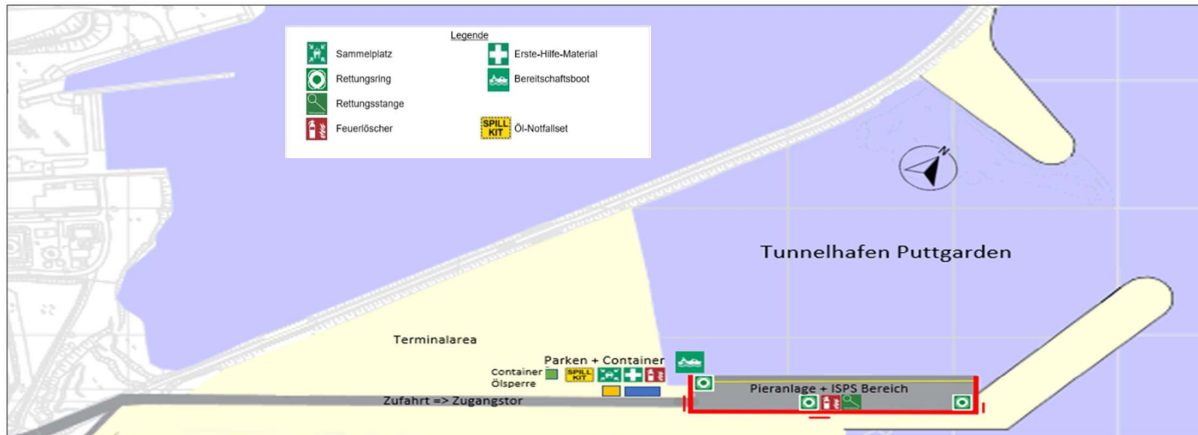


Figure 3: Simple overview of the distribution of rescue means.

## 2. RULES FOR PORT OPERATIONS

### 2.1. Responsibility of vessel masters and operators

The master of a vessel and the driver of a land vehicle or their deputies, as well as persons under whose care land vehicles or vessels are located, are responsible for ensuring that the provisions of this document are complied with within their area of responsibility.

If a shipmaster or other person fails to comply with these regulations or the instructions of the harbour master, the harbour master may take the necessary measures.

No ship may lie unmanned in port.

If the shipmaster is not on board, instructions to move, moor, etc. may be given to the most senior officer present or, if no officer is present, to another crew member.

Vehicle drivers and persons working on land, such as port and transshipment workers, are also responsible for complying with these requirements.

### 2.2. Notifications / Messages to WVC and via NSW

#### 2.2.1. Project Site internal notification

All vessels must notify the harbour master of their arrival and departure at least 24 hours in advance. Further specifications according to ISPS must be considered, a corresponding concept is being created.

For construction site traffic without passenger transfer, a reporting period of 120 minutes is sufficient.

#### 2.2.2. Project site external notification

Cargo ships and other affected ships must register via the federal central reporting portal - National Single Window (NSW) for entry and exit into the *Tunnel Harbour Puttgarden*. This notification must be given at least 24 hours prior to arrival or departure. Further specifications according to ISPS must be considered; a corresponding concept is being created.



The scope of reporting can be found in the information sheet on national reporting obligations in implementation of the EU Reporting Formalities Directive 2010/65/EU.

For all vessels that regularly operate only within the construction site area between Denmark and Germany, an exemption from the reporting obligation according to the Docking Conditions Ordinance (AnlBV) and Port Ordinance (HafVO) will be applied for at the Port Authority.

In principle, the required reporting guidelines of the various regulations are complied with.

A view of planned ship calls is regularly updated and shared with the Port Authority. This measure is intended to enable the Port Authority to assess any regular traffic.

### 2.3. Port communication

The construction site work vessel traffic is monitored internally by the FLC Work Vessel Coordinator (WVC) and externally by the Vessel Traffic Service Fehmarnbelt (VTS FB). Contact can be made as follows:

- **Working channel for construction site area communication:** VHF Channel 12
- **VTS FB:** VHF Channel 68
- **WVC-FLC telephone number (24/7):** +45 51 70 80 52
- **WVC-FLC e-mail address:** [flc-wvc@flc-jv.com](mailto:flc-wvc@flc-jv.com)

The responsible contact person for the port transit coordination is the harbour master, with the following contact options.

- **Harbour master telephone number (24/7):** +49 151 255 465 73
- **Harbour master telephone number:** +49 (0) 4371 3151
- **Harbour master e-mail address:** [agency@baltic-koelln.de](mailto:agency@baltic-koelln.de)

### 2.4. Basic rules of behaviour within the port

Regardless of all the details described here, it is assumed that all persons in the area of the *Tunnel Harbour Puttgarden* always behave in accordance with §8 of the Schleswig-Holstein Port Ordinance (HafVO). Consequently:

'Everyone shall behave in such a way as to ensure port safety and the safe operation of the port and its facilities, the safety and ease of traffic, the safety of vessel operation and environmental protection concerns, and that no other person is harmed, endangered or hindered or harassed more than is unavoidable in the circumstances. The vessel operator shall be responsible for the proper conduct within the meaning of sentence 1 for all persons on the vessel.'

### 2.5. Activities subject to authorization

The following activities may only be carried out with the prior permission of the harbour master:

- Functional testing of manoeuvring- and propulsion devices
- Open fires and hot work
- Diving
- Confined Space
- Other activities that could restrict or endanger the operation of ships or the port.

## 3. VESSEL MOORING

### 3.1. Vessel mooring plan

**Scenario: Normal operation**

Along the quays there are sufficient bollards at 15m intervals for the attachment of work vessels. The load capacity of the bollards is 30 tons SWL (safe workload). The cargo- and work vessels are securely moored in such a way that the attachment can be easily loosened.

As an example, based on the assumed ship dimensions, Figure Figure 4 typical cargo ship with a length of approx. 88m, which is used for the delivery of gravel and sand. At the same time, a Multicat is moored behind the cargo ship, which supplies or collects equipment and/or auxiliary units for the immersion of the tunnel elements.

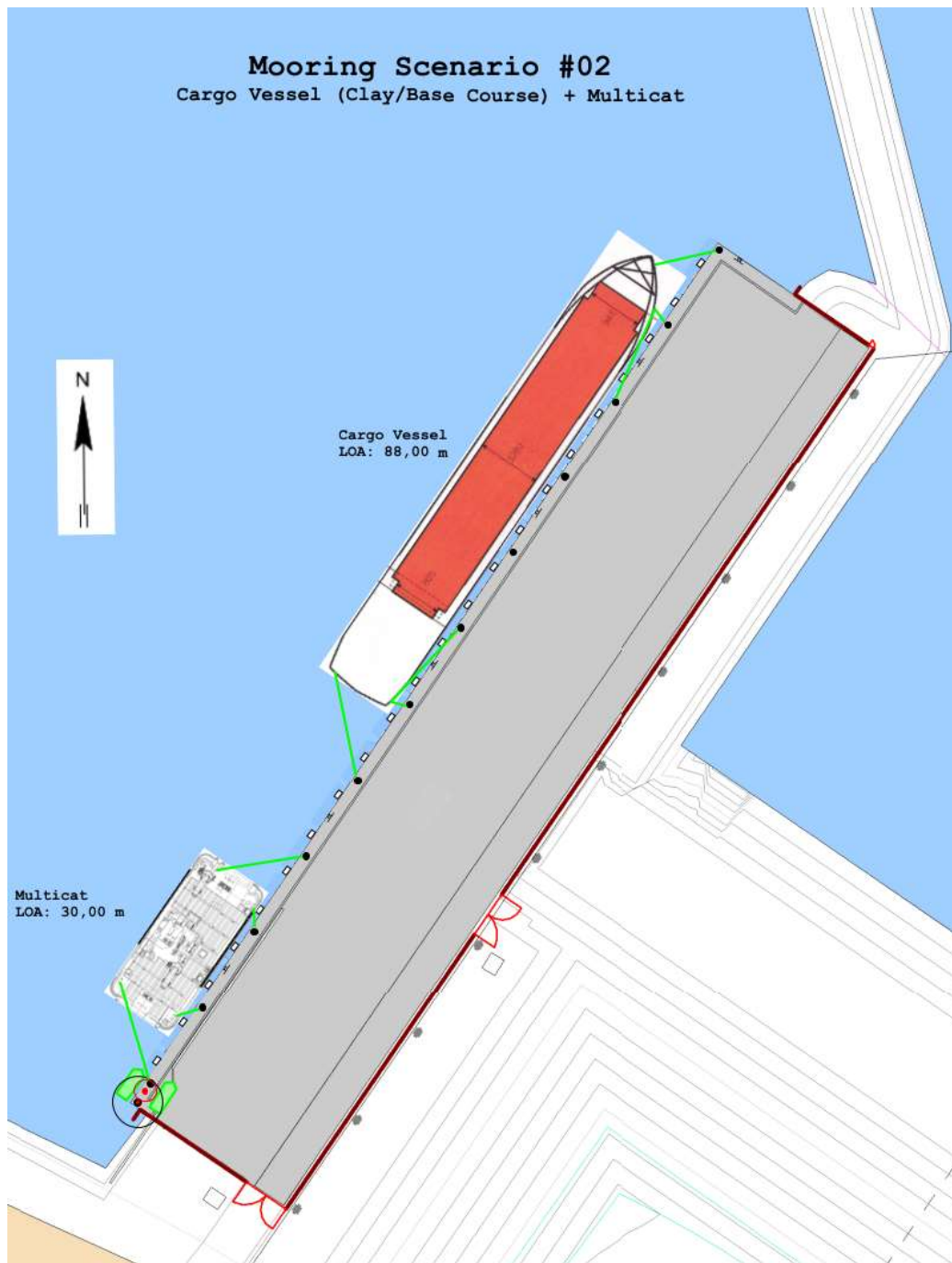


Figure 4: Exemplary mooring scenario

**Scenario: Bad weather (“Abwettern”)**

As an example, based on the assumed ship dimensions, you can see here (Figure 5) several auxiliary ships moored at the quay in bad weather/storms. Some auxiliary ships are anchored in the western part of the port with sufficient safety distance. When selecting anchor positions, care is taken to ensure that the ships cannot drift into the western restricted area to the Scandlines breakwater.

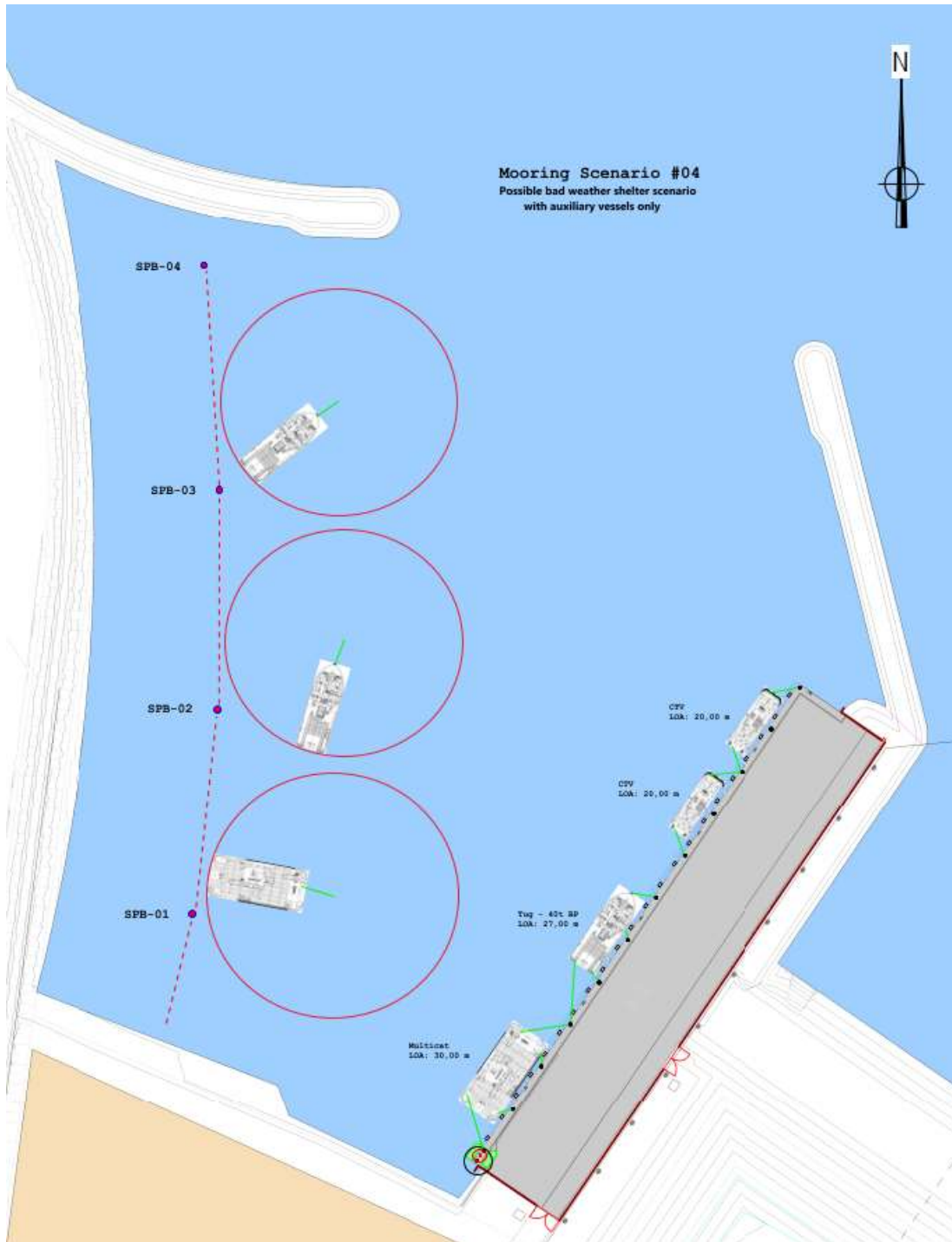


Figure 5: Exemplary mooring scenario in bad weather (“Abwettern”)



### 3.2. Special situations: evacuation of the port due to weather

Due to weather conditions and other environmental situations, the harbour master may arrange for the port to be evacuated, see also 1.5 **Error! Reference source not found.**

### 3.3. Mooring

The ships must be moored to the bollards provided for this purpose according to the rules of good seamanship.

The port operator provides qualified linesmen for each mooring operation.

Any instructions of the harbour master for mooring must be followed. The ship shall ensure that there is a safe and illuminated shore leave.

In exceptional cases, several vessels (other than cargo ships) may moor one behind the other. A ship lying on landside must ensure free, safe and illuminated passage across the deck and from ship to ship. The harbour master shall give permission to proceed with this.

### 3.4. Anchoring

Anchoring in the port basin is only permitted in exceptional cases and with the permission of the harbour master.

Without the express permission of the harbour master, no ship with unplugged anchor chains may lie on the quay or block the port basin with moorings.

## 4. PILOTAGE

In consultation with the Directorate-General for Waterways and Shipping (GDWS), there is no provision for a pilotage service for access to the port.

After approval by the Port Authority, pilotage services are also to be dispensed with within the port.

## 5. CARGO HANDLING

### 5.1. Cargo

The port will mainly handle bulk goods, cement and concrete aggregates, excavated material and project cargo. Further details on the handling of the individual transshipments are listed below.

#### Cement

The cement supply ship enters the port and moors at the quay. To unload the cement, the pumping hose of the ship is connected to the cement pipeline DN 350 approximately in the middle of the ship. The cement is pumped by the ship's own compressors via the pipeline into the storage silos, which are located on the storage area outside the port area. After unloading the cement, the pipeline is cleaned and decoupled from the ship. Finally, the ship departs again and leaves the port.

#### Excavation material

A self-propelled barge enters the port and moors to the quay. The excavated material is transported to the port by means of construction site transport vehicles. From there, a suitable material handler (approx. 50-75 tons, rubber-tired) loads the barge. The loaded barge then leaves the port.

Impurities on the quay surface are removed after the loading operations.



### **Bulk aggregates**

A self-propelled barge loaded with bulk material for concrete production or natural gravel for earthworks and road construction enters the port and moors to the quay. A suitable material handler (approx. 50-75 tons, rubber-tiered) unloads the bulk material onto construction site transport vehicles provided for this purpose. These bring the material to designated storage areas outside the *Tunnel Harbour Puttgarden*. As soon as the barge is completely unloaded, it sets off from the quay and leaves the port.

Impurities on the quay surface are removed after the loading operations.

### **Project cargo and items**

Cargo ships enter the port and moor at the quay. The project cargo will be handled using mobile cranes provided for this purpose. The transport of project cargo takes place with suitable transport vehicles. As soon as the cargo ship is completely unloaded, it sets off from the quay and leaves the port.

### **5.2. Passenger transfer**

CTVs can commute between the construction site in Rødbyhavn and the construction site in Puttgarden and transport construction site personnel. Passenger transport is initially limited to surveyors, construction site technicians or persons with management functions. The number of people in regular commuting currently amounts to less than 20 people per day.

Residence and customs issues are dealt with together with the competent authorities. Occupational safety regulations are met, applicable law shall apply.

### **5.3. Offshore-supply**

The item of offshore supply will be formulated later, when further offshore activities arise, particularly in the context of the immersion of the tunnel elements. However, this would normally also be a procedure under the item "project cargo".

### **5.4. Crew change**

In principle, the change of ship crews can take place in port. All official requirements and provisions are complied with. Information to the competent authorities shall be provided by the shipping agent and the ship's master.

## **6. OFFSHORE EMERGENCY ASSISTANCE**

Within the framework of offshore emergency and incident assistance, the following shall be provided under the responsibility of the harbour master:

- The port must provide a berth for an appropriate rescue unit in corresponding cases of assistance. For this purpose, the harbour master may request possible vessels to leave or relocate their berth immediately.
- Access to the relevant berth must be established immediately and without delay, and appropriate bodies must be informed. If necessary, the harbour master may cease cargo handling and port operations.
- All port users must comply with the instructions of the harbour master and ensure the smooth running of the assistance measure.
- In the event of major damage situations and official responsibility, the harbour master is subject to appropriate institutions.





## **7. WASTE DISPOSAL**

### **7.1. Reference to the waste management plan**

All applicable national and international regulations, in particular the Port Disposal Ordinance (HafEntsVO) Schleswig-Holstein in its valid version, are applied to the disposal of waste. Details can be found in the waste management plan annexed as Annex 2 to this document.

### **7.2. Application for the exemption certificate**

In accordance with § 13 of the HafEntsVO, ships that regularly return or are permanently on the construction site may apply to the Port Authority for an exemption certificate for exemption from the obligation under § 6 (1), (2) and (3) as well as § 7 (1) and § 8.

## **8. VESSEL SUPPLY**

### **8.1. Spare parts and provisions**

The regular supply of provisions, ship supplies and spare parts is organised and handled by the ship agent.

A registration of the expected deliveries and possible services is made via the captain/agent to the harbour master. The harbour master shall forward this information to the bodies concerned and coordinates further action.

All supply and disposal activities on the facility are subject to customs requirements and ISPS requirements.

### **8.2. Bunkers and fuels**

Bunker and fuel activities will only take place on land by tankers or delivery vehicles.

Corresponding safety, environmental and labour law requirements are being met and corresponding instructions are currently being drawn up.

The registration of a required bunker operation to the harbour master is carried out by the captain/agent, who coordinates the time window of the supply activity.

Special port situations can limit the time window. The harbour master has to secure port operation; a bunker or fuel operation is subordinate.

### **8.3. Shore power**

There are no shore power connections available.

### **8.4. Drinking water and miscellaneous**

The drinking water supply and other things must be organised by the responsible ship agents.

## **9. ISPS**

The port is subject to the Port Security Act (HaSiG) Schleswig-Holstein, in conjunction with Regulation EC 725/2004 and Directive 2005/65/EC. Applicable requirements and specifications are complied with.

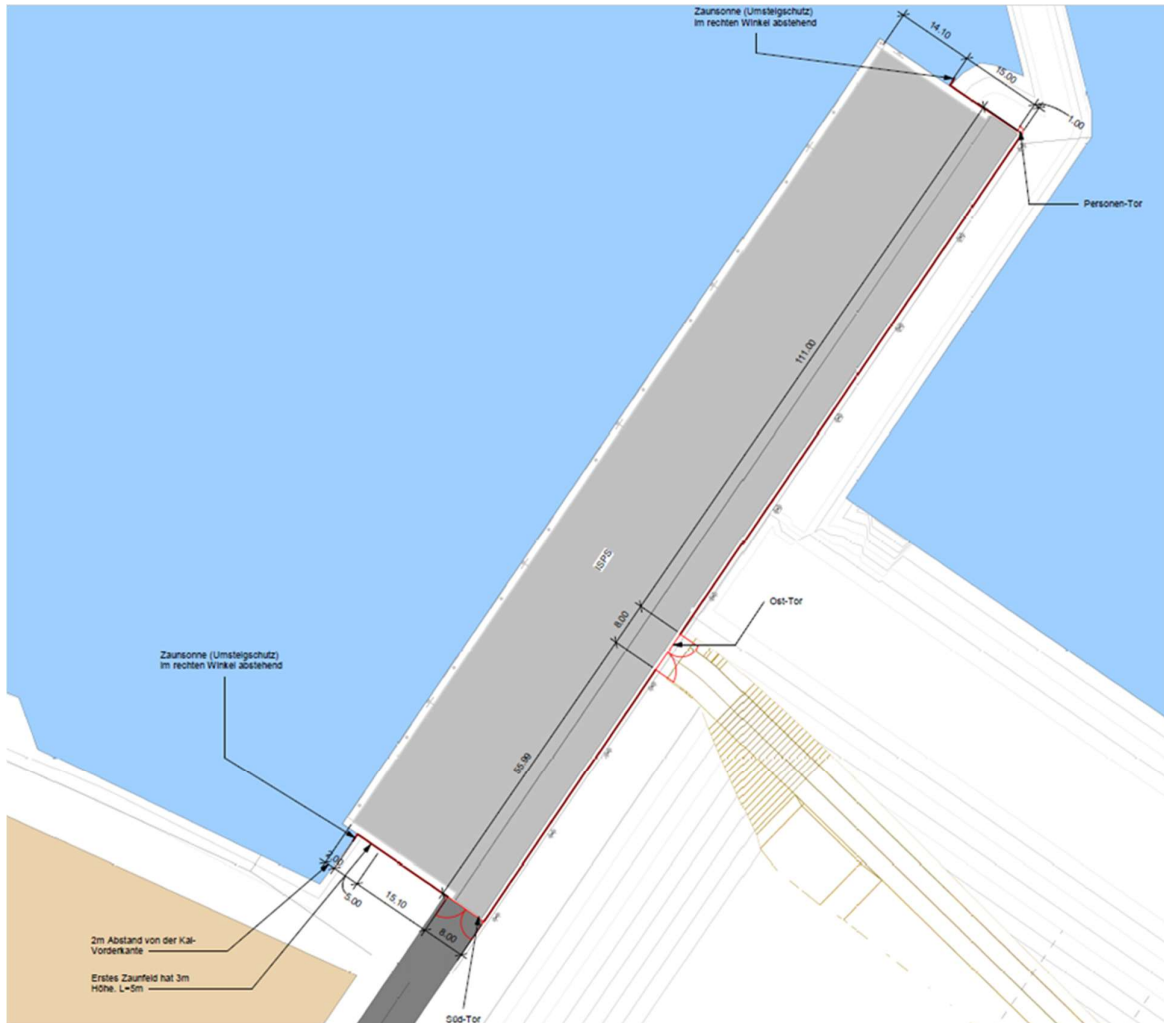


Figure 6: Display of ISPS-area in the Tunnel Harbour Puttgarden.

All calling ships using the berth area will be subject to ISPS requirements. Corresponding ISPS requirements and requirements must therefore be accepted.

## 10. ATTACHMENTS





**Attachment 1: Rescue- and Emergency Concept for the *Tunnel Harbour Puttgarden***



## **Attachment 2: Waste Management Plan**