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## **SPECIAL RULES FOR TRANSITING THE TROLLHÄTTE CANAL WITH MAXIMUM-SIZE VESSELS**



**SPECIAL RULES FOR TRANSITING THE  
TROLLHÄTTE CANAL WITH MAXIMUM-SIZE  
VESSELS**

Swedish Maritime Administration

**1. Vessel size**

Without special permission, a vessel may not transit the Trollhätte canal if it has:

- a longer overall length than 87 meters
- a beam greater than 12.60 meters, or
- has a larger draft than 4.70 meters

The same applies to barges and trains of barges if the barge has:

- a greater overall length exceeding 35 meters
- a beam greater than ten meters
- a greater draft than three meters or
- the train of barges has a greater length than 60 meters, measured from the towing vessel's aft to the end of the train of barges.

No vessel, barge or train of barges or other type of vessel may transit the canal if it has an air draft exceeding 27 meters.

2. After special consideration by the Swedish Maritime Administration in Trollhättan, a vessel with an overall length exceeding 87 meters, a beam larger than 12.60 meters or a draft greater than 4.70 meters may transit the Trollhätte canal.

**3. General**

The account below describes the special requirements in terms of design and equipment imposed on vessels with dimensions exceeding the dimensions noted in Point 2. Following special consideration, a dispensation may be made for such vessels.

In considering permission for vessels (as noted in Point 2) the Swedish Maritime Administration in Trollhättan shall check the arrangement drawing complete with details. A total safety assessment will be made regarding the suitability of the vessel traversing Trollhätte canal.

An application for special permission is to be made to the Swedish Maritime Administration, Trollhättan, [kctrollhattan@sjofartsverket.se](mailto:kctrollhattan@sjofartsverket.se) (Enclosure 2). The application should be sent as soon as possible, but at least 3 working days before arrival to the traffic area.

#### **4. Requirements for vessels with dimensions requiring special permission**

##### **4.1 Steering ability in relation to the vessel's dimensions**

- a) Vessels whose length, beam or draft exceed the dimensions stated in Point 2, require robust steering propellers that provide transverse load for safe manoeuvring.
- b) Vessels without steering propellers, as above, and for which some dimension exceeds the dimensions in Point 2 may receive permission if other dimensions are within the limits stated in Enclosure 1.

##### **4.2 Rudder arrangement and steering engine**

- a) The rudder area must not be less than the area conditions of 0.02 in the case of an actual draft corresponding to the lateral surface. This does not apply if the vessel is equipped with a highly effective rudder, such as a Becker or Schilling rudder.
- b) The rudder's manoeuvre time must not exceed 15 seconds for turning 35° to starboard and 35° to port and vice versa.
- c) A cutover to reserve steering with the same capacity as regular steering equipment should be immediately possible.
- d) The rudder should be possible to manoeuvre from a position at centreline or near centreline and from the bridge wings.
- e) The rudder indicator shall be located in such a manner that it is easily read from all steering positions.

##### **4.3 Engine and propeller manoeuvres**

- a) In the case of a fixed propeller, it must be possible to reduce engine speed to 25% of full speed without the engine stopping and the speed must then not exceed 5 knots in ballast condition. The manoeuvring speed for switching to slow ahead to slow astern or vice versa must not exceed 8 seconds.
- b) Adjustable propellers should be designed so that the propeller in reverse manoeuvres has characteristics that correspond to a fixed propeller.
- c) The manoeuvring of the engine or the propeller's should be possible to be controlled from the bridge wings.

##### **4.4 View from the wheelhouse**

- a) Vessels shall be loaded or ballasted so a good view from the steering site is gained in accordance with SOLAS Chap. V, rule 22.

*1. Ships of not less than 55 m in length, as defined in regulation 2.4, constructed on or after 1 July 1998, shall meet the following requirements:*

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- .1 The view of the sea surface from the conning position shall not be obscured by more than two ship lengths, or 500 m, whichever is less, forward of the bow to 10° on either side under all conditions of draft, trim and deck cargo;*
- .2 No blind sector, caused by cargo, cargo gear or other obstructions outside of the wheelhouse forward of the beam, which obstructs the view of the sea surface as seen from the conning position, shall exceed 10°. The total arc of blind sectors shall not exceed 20°. The clear sectors between blind sectors shall be at least 5°. However, in the view described in .1, each individual blind sector shall not exceed 5°;*
- .3 The horizontal field of vision from the conning position shall extend over an arc of not less than 225°, that is from right ahead to not less than 22.5° abaft the beam on either side of the ship;*
- .4 From each bridge wing, the horizontal field of vision shall extend over an arc of at least 225°, that is from at least 45° on the opposite bow through right ahead and then from right ahead to right astern through 180° on the same side of the ship;*
- .5 From the main steering position, the horizontal field of vision shall extend over an arc from right ahead to at least 60° on each side of the ship;*
- .6 The ship's side shall be visible from the bridge wing;*
- .7 The height of the lower edge of the navigation bridge's front windows above the bridge deck shall be kept as low as possible. In no case shall the lower edge present an obstruction to the forward view as described in this regulation;*
- .8 The upper edge of the navigation bridge front windows shall allow a forward view of the horizon, for a person with a height of eye of 1,800 mm above the bridge deck at the conning position, when the ship is pitching in heavy seas. The Administration, if satisfied that a 1,800 mm height of eye is unreasonable and impractical, may allow reduction of the height of eye but not to less than 1,600 mm;*
- .9 Windows shall meet the following requirements:*
- .9.1 To help avoid reflections, the bridge front windows shall be inclined from the vertical plane top out, at an angle of not less than 10° and not more than 25°;*
- .9.2 Framing between navigation bridge windows shall be kept to a minimum and not be installed immediately forward of any work station;*
- .9.3 Polarized and tinted windows shall not be fitted;*
- .9.4 A clear view through at least two of the navigation bridge front windows and, depending on the bridge configuration, an additional number of clear-view windows shall be provided at all times, regardless of weather conditions.*

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2. *Where practicable, vessels constructed before 1 July 1998 shall meet the requirements of paragraphs 1.1 and 1.2. However, structural alterations or additional equipment need not be required.*

3. *On ships of unconventional design which, in the opinion of the Administration, cannot comply with this regulation, arrangements shall be provided to achieve a level of visibility that is as near as practical to that prescribed in this regulation.*

b) The bridge shall have a window close to the vessel's centreline with effective windscreen wipers.

**4.5 Conditions**

The vessel shall be ballasted or loaded so that rudders, propellers and bow propellers have the requisite effect for satisfactory manoeuvring.

**4.6 Masts**

Folding masts are recommended to avoid waiting time at bridges. Vessels equipped with a folding mast must lower the mast to avoid bridge openings.

**4.7 Mooring equipment**

Mooring winches are recommended for vessels with a length exceeding 85 meters.

**4.8 Equipment in general**

The bridge should be equipped with an easily readable inclinometer.

Vessels shall be equipped with two radars, one of which should be suitable for canal navigation.

It is recommended that the vessel is equipped with a turn rate indicator.

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Relationship between permitted  
 dimensions for vessels without  
 steering propellers

