

## WATERPROOF DOUBLE DOOR INSTALLATION MANUAL

Date: 2010-07-05

# IBH-091

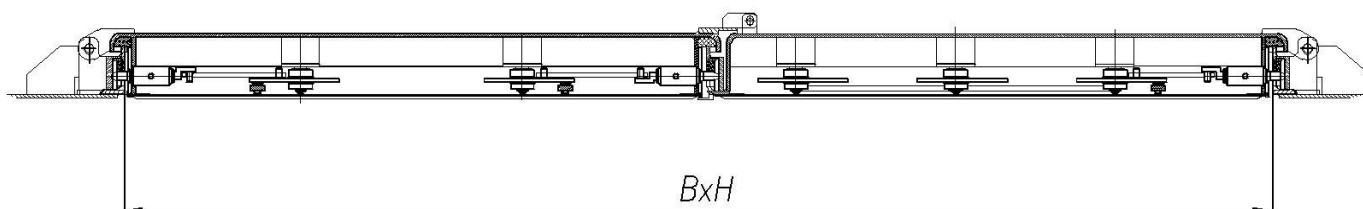
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### Notes:

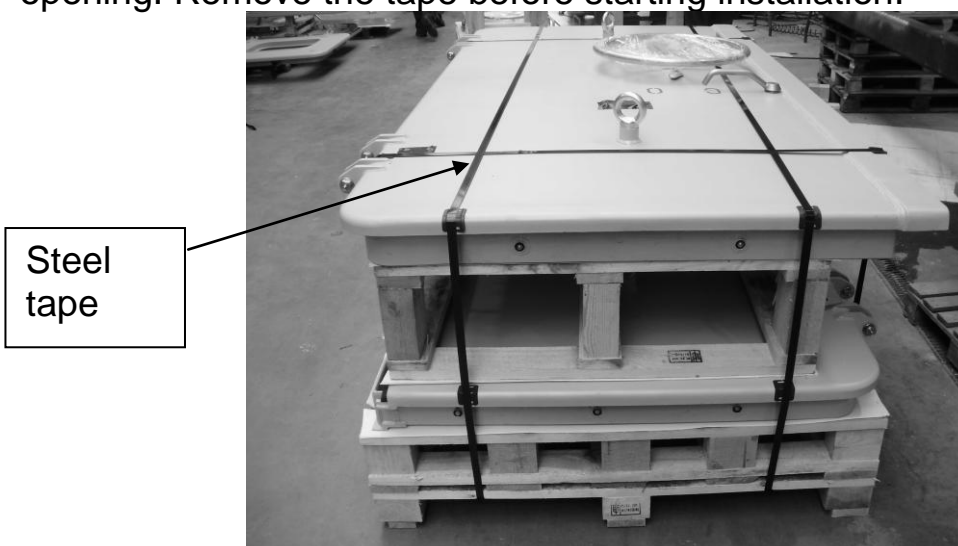
Division of tasks and specific stages within tasks are usually specified by the shipyard according to shipyard's instructions. The door installation procedure has been described below to facilitate the installation by the shipyard. BOHAMET does not provide warranty on the installation performed by third parties using this manual.

## I. General:

1. The functional door size is so-called "clear opening" of the coaming BxH, tolerance – IT-16.
2. BOHAMET accepts claims concerning incorrect door dimensions only before the door is installed – welded in the wall.



3. Transport the door from the warehouse to the installation site on the pallet. The door panel is additionally secured with steel tape to prevent door opening. Remove the tape before starting installation.

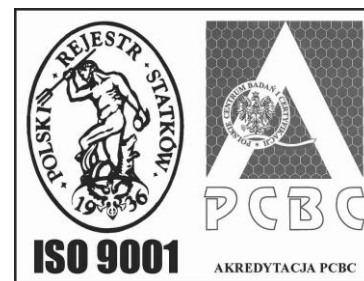


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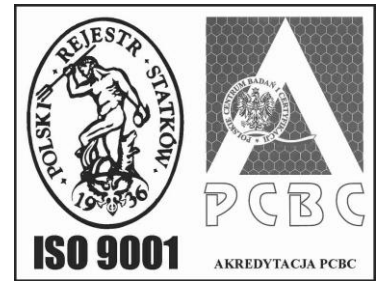
4. Transport the door on the pallet on board using a crane.
5. When moving the door to the installation site, remember to set all the closing devices in the closed position to avoid uncontrolled door opening.

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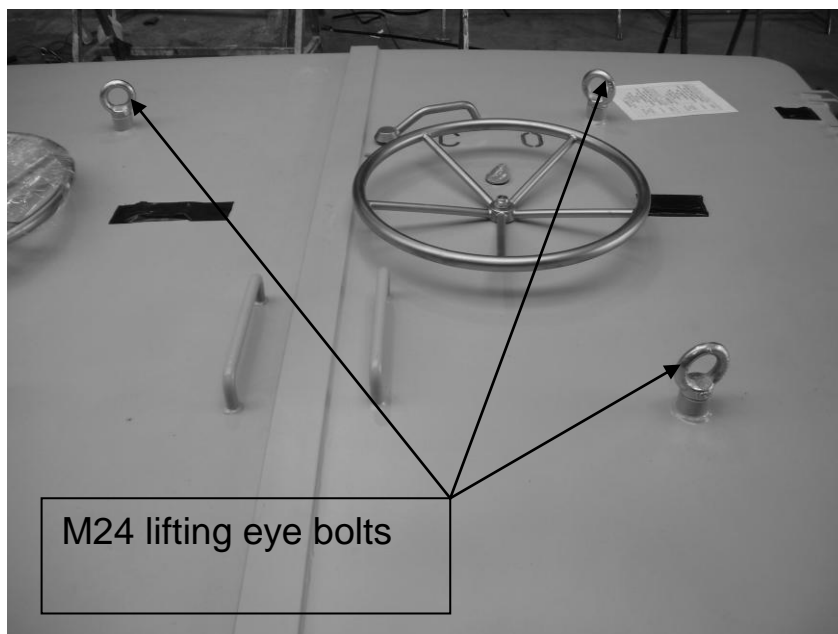
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## II. Pre-installation:

1. Move the door on the pallet to the installation site using a crane.
2. First of all, ensure that the opening dimensions comply with documentation of the particular door.
3. If there is no opening in the ship's side, follow steps 5 and 6
4. The door is to be installed with lifting eye bolts with M24 thread fixed on the door leaves.



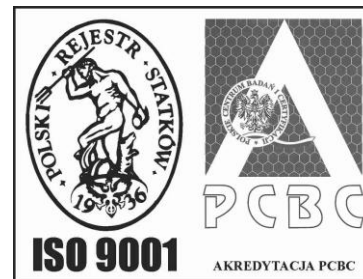
5. Mark opening dimensions (as per the diagram) with IT-14 tolerances.

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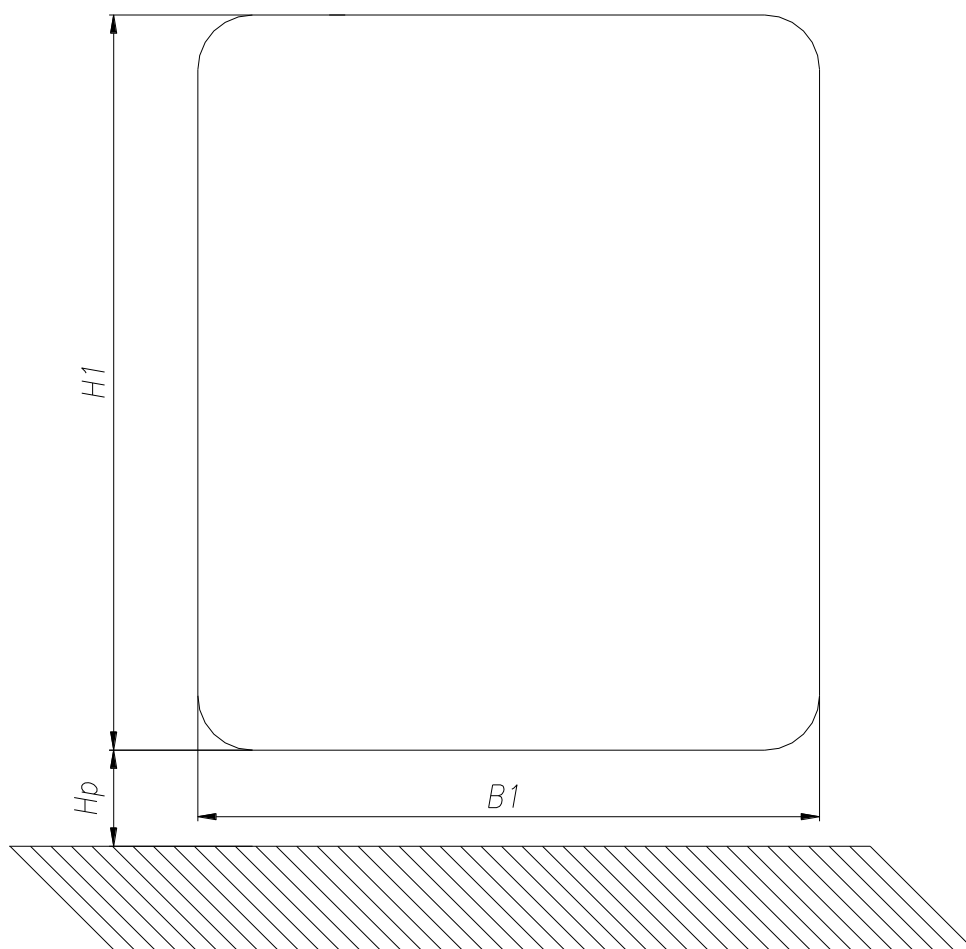
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6. Cut out the opening acc. the marking, check the opening dimensions again, taking into account +2mm tolerances. Grind cutting-out surfaces with elastic grinding discs to remove burrs created by flame-cutting.



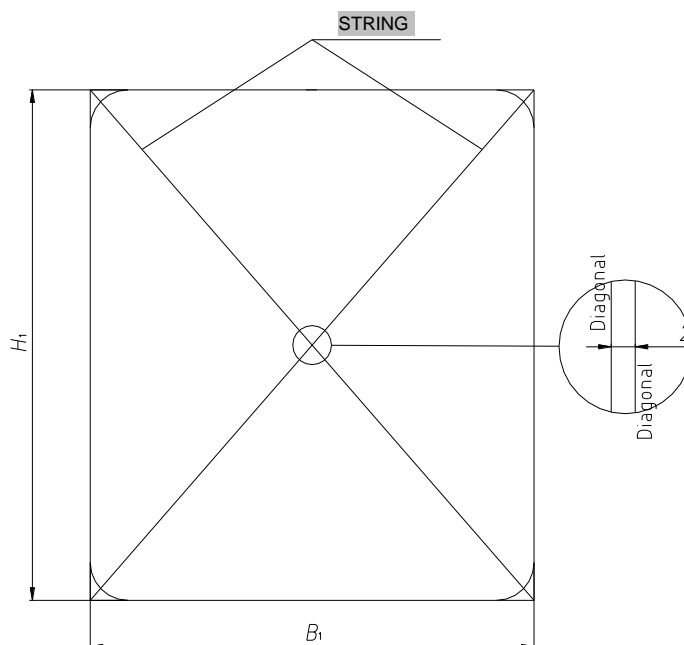
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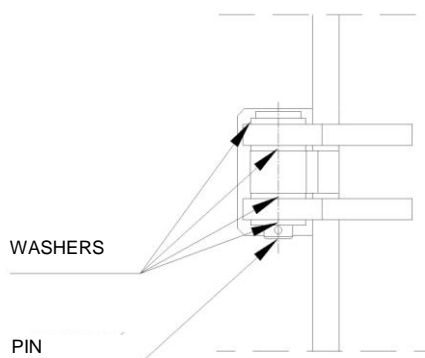
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7. Check cut-out edges for rectilinearity and wall surface for flatness. Check coaming for flatness using string as per the below drawing. Maximum spacing between crossed pieces of string must not exceed 2mm.



8. Disassembly the door by removing hinge pins. Remember the number of washers in each hinge – to ensure correct re-assembly.

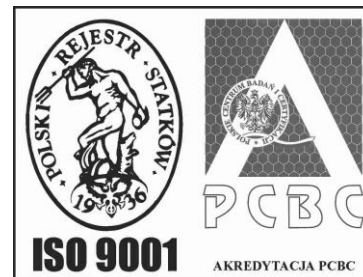


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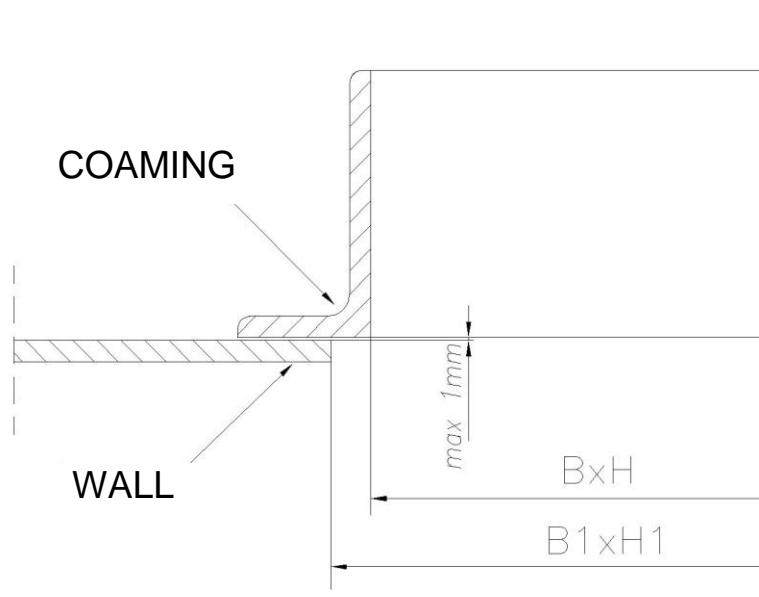
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### III. Installation of coaming in the wall.

Place the coaming in the opening in the wall. Use wedges or spacers to ensure correct installation.

1. Move the frame to the cut-out opening and check whether it fits tight along the perimeter. The gap between the superstructure wall and the door coaming must not exceed 1 mm.  
If the gap is greater, straighten the wall again.



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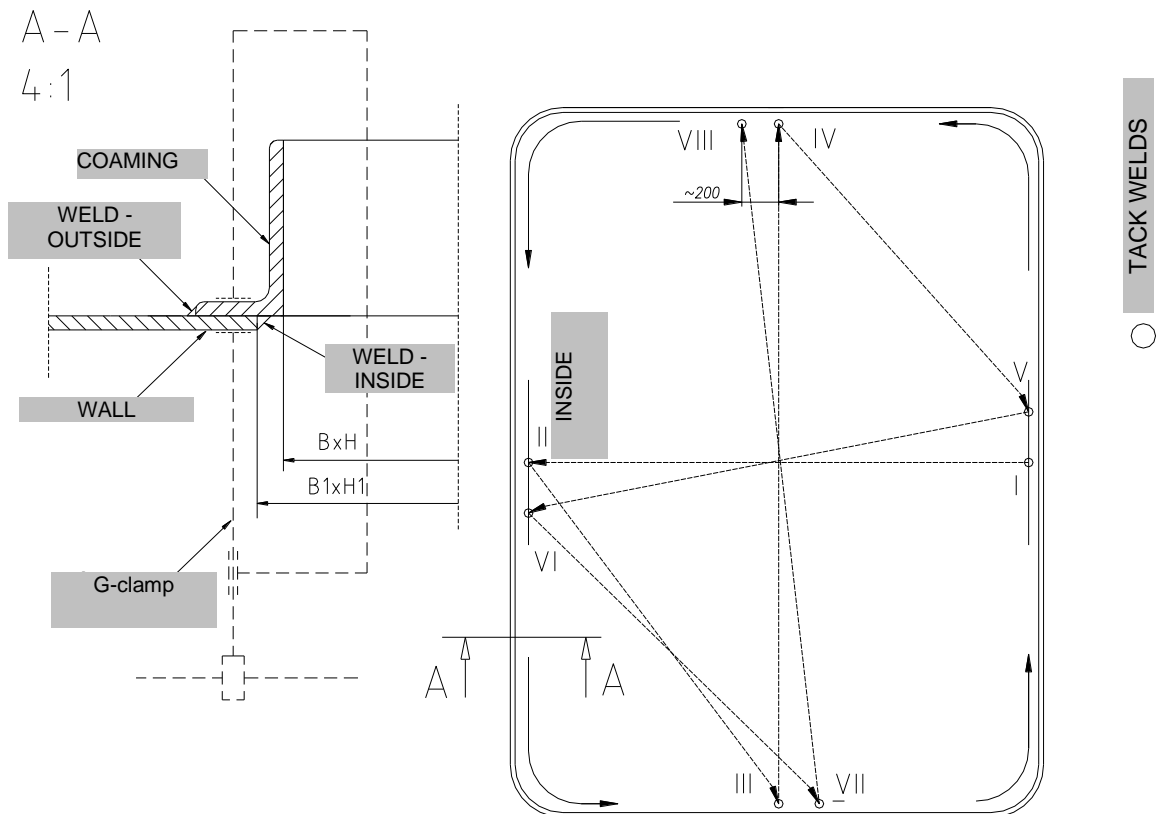
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2. Weld the coaming in the wall as per the diagram starting from the outside. Tack welds 20mm long must be made in an order specified in the drawing maintaining a distance of 200mm. When tack welds are completed, check flatness of the coaming again as per II.5 and clear opening of the coaming. Final welds 70 to 100mm long must be made in an order specified in the drawing until creating a continuous weld along the whole coaming. The number of tack welds and final welds depend on a size of the coaming. In order to ensure that the coaming fits tight to the wall, use G-clamps every 300÷400mm.

Tack welds.



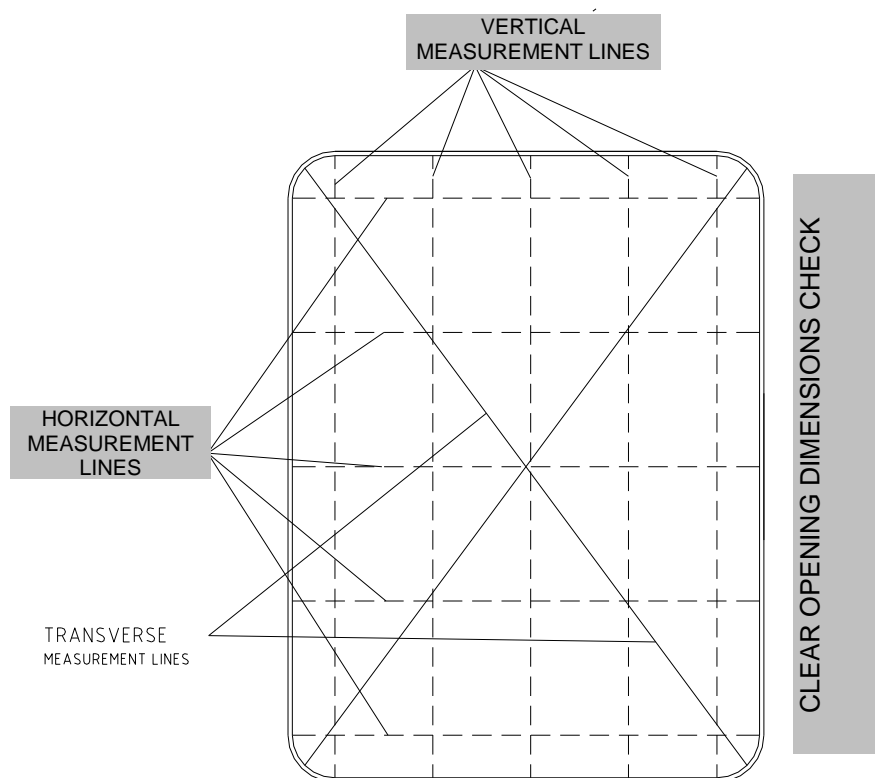
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When tack welds are completed, check flatness of the coaming as per II.5 and clear opening of the coaming as per the below drawing. Maximum deviation of the clear opening of the coaming –  $\pm 2\text{mm}$  for each section measured.



If discrepancies are found, take repair measures in order to obtain correct dimensions. When dimensions are correct, check the final weld as per the below drawing.

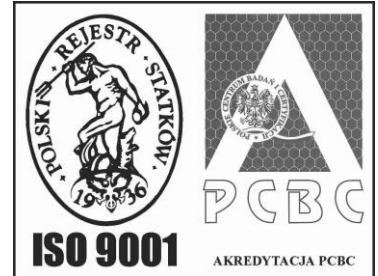


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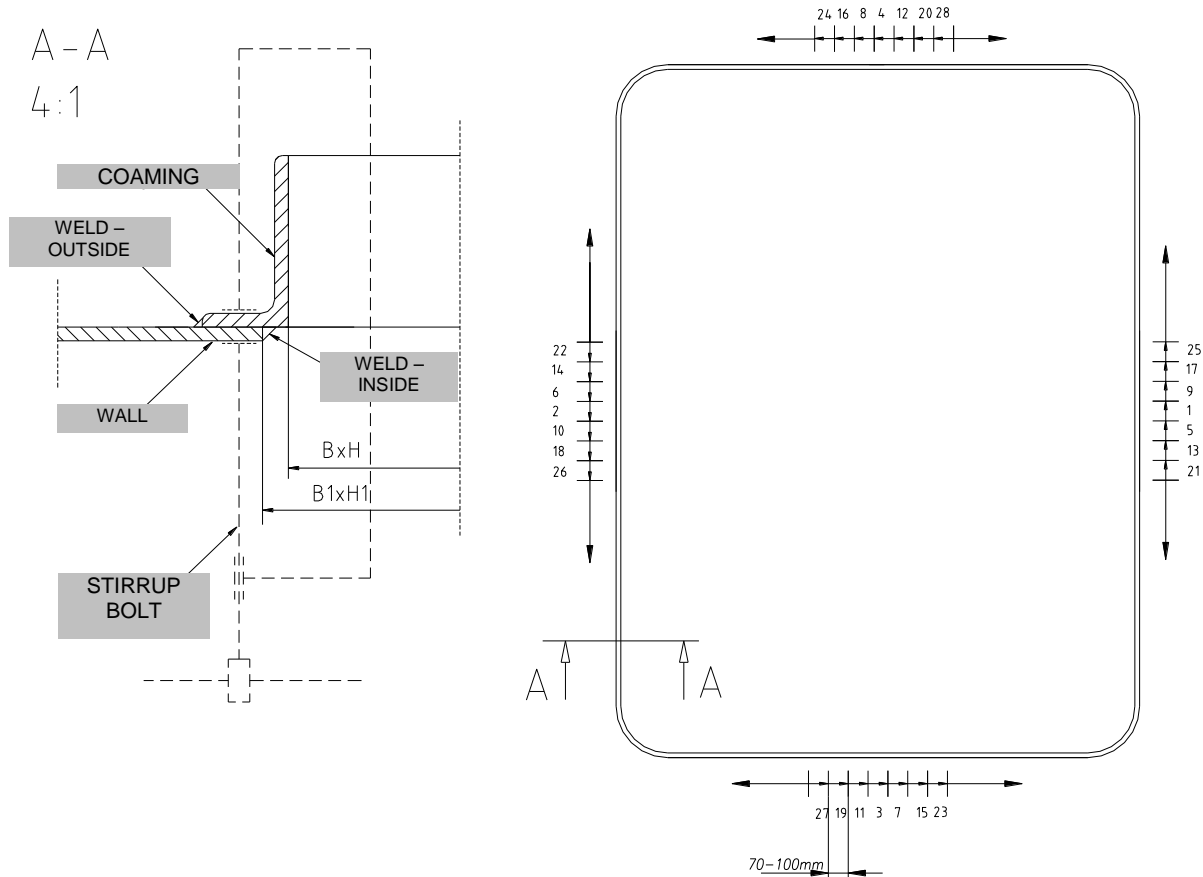


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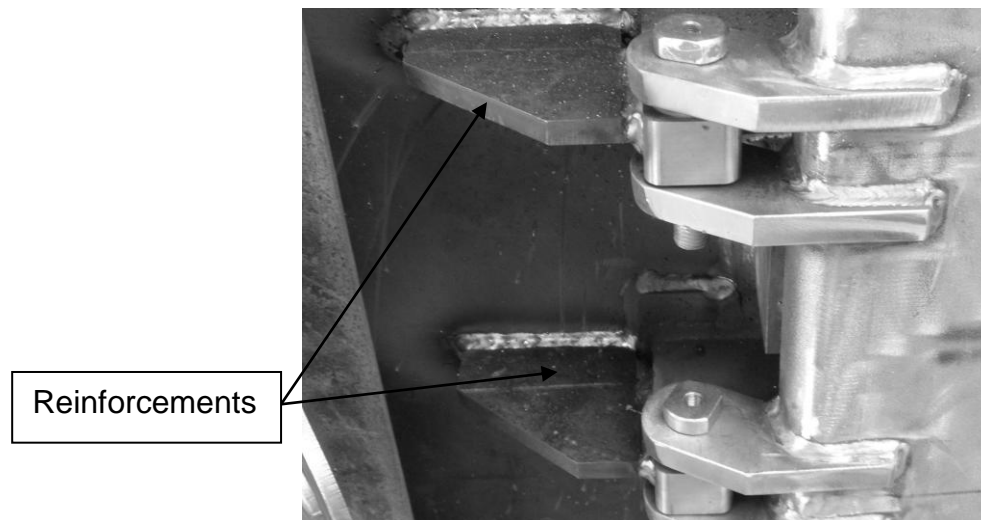
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3. Weld reinforcements to the hinges in order to strengthen the coaming.



4. When welding is completed, remove defects and make up any incomplete welds.
5. Check flatness of the coaming again – see II.5
6. Next steps:
  - without removable doorsill – see section IV
  - with removable doorsill – see section V

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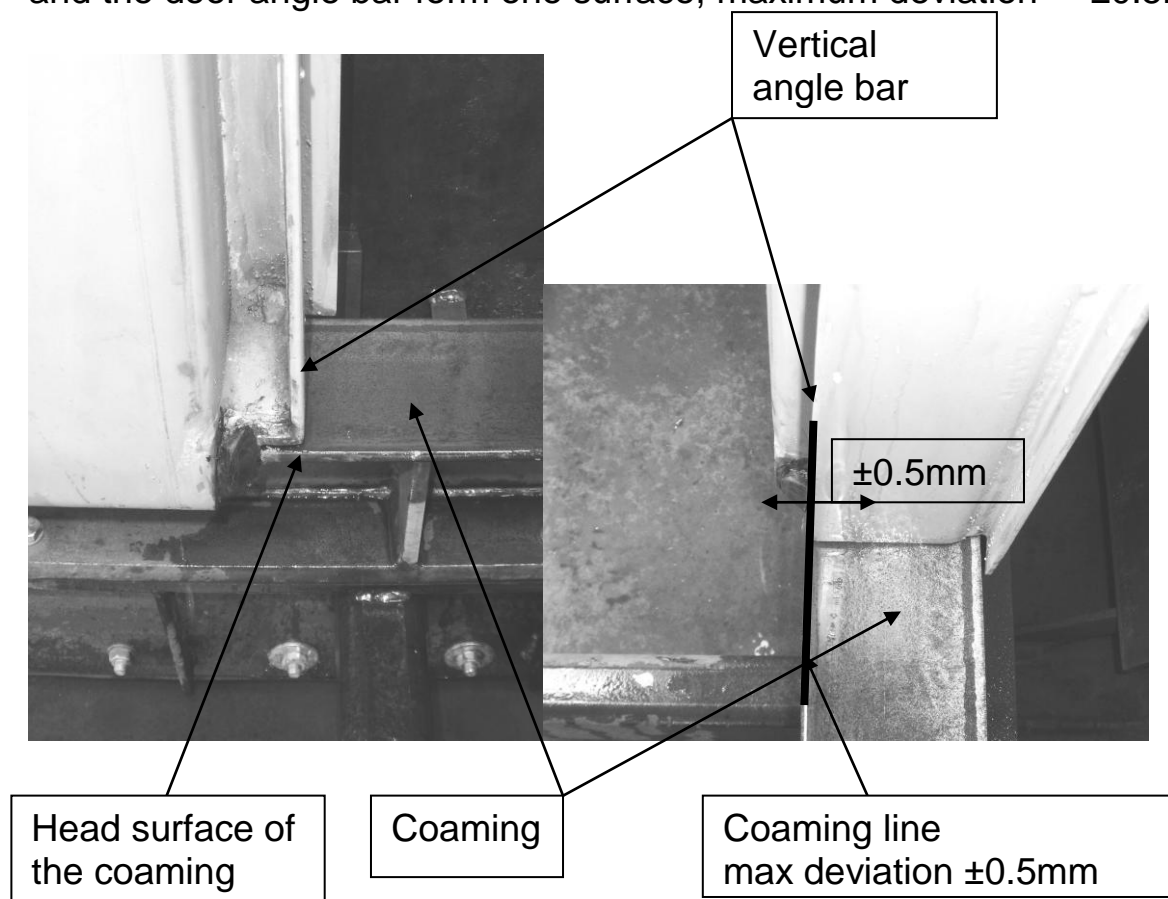
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#### IV. Door installation:

1. Place the door panel in the coaming. Put hinges in their positions, remember to place all washers. Do not use too much force when placing hinge pins (in order to ensure alignment of all hinge elements and correct door opening/closing).
2. Adjust passive door leaf so that the head (sealing) surface of the coaming and the door angle bar form one surface, maximum deviation –  $\pm 0.5\text{mm}$ .

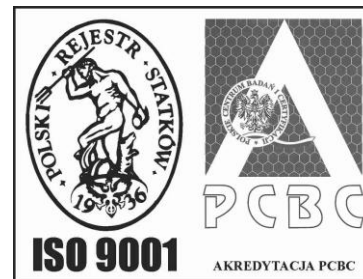


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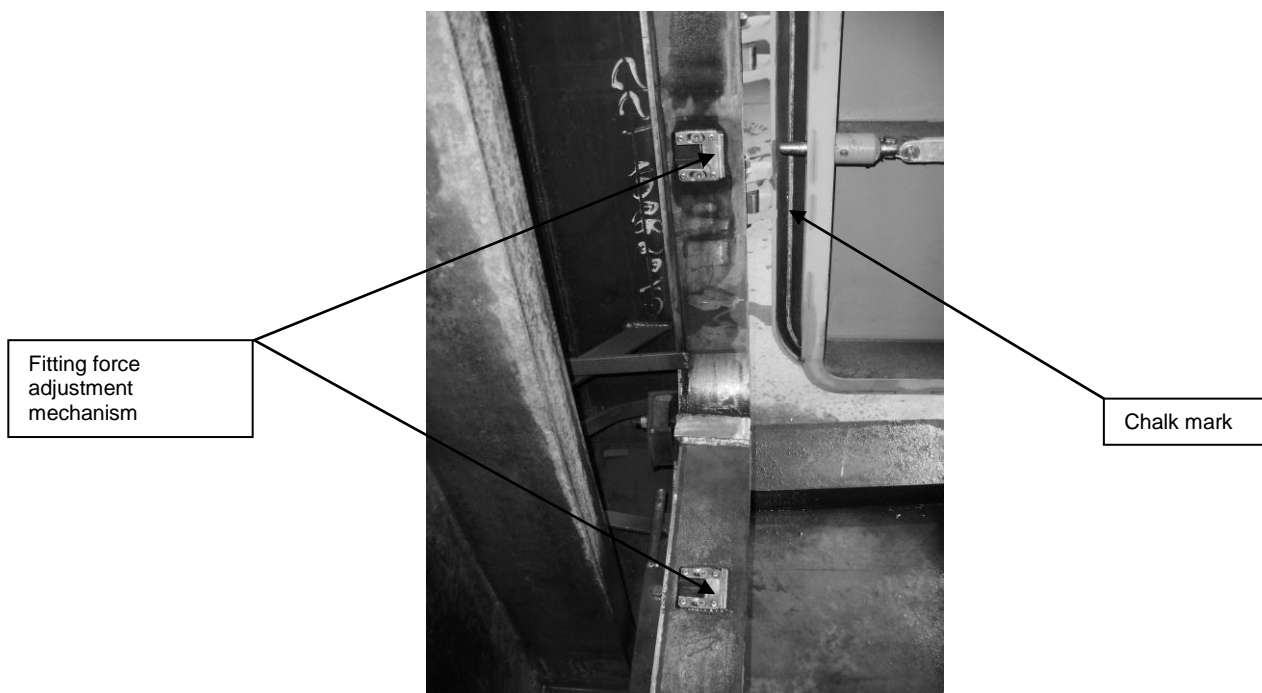
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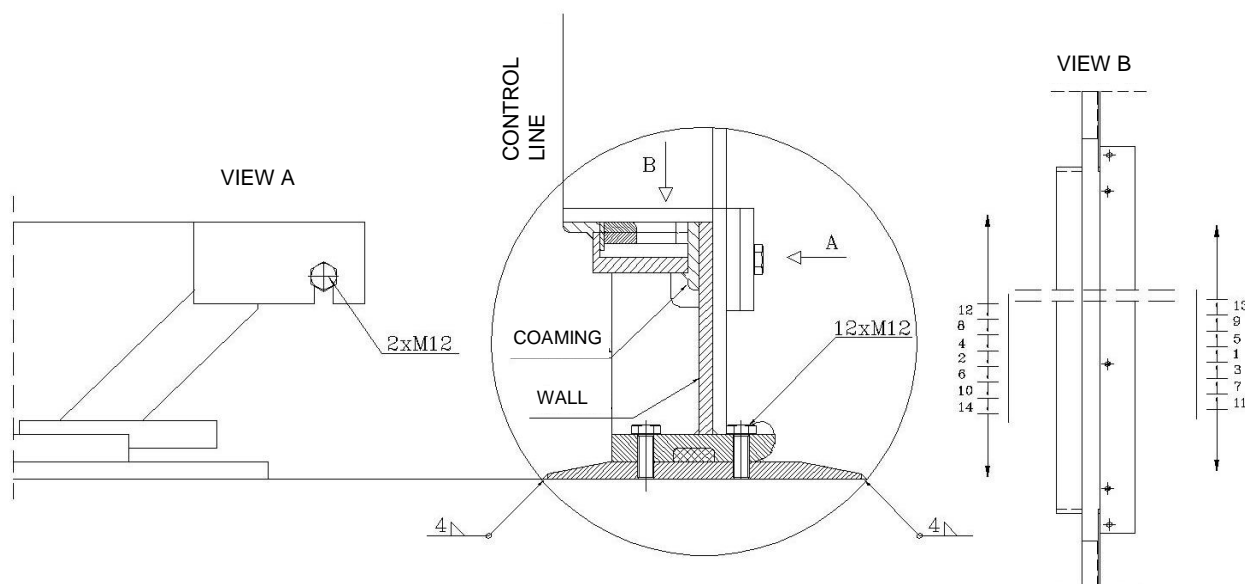
3. Check whether the door fits tight – use chalk (chalk head surface of the coaming along all perimeter and vertical angle bar in the passive door leaf). Close and open the door, check if chalk marked the sealing along its all perimeter.



4. Door fitting force may be adjusted by changing the number of adjustment plates in retaining skids (distance plates are delivered with the door).

## V. Doorsill installation:

1. Once the coaming is welded in the wall and all necessary adjustment tasks are completed, place the doorsill in its position. First, weld the fixed doorsill in.
  - join the fixed doorsill with the removable one and install it in the wall. Adjust the doorsill so that the coaming welded in the wall is aligned with the doorsill coaming (CONTROL LINE).
  - Make tack welds 20mm long in an order indicated in the drawing, maintaining a distance of 200mm.
  - The final welds 70 to 100mm long must be made in an order specified in the drawing until creating a continuous weld along the whole coaming. The number of tack welds and final welds depend on a size of the doorsill.

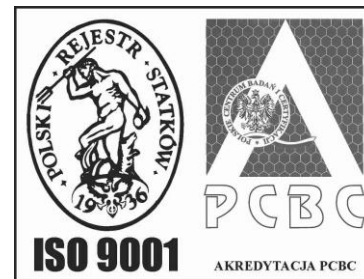


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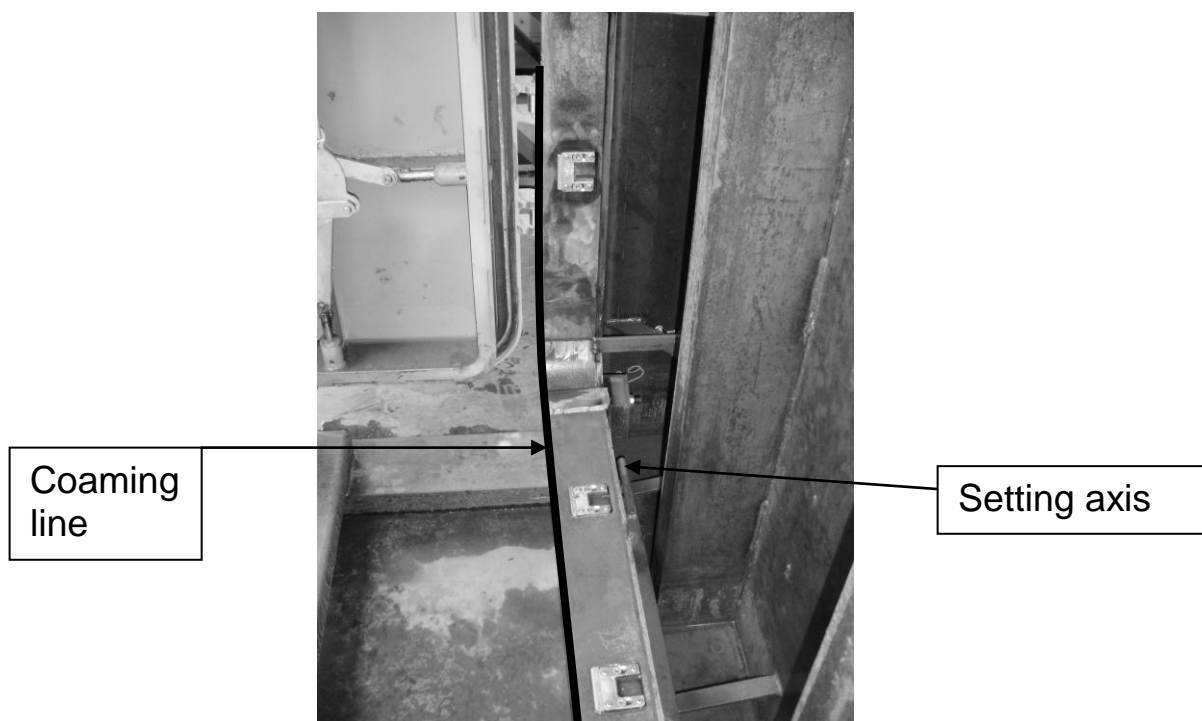
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2. Check the removable doorsill installed with the coaming – ensure that it forms an even surface on the wall with doorsill coaming. Make up the weld on the fixed doorsill. Permissible deviations –  $1 \div 2$ mm on the doorsill length.



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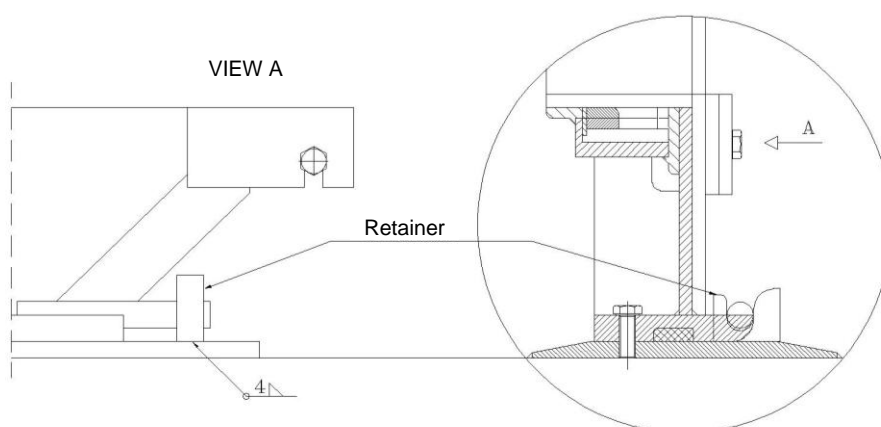
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3. The next step is to weld retainers to the floor under setting axes.



4. The next step – door installation as per section IV.

*BOHAMET does not assume responsibility for door installation conducted by the customer without observance of the instructions in this document.*