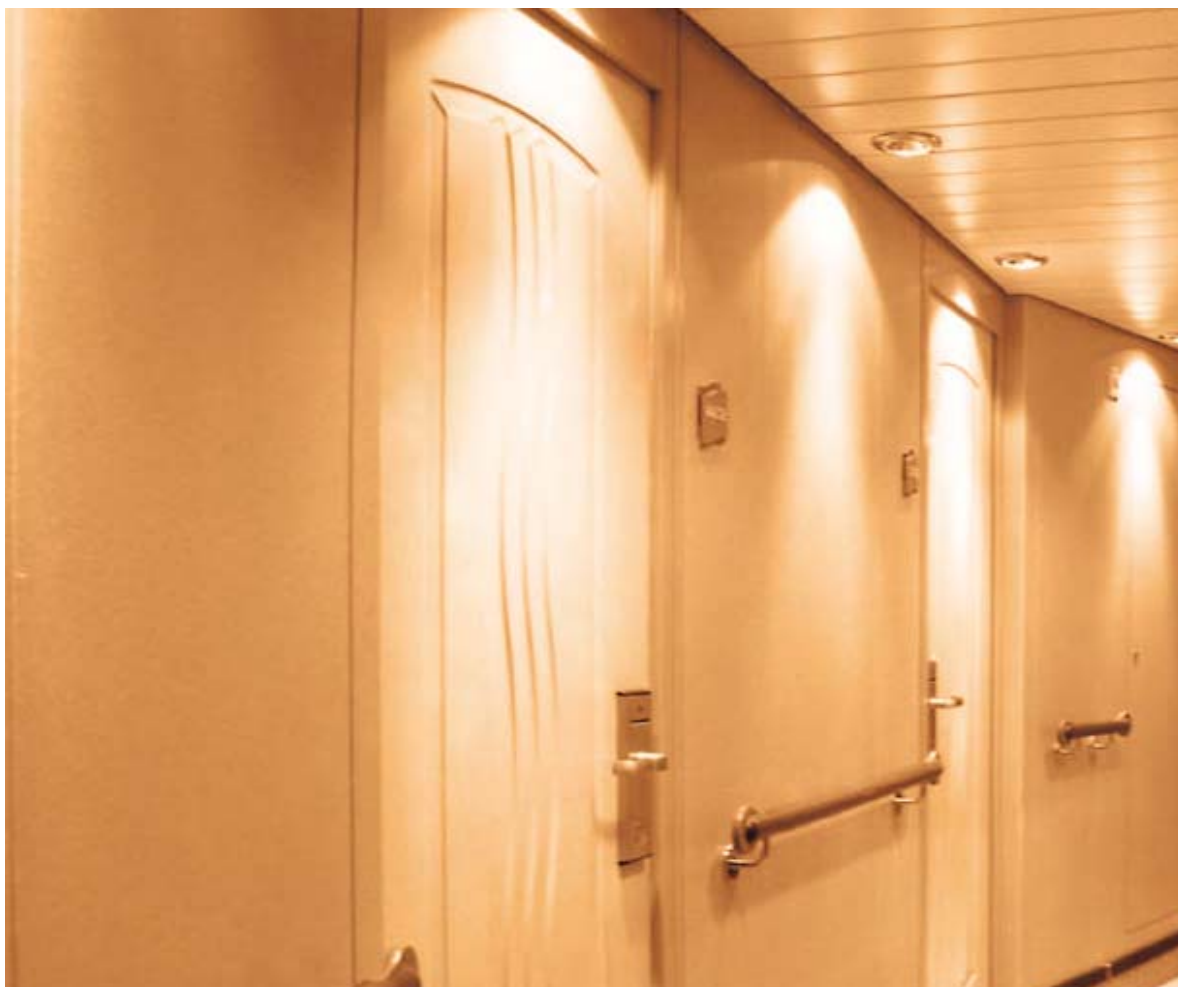


MADRID - SHANGAI - HONG KONG - MÉXICO D.F.



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## WALL PANEL SYSTEM

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## 1. BRIEF

The specialty of WHL Accommodation system:

1. **Fire Protecting:** Main elements of WHL accommodation system meet requirements for fire resistant in accordance with the international convention for the safety of life at sea (SOLAS), and market demands. We carry out fire tests and approved by most of authorities and classification societies on the world.
2. **Comfort:** The surface of all elements of WHL accommodation system are decorated with vinyl coating film which has a nice smooth decorative surface with protective membrane, the film has nice color and coordinated patterns and can combined the surroundings of accommodation to a warm and comfortable living space for you.
3. **Acoustic:** The elements of WHL accommodation system meet requirements for reduction airborne sound transmission from 29 to 45 dB. The installation method and design of high reduction sound panel joints takes care of structure borne sound transmission and vibrations.
4. **Insulation thermal:** The core of all elements of system is made of low - weight rock wool which gives a high thermal resistance. So, the elements have a nice insulation to temperature.
5. **Light weight:** The weight of marine products has a great importance for ships, especially to naval boats. The weight of aluminum honeycomb panel in WHL accommodation panel system is 7.6 kg/m<sup>2</sup> only, so, by choosing elements of WHL accommodation system for each purpose the total weight of a ship can be kept to a minimum.
6. **Easy installation:** WHL accommodation system is a prefabricated standard system and to be made up of two different types: Modular and non - modular type.
  - 6.1. **The modular type:** the corner panel is set at the corner of the cabin; the standard panels (width is equal to 550 mm) are arranged between the corner panels. The position of last panel is full of the non - standard panel.
  - 6.2. **The non - modular type:** all standard panels are installed only around cabin, the end panel is seeing to make possible to adjust easily to practical measure tolerances and both end panels are joined with end profiles.
  - 6.3. To connect panels with doors, steel bulkhead and deck with top and bottom profiles easily during installation on board.

2. STRUCTURE AND SPECIALITY OF WALL AND LINING PANELS



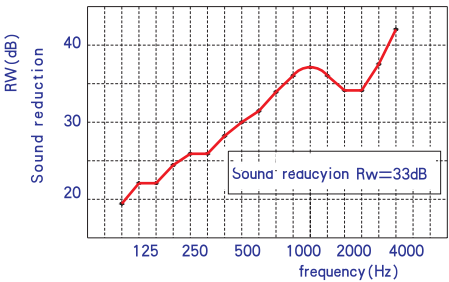
STRUC: 0.6mmPVC laminated steel sheet+ rockwool( 150kg/m<sup>3</sup> )+0.6mm galvanized steel sheet  
(Total thickness is 25mm)

FIRE CLASS : <u>B-0</u>	THERMAL RESISTANCE : <u>0.55m<sup>2</sup> °C/W</u>
PANEL WEIGHT : <u>13.9kg/m<sup>2</sup></u>	SOUND REDUCTION : <u>30dB</u>
SYSTEM WEIGHT : <u>15.3kg/m<sup>2</sup></u>	SIZE TOLERANCES: WIDTH: <u>B<sub>-1</sub><sup>0</sup></u> HEIGHT: <u>H<sub>-3</sub><sup>0</sup></u> THICKNESS: <u>T<sub>-1</sub><sup>0</sup></u>



STRUC: 0.6mmPVC laminated steel sheet+ rockwool( 150kg/m<sup>3</sup> )+0.6mmPVC laminated steel sheet  
(Total thickness is 50mm)

FIRE CLASS : <u>B-15</u>	THERMAL RESISTANCE : <u>1.04m<sup>2</sup> °C/W</u>
PANEL WEIGHT : <u>17.9kg/m<sup>2</sup></u>	SOUND REDUCTION : <u>33dB</u>
SYSTEM WEIGHT : <u>18.7kg/m<sup>2</sup></u>	SIZE TOLERANCES: WIDTH: <u>B<sub>-1</sub><sup>0</sup></u> HEIGHT: <u>H<sub>-3</sub><sup>0</sup></u> THICKNESS: <u>T<sub>-1</sub><sup>0</sup></u>





STRUC: 0.6mmPVC laminated steel sheet+rockwool ( $150\text{kg}/\text{m}^3$ ) +0.6mmPVC laminated steel sheet  
( Totalthickness is 70mm)

FIRE CLASS : B-15

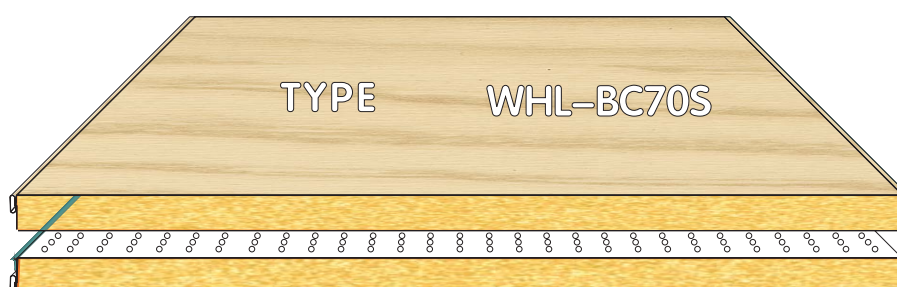
THERMAL RESISTANCE :  $1.48\text{m}^2\text{ }^\circ\text{C}/\text{W}$

PANEL WEIGHT :  $19.9\text{kg}/\text{m}^2$

SOUND REDUCTION : 35dB

SYSTEM WEIGHT :  $21.7\text{kg}/\text{m}^2$

SIZE TOLERANCES: WIDTH:  $B_{-1}^0$  HEIGHT:  $H_{-3}^0$  THICKNESS:  $T_{-1}^0$



STRUC:  $2 \times$  (0.6mmPVC laminated steel sheet+rockwool( $150\text{kg}/\text{m}^3$ ))+0.6mm  
galvanized steel sheet with small hole)+20mm air space(total thickness 70mm)

FIRE CLASS : B-15

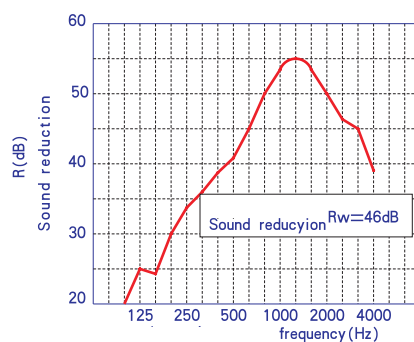
THERMAL RESISTANCE :  $1.84\text{m}^2\text{ }^\circ\text{C}/\text{W}$

PANEL WEIGHT :  $27.5\text{kg}/\text{m}^2$

SOUND REDUCTION : 46dB

SYSTEM WEIGHT :  $28.4\text{kg}/\text{m}^2$

SIZE TOLERANCES: WIDTH:  $B_{-1}^0$  HEIGHT:  $H_{-3}^0$  THICKNESS:  $T_{-1}^0$





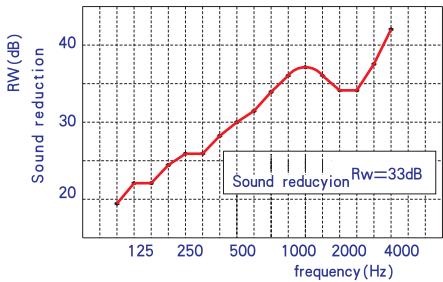
STRUC: 0.6mmPVC laminated steel sheet+ rockwool( $150\text{kg}/\text{m}^3$ )+0.6mm galvanized steel sheet  
(Total thickness is 25mm)

FIRE CLASS : $\text{B-0}$	THERMAL RESISTANCE : $0.50\text{m}^2\text{ }^\circ\text{C}/\text{W}$
PANEL WEIGHT : $14.3\text{kg}/\text{m}^2$	SOUND REDUCTION : 30dB
SYSTEM WEIGHT : $15.1\text{kg}/\text{m}^2$	SIZE TOLERANCES: WIDTH: $\text{B}_{-1}^0$ HEIGHT: $\text{H}_{-3}^0$ THICKNESS: $\text{T}_{-1}^0$

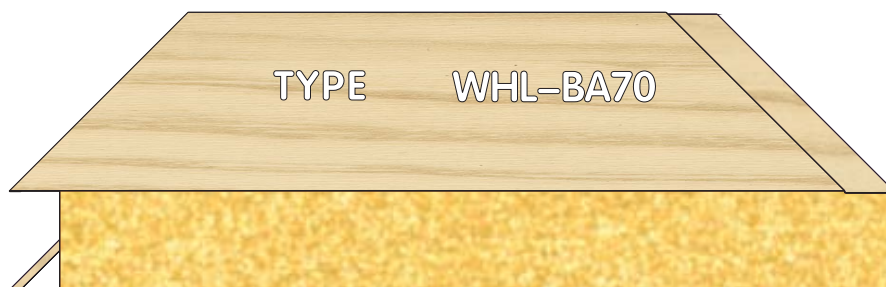


STRUC: 0.6mmPVC laminated steel sheet+ rockwool( $150\text{kg}/\text{m}^3$ )+0.6mmPVC laminated steel sheet  
(Total thickness is 50mm)

FIRE CLASS : $\text{B-15}$	THERMAL RESISTANCE : $1.04\text{m}^2\text{ }^\circ\text{C}/\text{W}$
PANEL WEIGHT : $18.2\text{kg}/\text{m}^2$	SOUND REDUCTION : 33dB
SYSTEM WEIGHT : $18.7\text{kg}/\text{m}^2$	SIZE TOLERANCES: WIDTH: $\text{B}_{-1}^0$ HEIGHT: $\text{H}_{-3}^0$ THICKNESS: $\text{T}_{-1}^0$

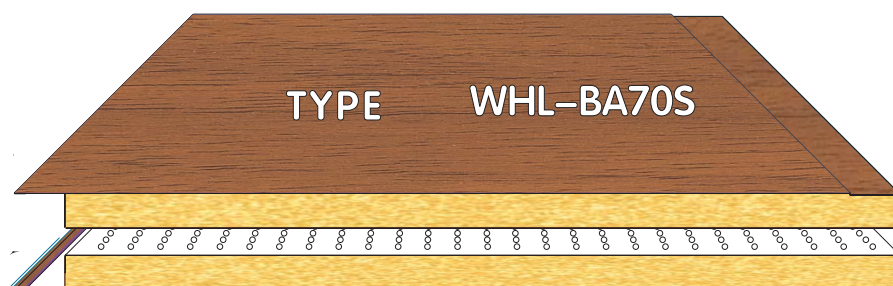






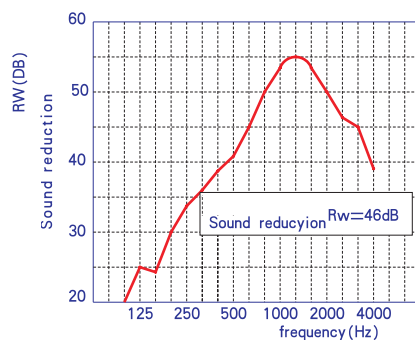
STRUC: 0.6mmPVC laminated steel sheet+rockwool( $150\text{kg}/\text{m}^3$ )+0.6mmPVC laminated steel sheet  
(Total thickness is 70mm)

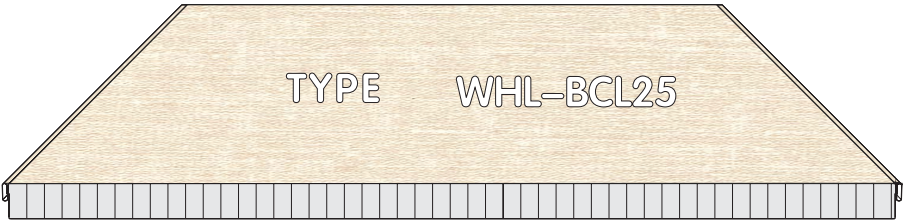
FIRE CLASS :	B-15	1.48m <sup>2</sup> °C/W
PANEL WEIGHT :	19.2kg/m <sup>2</sup>	SOUND REDUCTION : 35dB
SYSTEM WEIGHT :	20.0kg/m <sup>2</sup>	SIZE TOLERANCES: WIDTH: B <sub>-1</sub> <sup>0</sup> HEIGHT: H <sub>-3</sub> <sup>0</sup> THICKNESS: T <sub>-1</sub> <sup>0</sup>



STRUC: 2 × [ 0.6mmPVC laminated steel sheet+rockwool( $150\text{kg}/\text{m}^3$ )+0.6mm  
galvanized steel sheet with small hole ] +20mm air space(total thickness 70mm)

FIRE CLASS :	B-15	THERMAL RESISTANCE : 1.84m <sup>2</sup> °C/W
PANEL WEIGHT :	27.5kg/m <sup>2</sup>	SOUND REDUCTION : 46dB
SYSTEM WEIGHT :	28.4kg/m <sup>2</sup>	SIZE TOLERANCES: WIDTH: B <sub>-1</sub> <sup>0</sup> HEIGHT: H <sub>-3</sub> <sup>0</sup> THICKNESS: T <sub>-1</sub> <sup>0</sup>





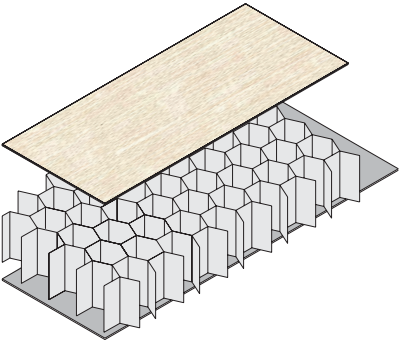
STRUC; 0.6mmPVC laminated steel sheet+aluminum honeycomb 0.05×10+0.6mm galvanized steel sheet  
(Total thickness is 25mm)

FIRE CLASS :	B-0	PANEL WEIGHT :	9.2kg/m <sup>2</sup>	SYSTEM WEIGHT :	9.6kg/m <sup>2</sup>
SIZE TOLERANCES; WIDTH; B <sup>0</sup> <sub>-1</sub> HEIGHT; H <sup>0</sup> <sub>-3</sub> THICKNESS; T <sup>0</sup> <sub>-1</sub>					



STRUC; 0.6mmPVC laminated steel sheet+aluminum honeycomb 0.05×10+0.6mmPVC laminated steel sheet  
(Total thickness is 50mm)

FIRE CLASS :	B-0	PANEL WEIGHT :	9.5kg/m <sup>2</sup>	SYSTEM WEIGHT :	9.9kg/m <sup>2</sup>
SIZE TOLERANCES; WIDTH; B <sup>0</sup> <sub>-1</sub> HEIGHT; H <sup>0</sup> <sub>-3</sub> THICKNESS; T <sup>0</sup> <sub>-1</sub>					







STRUC: 0.6mmPVC laminated steel sheet+aluminum honeycomb 0.05×10+0.6mm galvanized steel sheet  
(Total thickness is 25mm)

FIRE CLASS : B-0 PANEL WEIGHT : 9.4kg/m<sup>2</sup> SYSTEM WEIGHT : 9.8kg/m<sup>2</sup>

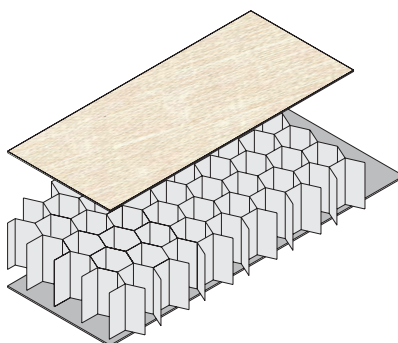
SIZE TOLERANCES: WIDTH: B<sub>-1</sub><sup>0</sup> HEIGHT: H<sub>-3</sub><sup>0</sup> THICKNESS: T<sub>-1</sub><sup>0</sup>



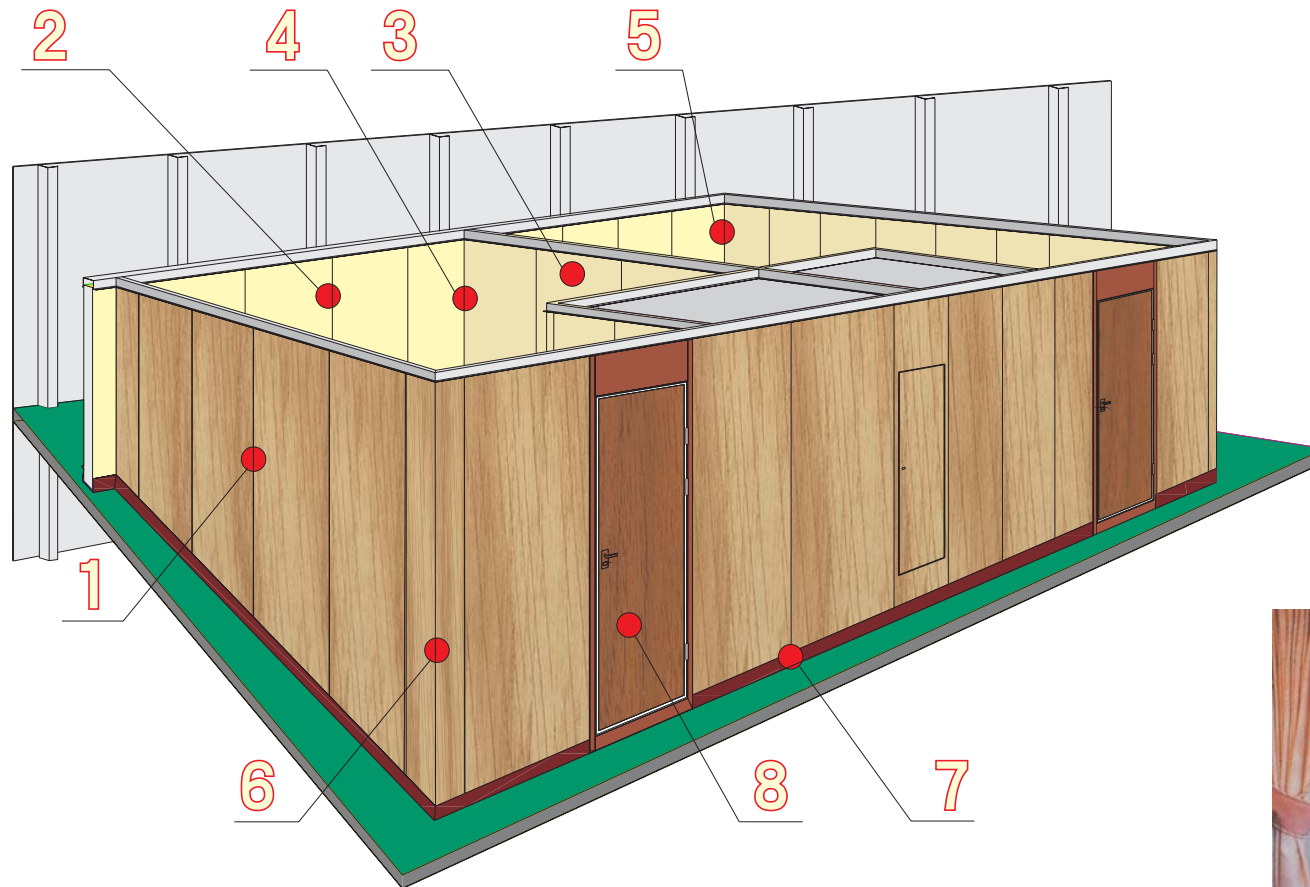
STRUC: 0.6mmPVC laminated steel sheet+aluminum honeycomb 0.05×10+0.6mmPVC laminated steel sheet  
(Total thickness is 50mm)

FIRE CLASS : B-0 PANEL WEIGHT : 9.7kg/m<sup>2</sup> SYSTEM WEIGHT : 10.1kg/m<sup>2</sup>

SIZE TOLERANCES: WIDTH: B<sub>-1</sub><sup>0</sup> HEIGHT: H<sub>-3</sub><sup>0</sup> THICKNESS: T<sub>-1</sub><sup>0</sup>



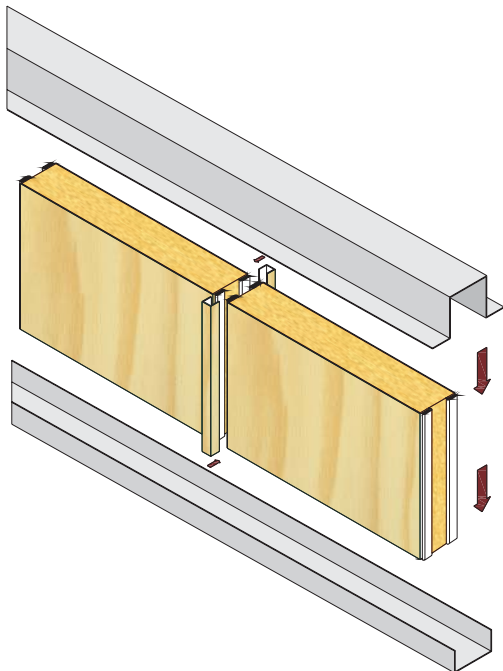
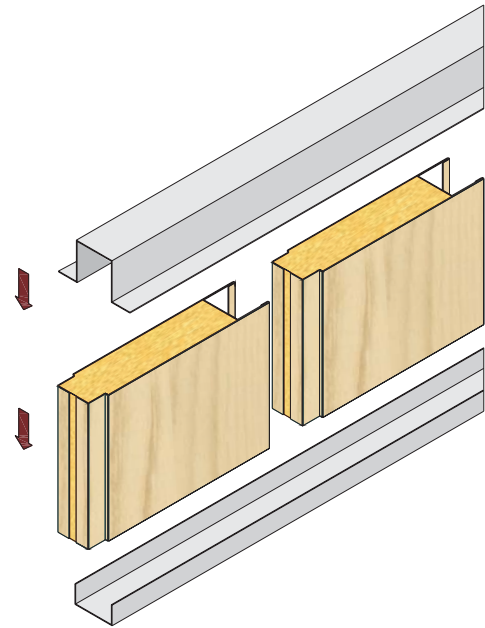
### 3. THE ACCOMMODATION SYSTEM - DETAILS



### 3.1. Detail of Joint for Wall Panel

WHL – BA50 panel is used as partition, but with properties that make it suitable for almost all accommodation purposes.

Available with decorative finish on double side, connected by special top and bottom profiles.



WHL – BC50 panel is used as partition, but with properties that make it suitable for almost all accommodation purposes.

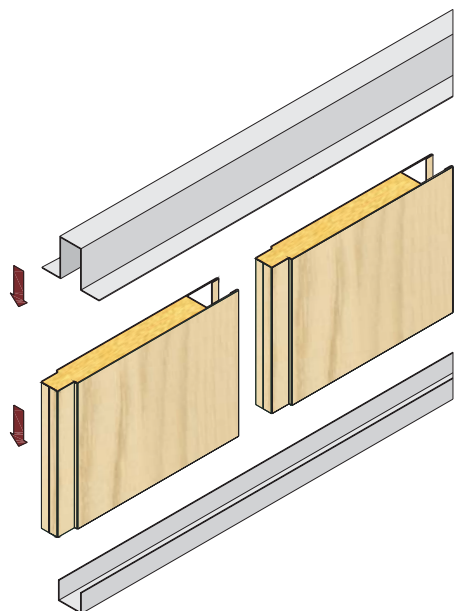
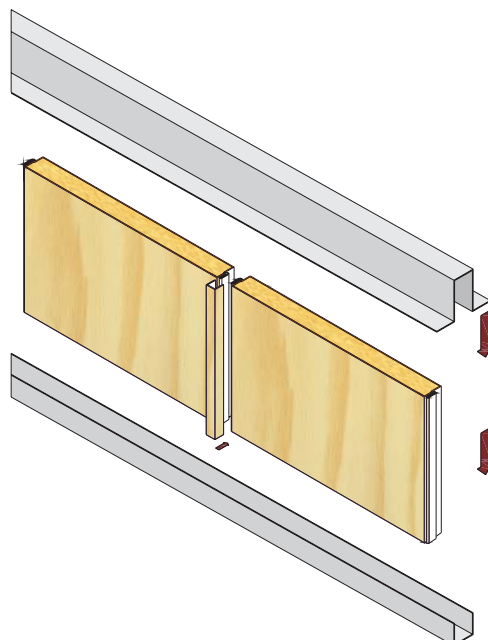
Available with decorative finish on double side, connected by special top and bottom profiles.

### 3.2. Detail of Joint for Lining Panel

WHL – BC25 panel is used as lining at internal steel – head bulk.

Available with decorative finish on one side only.

Connected by special top and bottom profiles.



WHL – BA25 panel is used as lining at internal steel – head bulk.

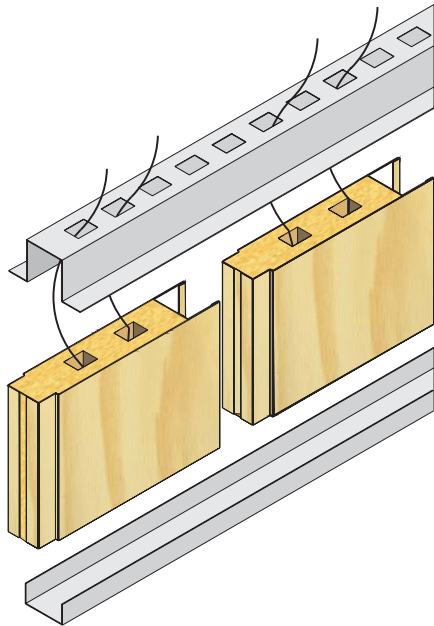
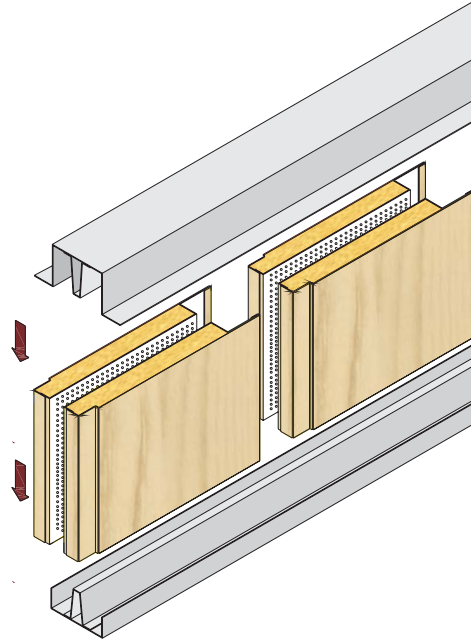
Available with decorative finish on one side only.

Connected by special top and bottom profiles.

### 3.3. Detail of Joint for Sound Reduction Panel and Cable Panel

WHL – BA70S and WHL – BC70S are partition panels of sandwich construction with high sound reduction values.

Connected by special top and bottom profiles.

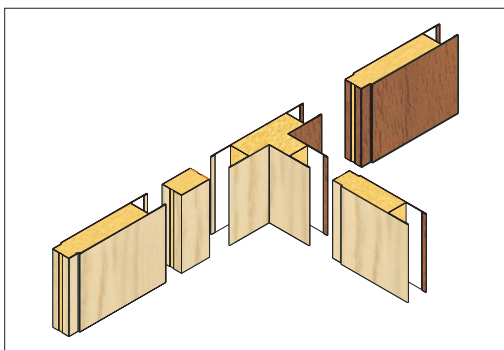


The panel is pre-arranged with two holes for cables.

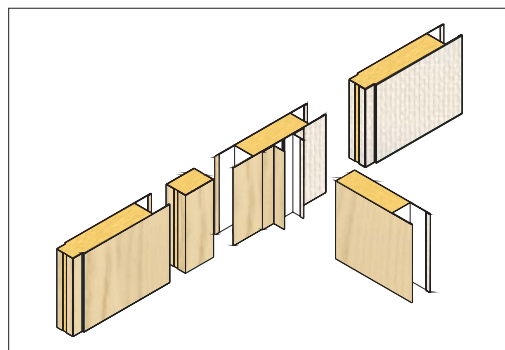
Standard size of holes is 25 X 50mm.

Connected by top and bottom profiles.

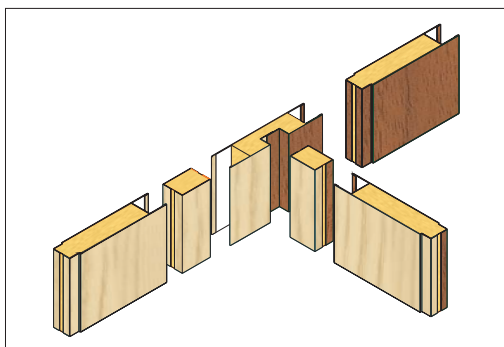
### 3.4. Detail of Joint for Panels at corner of Neighbor Cabins



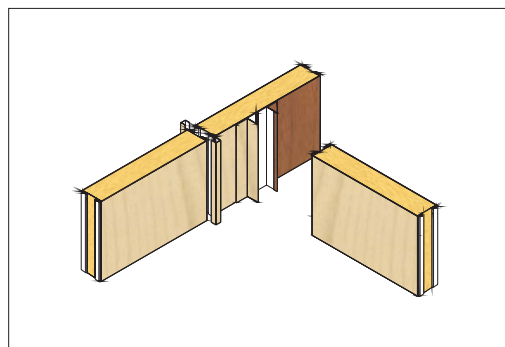
Detail of standard T corner between cabins



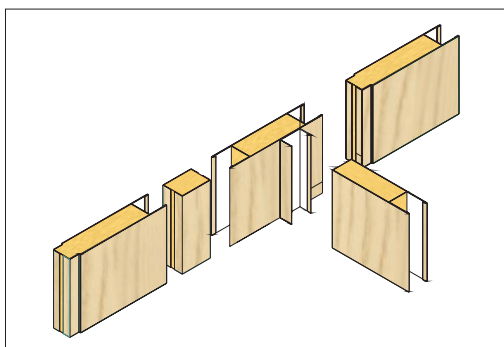
Detail of cover between cabins with different color



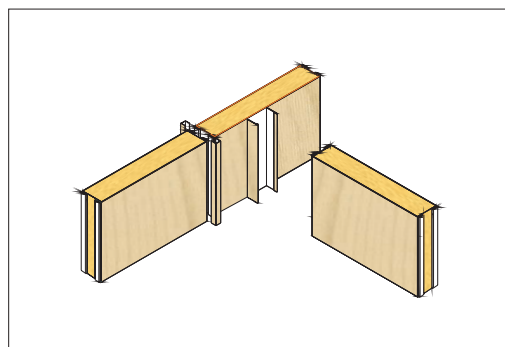
Detail of recess panel T connection



Detail of cover between cabins with different colors



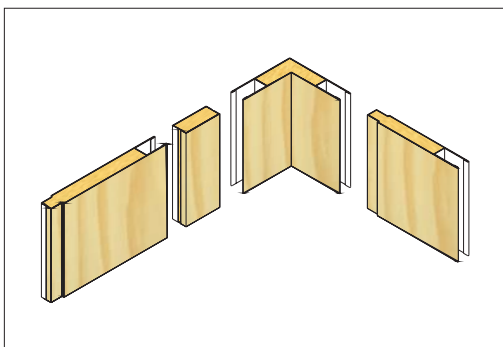
Detail of U profile connection



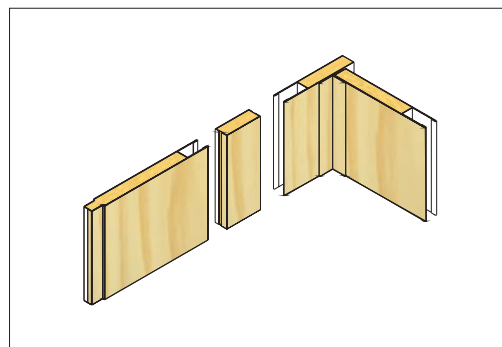
Detail of U profile connection



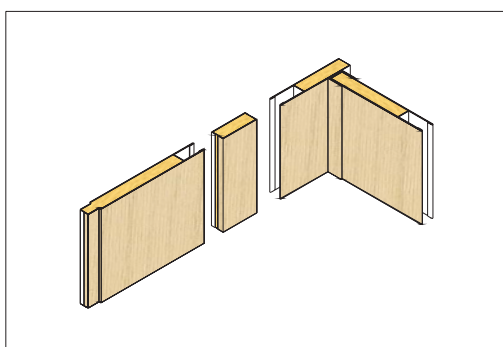
### 3.5. Detail of Joint for Panels at corner



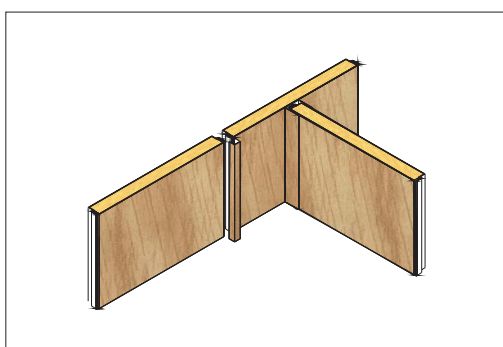
Detail of standard inside corner cabin



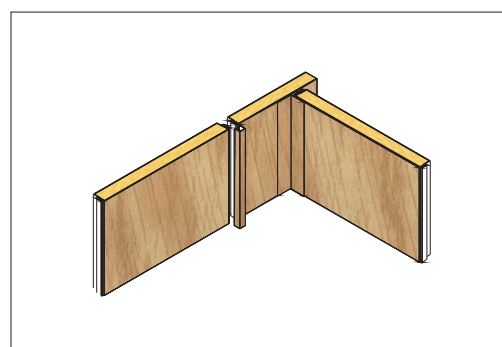
Detail of inside cover 1 in cabin



Detail of inside cover 2 in cabin

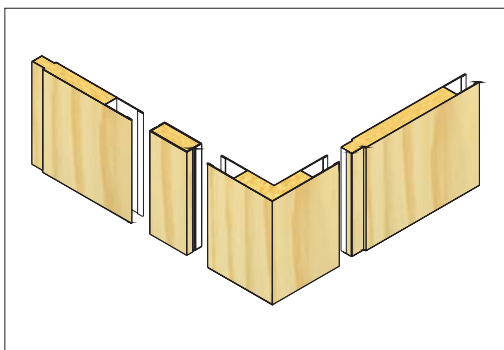


Detail of inside cover 2 in cabin

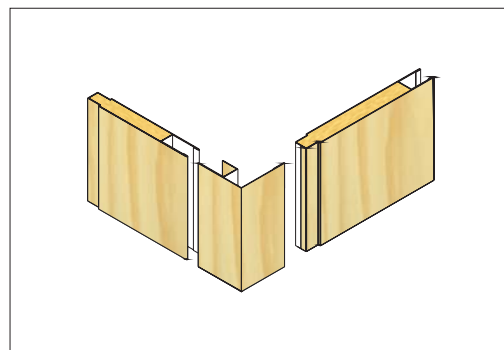


Detail of inside cover 1 in cabin

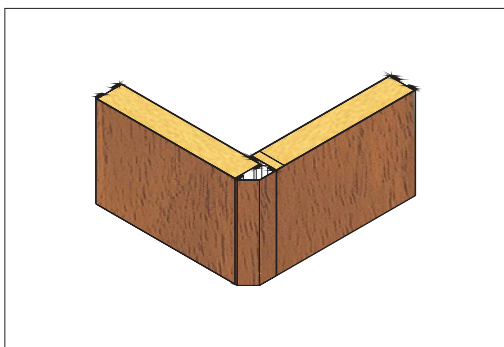
### 3.6. Detail of Joint for Wall and Lining Panels at corner



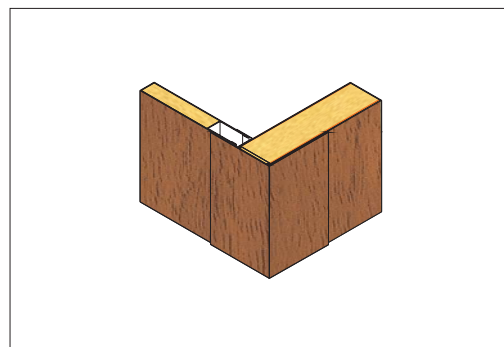
Detail of standard out corner in cabin



Detail of out cover in cabin



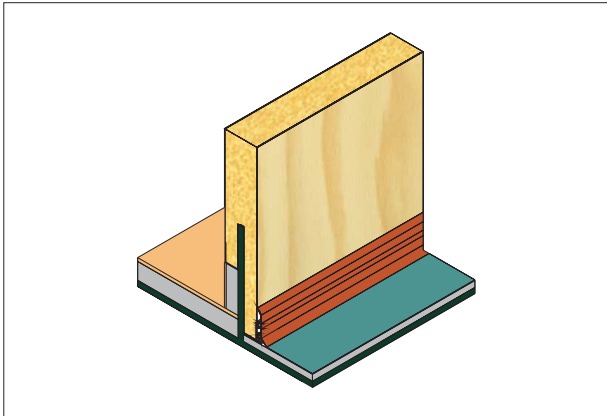
Detail of out cover in cabin  
(only WHL-BC25, WHL-BC50)



Detail of out cover in cabin  
(only panels from different thickness)

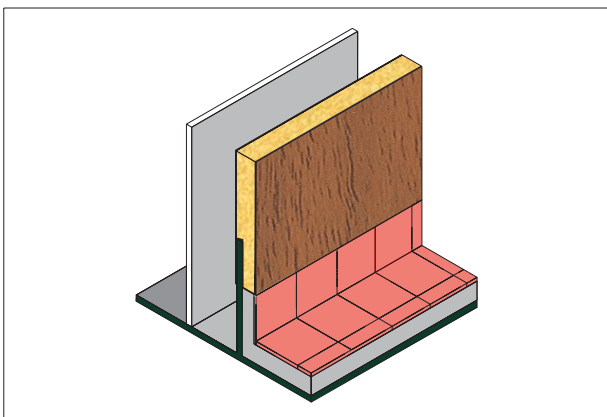
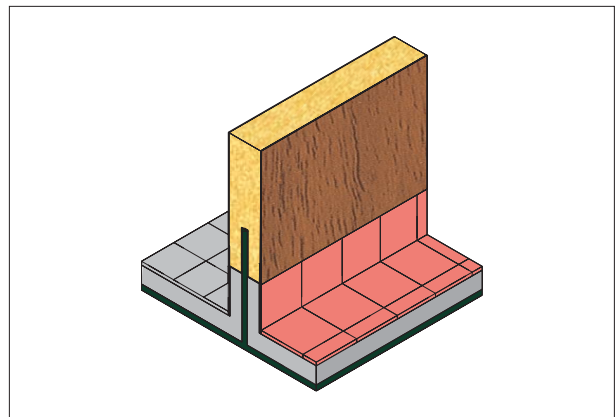


### 3.7. Detail of Bottom of Panel in Wet Cabin



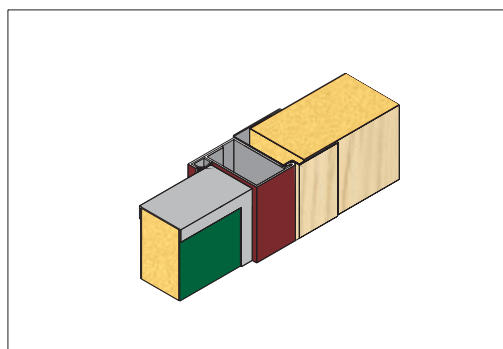
Bottom detail of 50mm panel with asymmetric  
between wet cabin and non-wet cabin.

Bottom detail of 50mm panel with symmetric  
between two wet cabins.

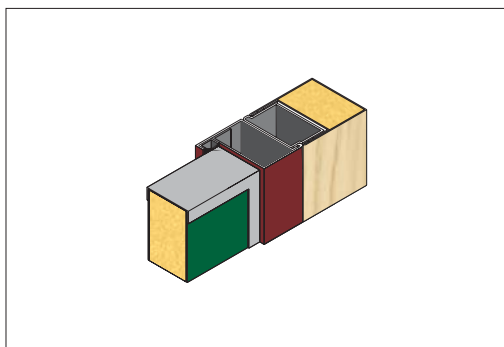


Bottom detail of 25mm lining panel of wet cabin.

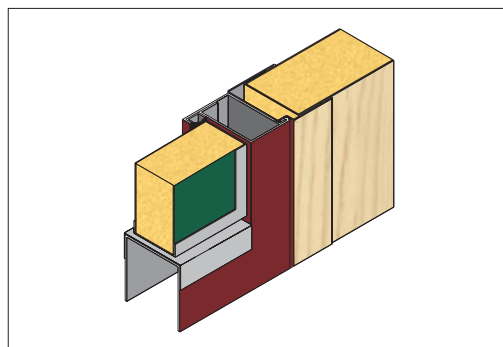
### 3.8. Detail of B – 0, B – 15 – Class doors of Cabin



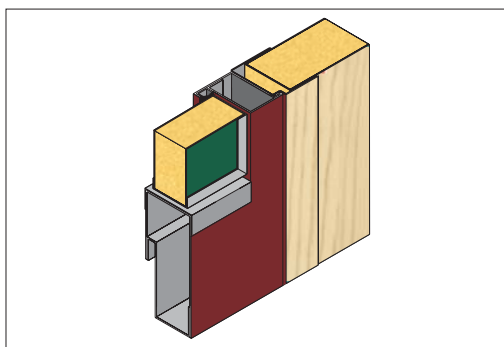
Popular joint between cabin door and wall panel



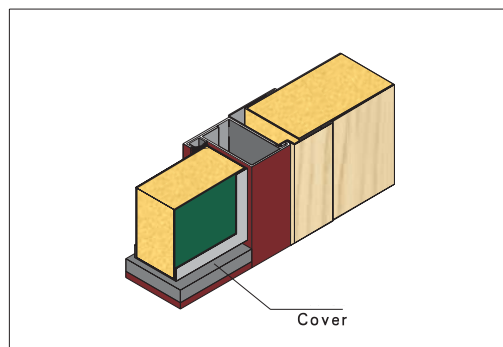
Joint between cabin door and WHLA50 wall panel



Detail of doorsill of cabin door



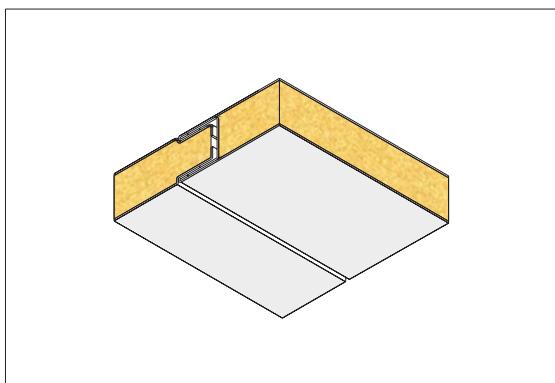
Detail of bottom of cabin door for wet cabin



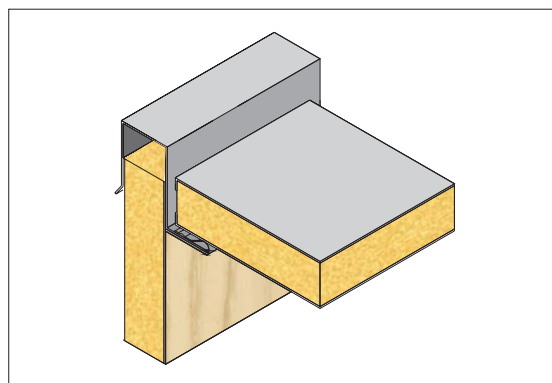
Detail of bottom of cabin door without doorsill

## 4. STRUCTURE AND SPECIALITY OF INCESSANSY CEILING

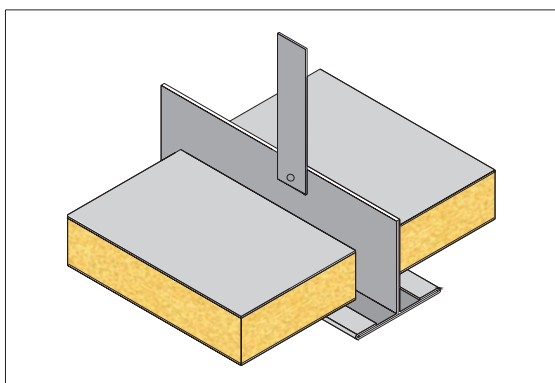
### 4.1. Details



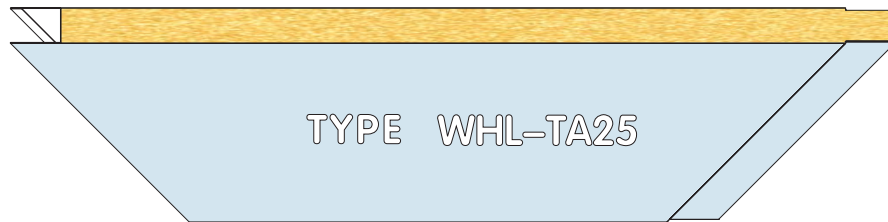
Typical detail to install ceiling



Detail of stop ceiling element



Detail of extended ceiling element



STRUC: 0.6mmPVC laminated steel sheet+rockwool( $150\text{kg}/\text{m}^3$ )+0.6mm galvanized steel sheet  
(Total thickness is 25mm)

FIRE CLASS : B-0

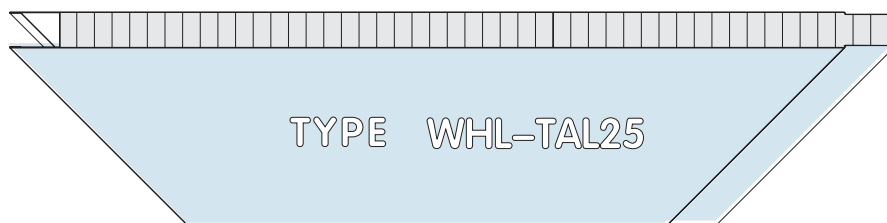
THERMAL RESISTANCE :  $0.50\text{m}^2\text{°C}/\text{W}$

PANEL WEIGHT :  $13.9\text{kg}/\text{m}^2$

SOUND REDUCTION : 30dB

SYSTEM WEIGHT :  $15.3\text{kg}/\text{m}^2$

SIZE TOLERANCES: WIDTH:  $B_{-1}^0$  HEIGHT:  $H_{-3}^0$  THICKNESS:  $T_{-1}^0$



STRUC: 0.6mmPVC laminated steel sheet+aluminum honeycomb  $0.05 \times 10$ +0.6mm galvanized steel sheet  
(Total thickness is 25mm)

FIRE CLASS : B-0

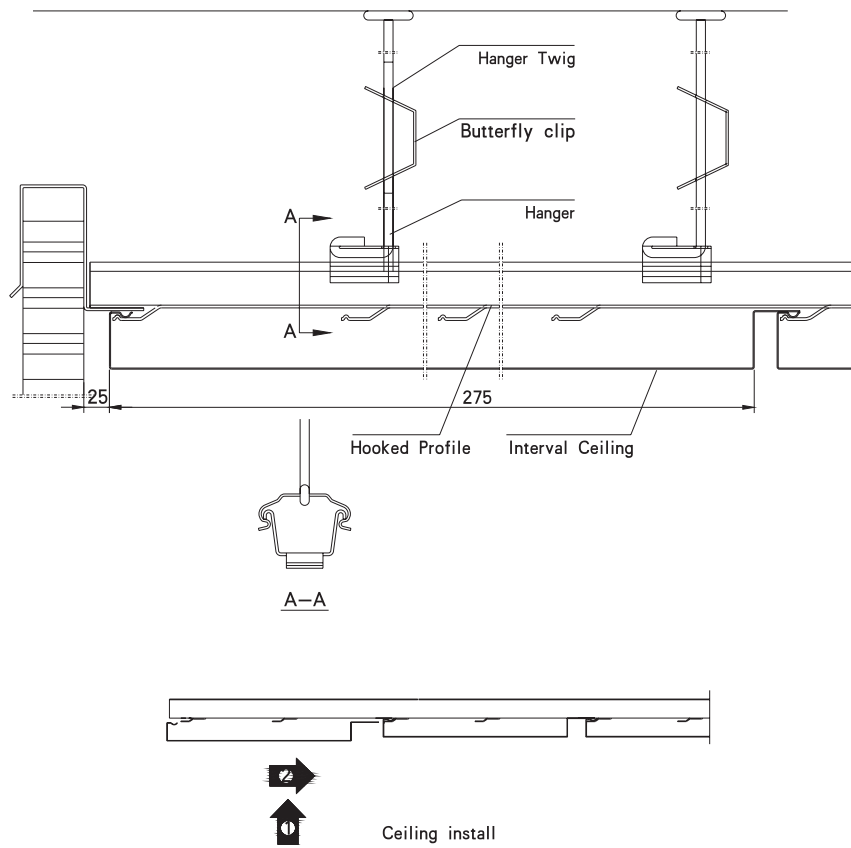
PANEL WEIGHT :  $9.4\text{kg}/\text{m}^2$

SYSTEM WEIGHT :  $9.8\text{kg}/\text{m}^2$

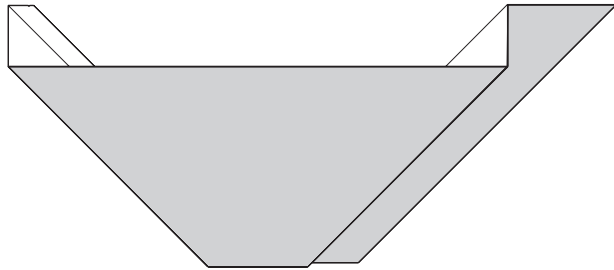
SIZE TOLERANCES: WIDTH:  $B_{-1}^0$  HEIGHT:  $H_{-3}^0$  THICKNESS:  $T_{-1}^0$



## 5. STRUCTURE AND SPECIALITY OF INTERVAL CEILING



## 5.1. Details



TYPE WHL-TD25

STRUCTURE: the quadrate ceiling panel  $25 \times 275\text{mm}$  to be made of 0.5mmPVC laminated(or enamel paint) steel sheet(or 1mm aluminium plate) and  $80\text{kg}/\text{m}^3$  rock wool to be laid on it, it is necessary for sound-absorption to open small holes on surface panel, the dia of hole is 2–4mm, the rate of opening hole is 15~20% and sound-absorption material to be laid on the ceiling, and the ceiling to be triced up with hooked profiles that to be made from 1mm galvanized steel sheet and the space of hook is 50mm, the space between ceiling panels is 25mm.

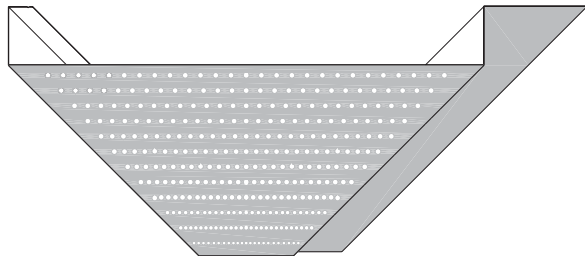
FIRE CLASS : B-0

PANEL WEIGHT :  $5.5\text{kg}/\text{m}^2$  (steel sheet)  $3.7\text{kg}/\text{m}^2$  (aluminium plate)

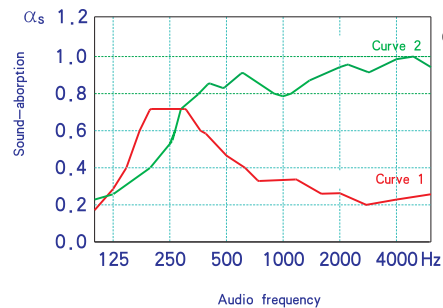
SYSTEM WEIGHT :  $6.4\text{kg}/\text{m}^2$  (steel sheet)  $4.6\text{kg}/\text{m}^2$  (aluminium plate)

EFFECT FOR SOUND—ABSORPTION :

Audio frequency	125	250	500	1000	2000	4000
Curve 1	0.29	0.71	0.47	0.34	0.27	0.21
Curve 2	0.23	0.50	0.80	0.77	0.96	1.00



WHL-TD25H  
TYPE (WITH NEEDLE HOLE)



CURVE1 : There not are holes on ceiling panel. The gap between two ceiling panels is 25mm(modle Of ceiling panel is 300 ), thickness Of ceiling panel is 25mm, the sound-absorption material is rock wool of  $80\text{kg}/\text{m}^3$ . Space between deck and ceiling panels is 200mm.

CURVE1 : There are small holes on ceiling panel. The gap between two ceiling panels is 25mm(modle Of ceiling panel is 300 ), thickness Of ceiling panel is 25mm, the sound-absorption material is rock wool of  $80\text{kg}/\text{m}^3$ . Space between deck and ceiling panels is 200mm.

## 6. PREFABRICATED PRIVATE SANITATION UNIT



The forms of fabricated modular wet units showed in the catalogue are used only for reference, as customers choose them. If you have other requirements, we shall offer the units in accordance with requirement of customers.

Floor of wet unit is made from 3mm steel plate and to be stiffened and to be covered with tiles or non slip coating. If it is necessary the floor could be equipped with electro thermal wire.

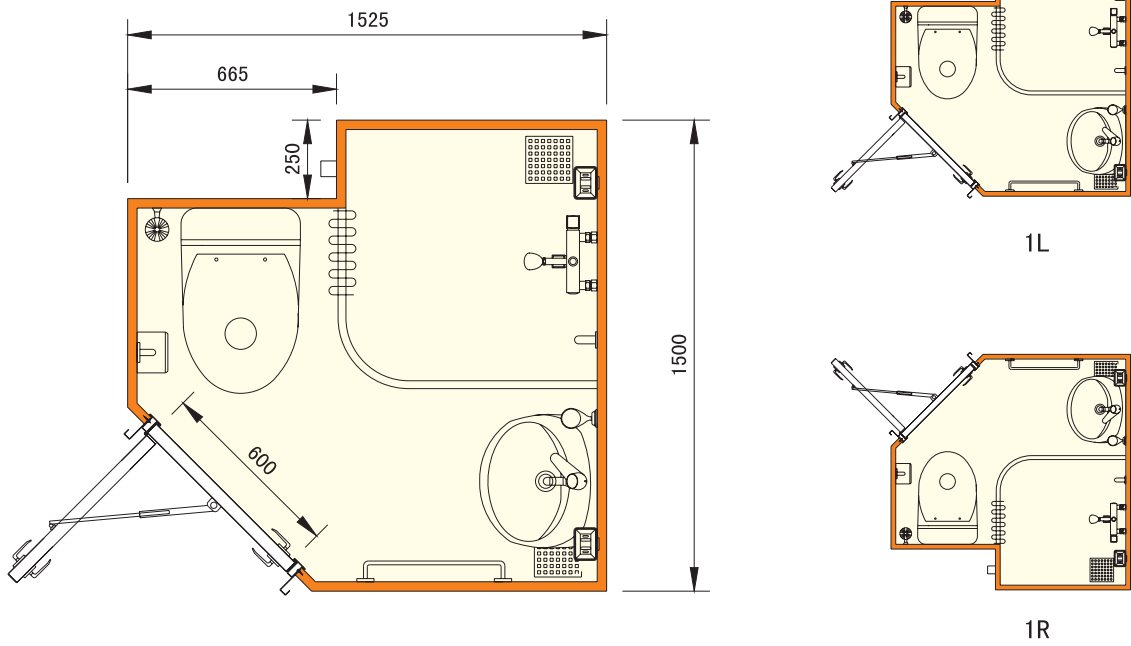
Rock wool panel or aluminium honeycomb panel decorated with PVC film or bake paint are used for walls, ceiling and doors of the wet unit. The weight of aluminium honeycomb used is reduced as much as 20-25%.

Equipments and accessories are basic configuration in wet unit. Customer can choose them.

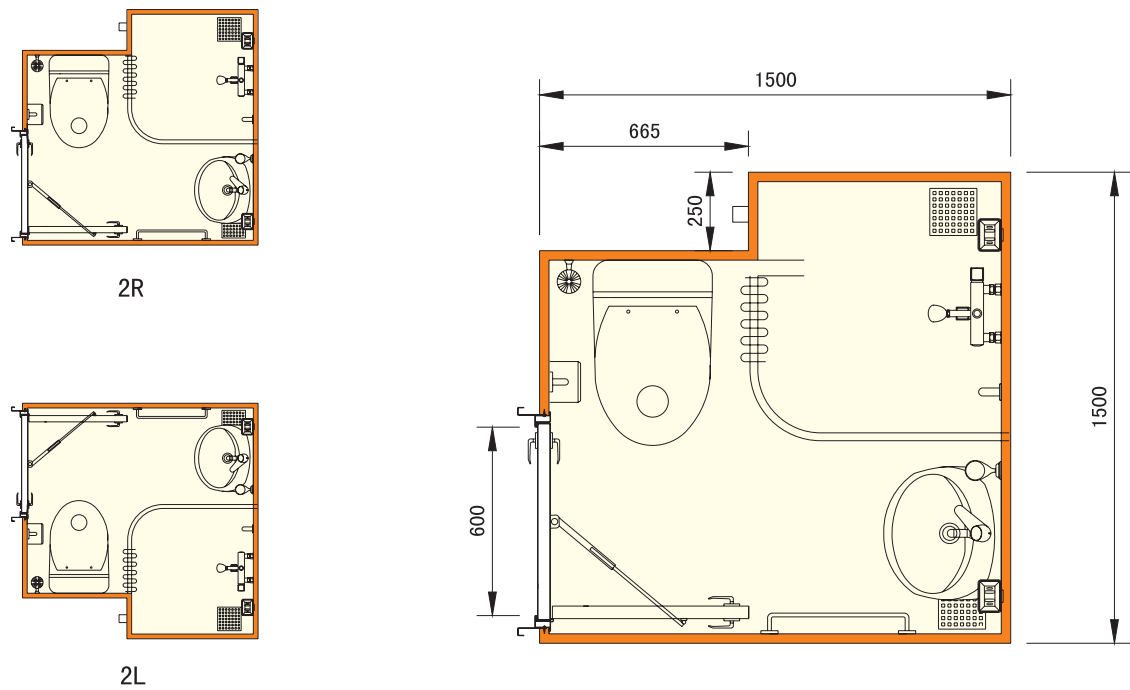
In local, where prefabricated modular wet unite not can be fixed, we can provide loose wet unit to be installed at local for choice.

6.1. Types

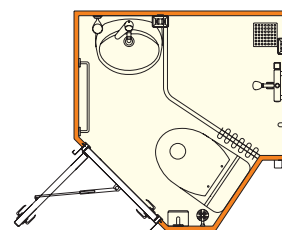
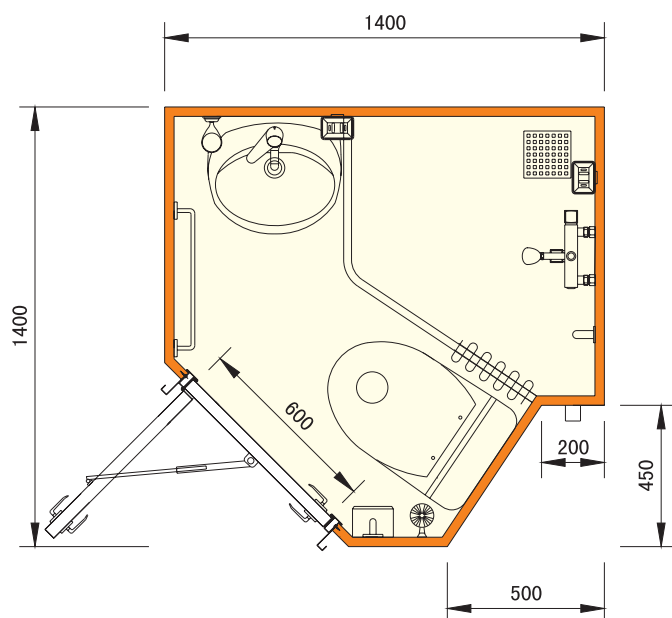
WHL-PSU1



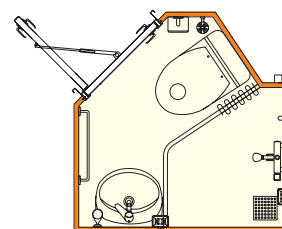
WHL-PSU2



## WHL-PSU3

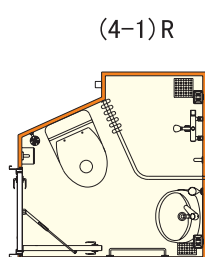


3L

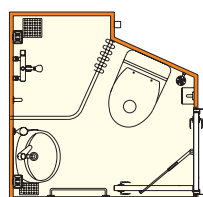


3R

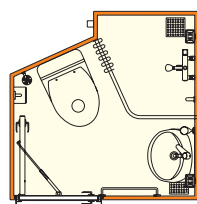
## WHL-PSU4



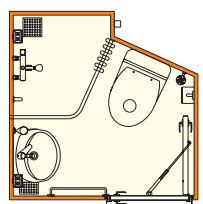
(4-1) R



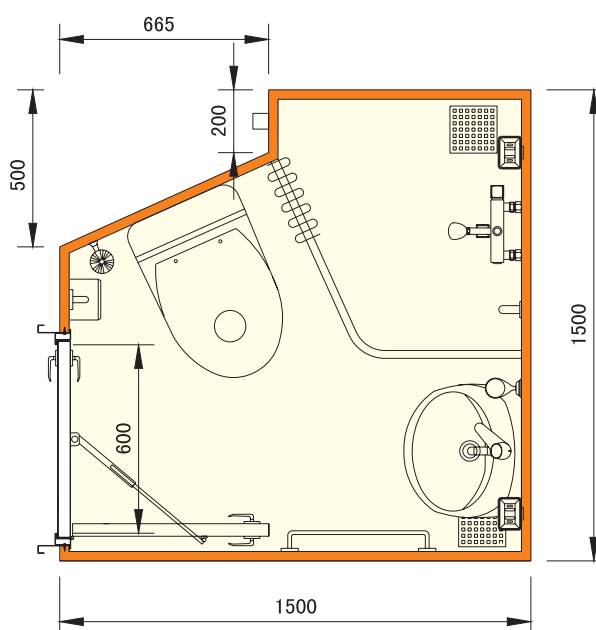
(4-1) L



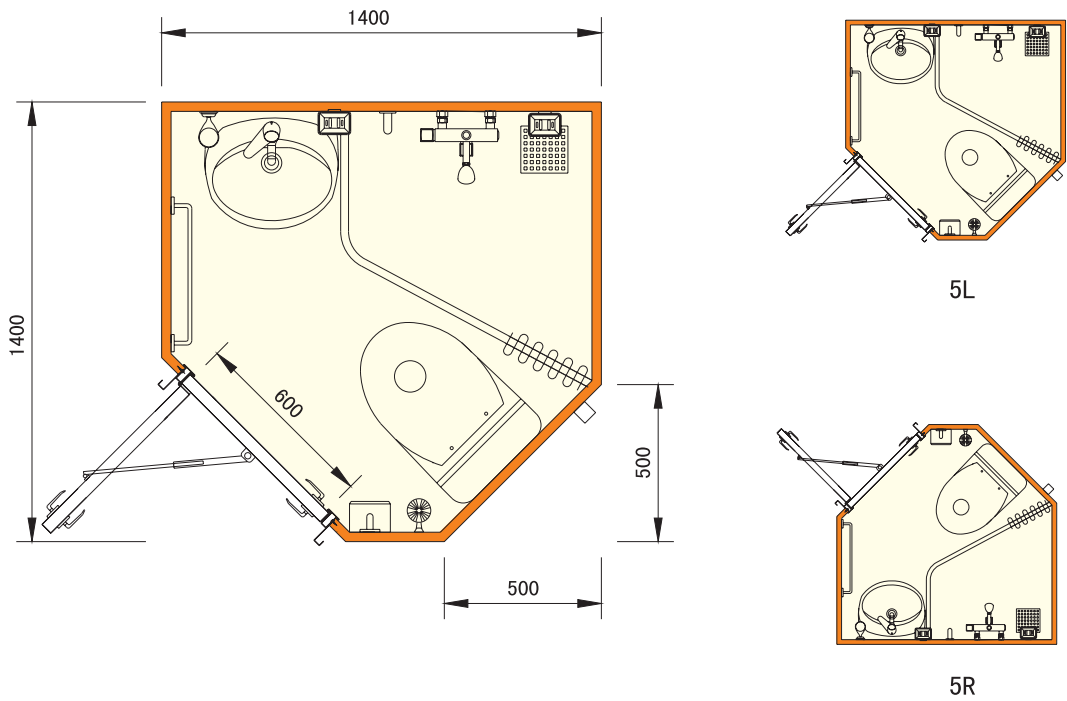
(4-2) L



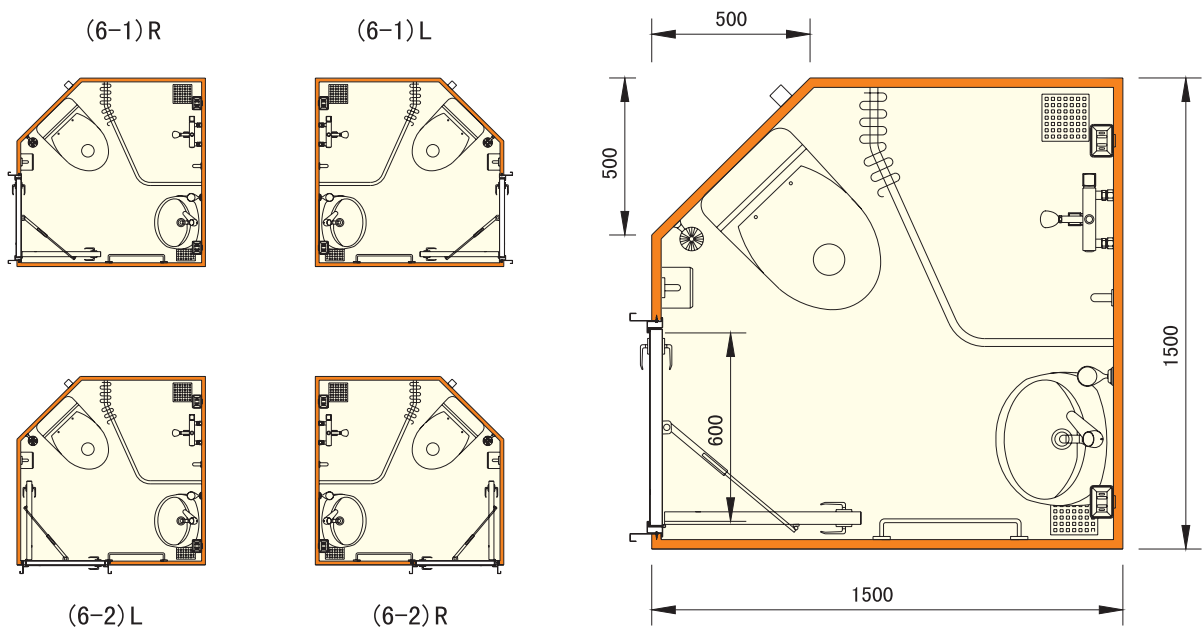
(4-2) R



WHL-PSU5

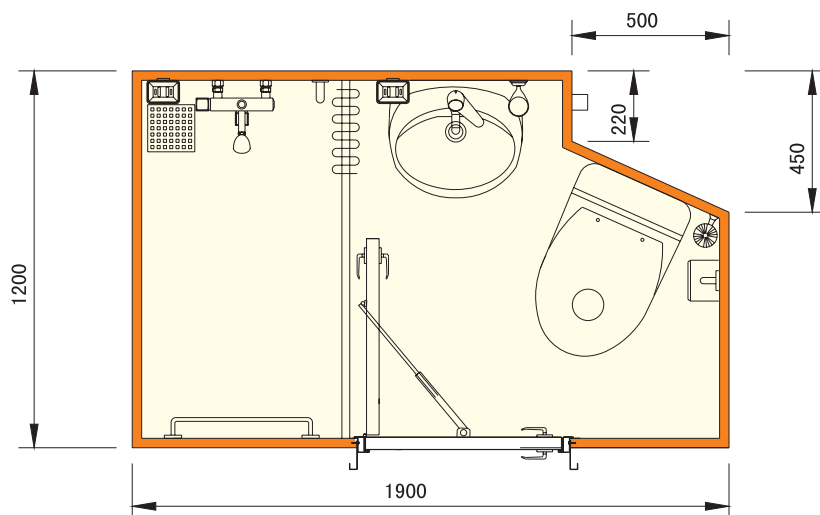


WHL-PSU6

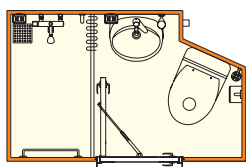




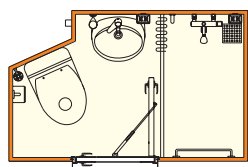
## WHL-PSU7



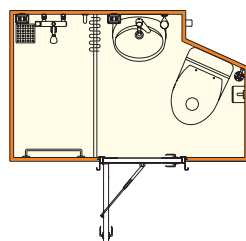
(7-1) L



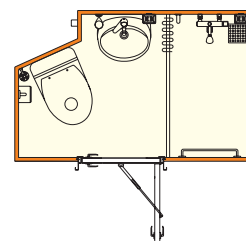
(7-2) R



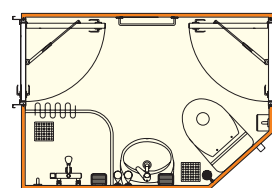
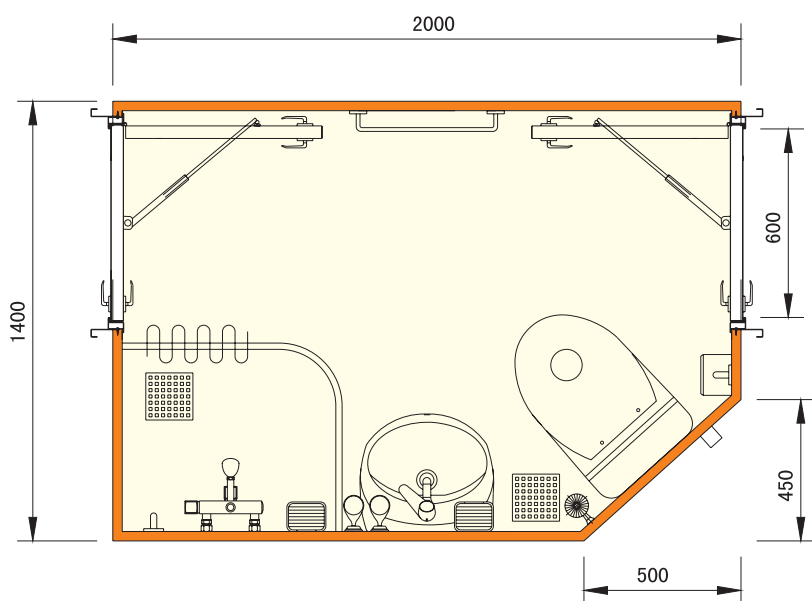
(7-3) L



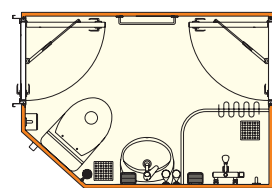
(7-4) R



## WHL-PSU8

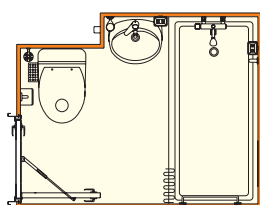
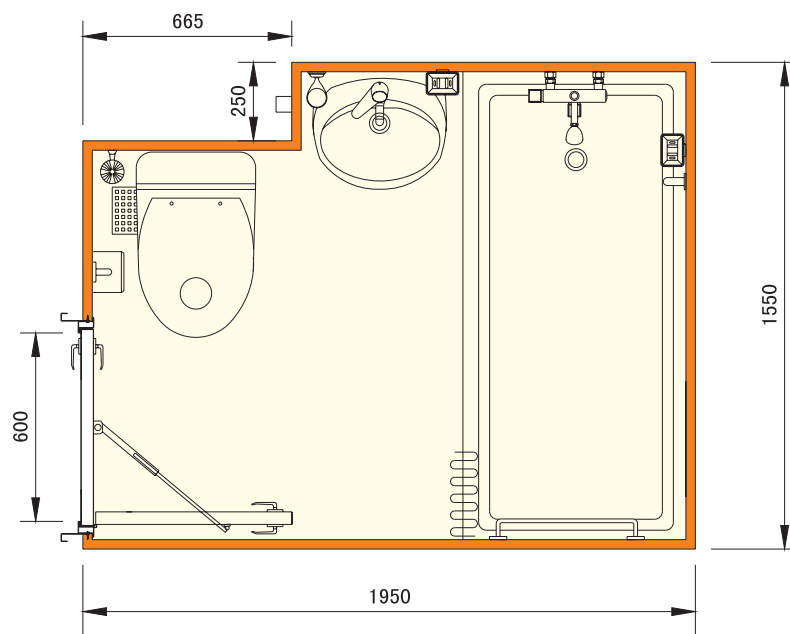


(8-1)

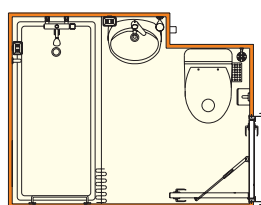


(8-2)

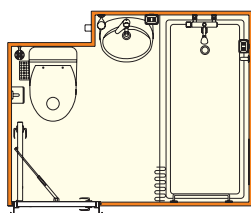
WHL-PSU9



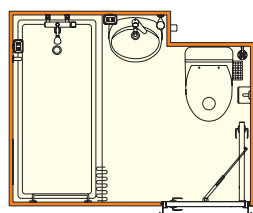
(9-1) R



(9-2) L



(9-3) L



(9-4) R



## 6.2. Basic Equipment and accessories for Private Sanitation Unit



Wash – basin (whit china)



Toilet bowl (with china)



Shower set (plastic)



Shower mixer (chrome)



Mixing tap (chrome)



Soap holder (chrome)



Glass holder (chrome + glass)



Tower bar (chrome L = 420)



Paper holder (stainless steel)



Toilet brush holder  
(chrome + plastic)



Water box (plastic)



Toilet cabinet (plastic)

6.3. Clear Opening of door for Private Sanitation Unit

