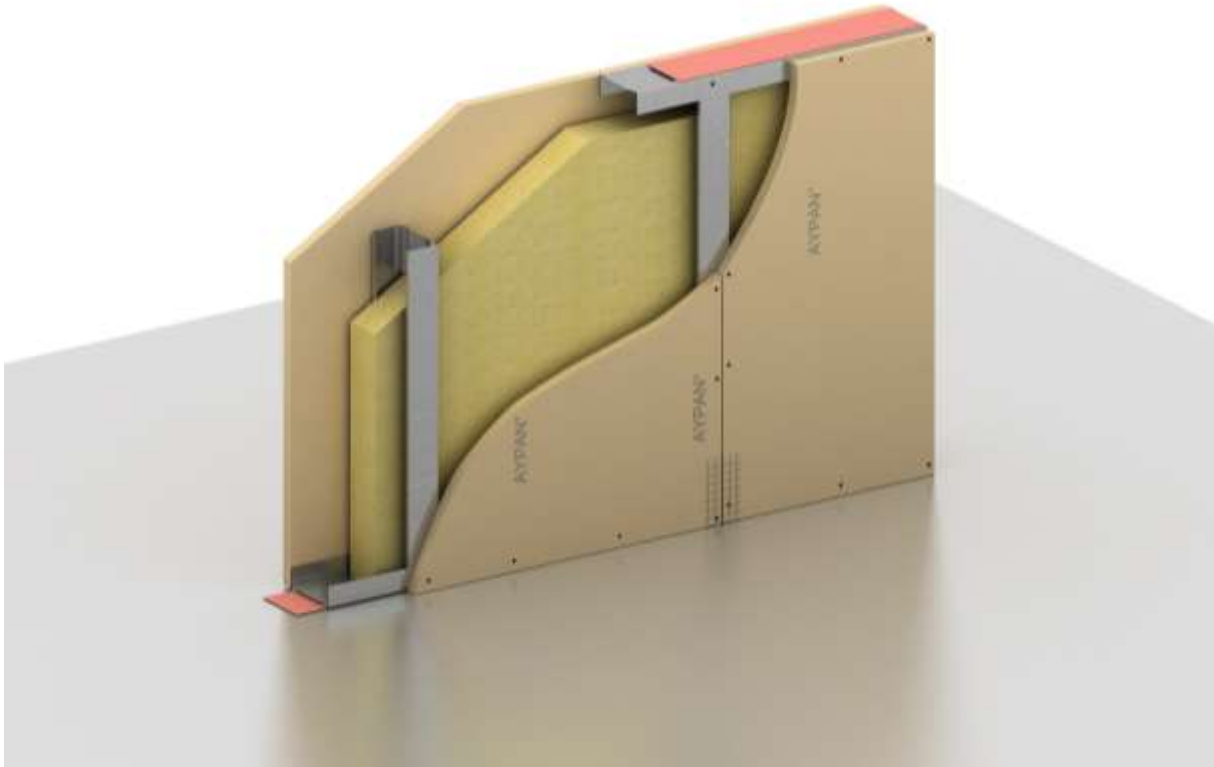


# AYSIST® PARTITION WALL SYSTEMS

## 1 TP 11

(Aypan®+ DC\*+ Heat/Sound Insulation + Aypan®)

\*Wall C Stud



1 TP 11 AYSIST® Partition Wall System is built by screwing single layer of Aypan plasterboard to both sides of a metal single framework(DC) as indicated conditions in its technical specifications. The system contains insulation panels (rock wool divisionboard) inside selected in accordance with the length of the wall and the required insulation properties.

### PLACES OF USE

Following types of buildings with limited sound insulation and fire resistance requirements:

- Houses
- Offices and administration buildings
- Business and shopping centers
- Hotels
- Hospitals.


## 1 TP 11 FEATURES

- System is recommended up to a maximum height of 5.45 m.
- Average weight of the system is between 23 and 26 kg/m<sup>2</sup>.
- The sound insulation performance of the system is between 40-47 dB.
- The fire resistance value of this system with the usage of Aypan® Red is F 30 based on DIN 4102 standards.
- In order to increase the fire resistance and sound insulation performance of the system, a proper rock wool should be selected and proper gap distances should be calculated.
- Aypan noise reduction tape should be applied on the connection points of the floor and ceiling to the existing walls, under the DU-DC (Wall U-Wall C) profiles in order to prevent the passage of vibration and sound through partition wall.
- The structural cavity between profiles could be used as a corridor for all kinds of installation equipments like cables and pipes.
- Carrier system profiles are joined by using rivets.
- The application is easy, fast and economic.

Selecting your plasterboards,

- When the specific requirements do not call for extra strength, Aypan® White
- For applications that require moisture resistance, Aypan® Green
- For applications that require fire resistance, Aypan® Red
- For applications that require impact resistance, Aypan® D White
- If both fire and moisture resistance performance matters, Aypan® More
- For applications requiring fire, moisture, impact resistance with high strength at the areas having busy human traffic with maximum 120 cm height from the floor, Aypan® D More
- For applications requiring higher strength than Aypan® D More at the areas having busy human traffic, Aypan® D Plus having increased core cohesion and strengthened features
- For applications requiring fire, moisture, mold resistance, Aypan® M More
- If both mold and moisture resistance performance matters, Aypan® M Green
- For aesthetic purposes that require acoustic performance, Aysist® Perforated Acoustic
- For applications requiring very high impact, fire, moisture and mold resistance along with A1 fire resistance, Outwear with proper system application should be selected.

	Fire Resistance	Moisture Resistance	Impact Resistance	Sound Resistance	Mold Resistance	Reaction to Fire Class
Aypan® White	-	-	-	-	-	-
Aypan® Green	-	√	-	-	-	-
Aypan® Red	√	-	-	-	-	A2 - s1, d0
Aypan® D White	-	-	√	-	-	-
Aypan® More	√	√	-	-	-	A2 - s1, d0
Aypan® D More	√	√	√	-	-	A2 - s1, d0
Aypan® D Plus	√	√	√	-	-	A2 - s1, d0
Aypan® M More	√	√	-	-	√	A2 - s1, d0
Aypan® M Green	-	√	-	-	√	-
Aysist® Perforated Acoustic	-	-	-	√	-	-
Outwear	√	√	√	-	-	A1

SYSTEM CROSS-SECTION	PROFILE	WALL THICKNESS (mm)
	DC 50 (42x49x42)	75
	DC 75 (42x74x42)	100
	DC 100 (42x99x42)	125

\*based on 12.5 mm Aypan

**WHEN 12.5 mm AYPAN IS USED ON FRONT AND BACK FACES  
PERFORMANCE VALUES AS PER SYSTEM CROSS-SECTIONS\***

Profile	Wall Thickness (cm)	Profile Thickness (mm)	Ax. gap (cm)	Max. height (m)		Avgr. Weight (kg/m <sup>2</sup> )	Fire Resistance Class	Sound Insulation Values R <sub>w</sub> (dB)	SPEC NO
				*A	*B				
DC 50 DU 50	7,5	0,5	40	3,15	2,90	24,51	F 30	40	-
			60	2,90	2,65	23,78			
		0,6	40	3,25	3,00	24,98			
			60	3,00	2,75	24,11			
DC 75 DU 75	10	0,5	40	4,70	4,00	24,93	F 30	41	-
			60	4,40	3,65	24,08			-
		0,6	40	4,75	4,10	25,56			18.138/A2
			60	4,50	3,75	24,52			18.138/A1
DC 100 DU 100	12,5	0,6	40	5,45	4,70	26,04	F 30	47	-
			60	5,00	4,25	24,87			

**PERFORMANCE VALUES IN ACCORDANCE WITH INSULATION MATERIALS\***

Profile	Wall Thickness (cm)	Insulation Material Thickness (mm)	Fire Resistance Class	Sound Insulation Values R <sub>w</sub> (dB)	Heat Conductivity Coefficient (W/m <sup>2</sup> K)
DC 50 DU 50	7,5	40	F 30	40 dB	0.665
DC 75 DU 75	10	50	F 30	40 dB	0.559
DC 75 DU 75	10	60	F 30	41 dB	0.482
DC 100 DU 100	12,5	80	F 30	47 dB	0.378

\*

- \*A - As per DIN 4103/DIN 18183, this height is used for places where pedestrian traffic is low e.g. commercial buildings (hotels, hospitals) and residences.
- \*B - As per DIN 4103/DIN 18183, this height is used for places where there is high pedestrian traffic, eg. Showrooms, theaters, cinemas, schools etc.
- SPEC NOs are in compliance with T.R. Ministry of Environment and Urbanization spec numbers defined for Aypan White.
- Fire Resistance Class is in compliance with DIN 4102. For fire resistance and sound insulation calculations, rock wool divisionboard that has 5 cm thickness and 52 kg/m<sup>3</sup> density is used. Values should be recalculated, if the parameters would change. Values given for Fire Resistance Class at the table are valid only when Aypan Red, Aypan More, Aypan D Plus or Outwear is used on both sides of the partition wall.
- Sound Insulation values are in compliance with DIN 4109.
- Average weight calculations assume 12,5 mm Aypan White + Aypan Profile + 5 cm 52 kg/m<sup>3</sup> rock wool divisionboard. Other Aypan products would add 0.5-1 kg.

**ANALYSIS OF MATERIALS for 1M<sup>2</sup> of 1 TP 11 PARTITION WALL SYSTEM\*\***

	axial gap (cm)		UNIT
	60	40	
<b>AYPAN Plasterboard (12,5 mm)</b>	2,10	2,10	m <sup>2</sup>
<b>AYPAN DC 75 Profile (42X49X42 mm)</b>	2,30	3,60	mt
<b>AYPAN DU 75 Profile (27X50X27 mm)</b>	0,90	0,90	mt
<b>AYPAN Noise Reduction Tape</b>	1,00	1,00	mt
<b>AYPAN Plastic Dowel and Pan Headed Screw Set</b>	2,60	2,60	pieces
<b>AYPAN Drywall Screw 3,5 x 25 mm</b>	25,00	32,00	pieces
<b>AYPAN Joint Tape</b>	3,20	3,20	mt
<b>AYGIPS Joint Filling Plaster</b>	0,80	0,80	kg/m <sup>2</sup>
<b>AYGIPS Satin Finishing Plaster</b>	each 10 mm; 0,3		kg/m <sup>2</sup>
<b>Rock Wool Divisionboard</b>	1,05	1,05	m <sup>2</sup>
<b>AYPAN Perforated Corner Bead</b>	As per project		mt

## 1 TP 11 TECHNICAL SPECIFICATIONS

Based on T.R. Ministry of Environment and Urbanization regulations and rules, steps should be as follows for the project and details approved by administration;  
(Aypan Wall U Track shall be referred to as DU 75 whereas Aypan Wall C Stud as DC 75.)

- DU 75 tracks should be fixed onto the floor and ceiling by using Aypan screws and plastic dowels with 60 cm intervals.
- 75 mm AYPAN Noise reduction tape should be affixed to rear parts of the DU 75 and DC 75 Profiles that will be fixed to side walls.
- DC 75 studs should be cut off.
- DC 75 studs should be installed with 60 cm intervals between DU 75 tracks.
- Rock wool panels of proper thickness and densities should be mounted onto the backs of the DC studs.
- 12,5 mm Aypan plasterboard should be fixed to DU 75 and DC 75 profiles by using 25 mm Aypan drywall screws.
- Aypan plasterboards should be cut off and sized where needed.
- For the cavities larger than 3mm, a preliminary filling should be applied by using Aygips joint filling plaster.
- Screw heads should be covered by using Aygips joint filling plaster.
- Joints of Aypan plasterboards should be affixed with Joint Tape.
- Partition wall system should be completed by applying Aygips joint filling plaster on Joint Tape.

Including all kinds of material and losses, labour, loading at the construction site, horizontal and vertical transport, unloading, contractor mark up and overhead expenses, total costs for 1 m<sup>2</sup>:

Measurements: Calculated in m<sup>2</sup> based on sizes depicted in the project.

P.S. Cavities smaller than 0,50 m<sup>2</sup> are not excluded from quantities.

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- DU (Wall U) Profile amount is calculated by dividing the total wall surface to the height and multiplying by 2.
- Material analysis of Aypan plastic dowel and screw set is valid for 60 cm axial gap.
- Material analysis of Aypan drywall screw is valid for vertical 30 cm axial gap.
- Material analysis table assumes 2.5 m height for the system.
- Gaps on the wall (windows, doors) as per the project are not included in the calculation.
- AYPAN self drilling screw must be preferred with the use of metal profile thicker than 0,88 mm instead of AYPAN drywall screw.
- In the case, when 15 mm AYPAN Plasterboard is used, 3,5x25 mm AYPAN drywall screw must be used.
- In the case, when 18 mm AYPAN Plasterboard is used, 3,5x35 mm AYPAN drywall screw must be used.

### WHEN 15 mm AYPAN USED ON FRONT AND BACK FACES

#### PERFORMANCE VALUES AS PER SYSTEM CROSS-SECTIONS \*\*\*

Profile	Wall Thickness (cm)	Profile Thickness (mm)	Ax. gap (cm)	Max. height (m)		Avgr. Weight (kg/m <sup>2</sup> )	Fire Resistance Class	Sound Insulation Values R <sub>w</sub> (dB)	SPEC NO
				*A	*B				
DC 50 DU 50	8	0,5	40	3,25	3,00	28,71	F 30	42	-
			60	3,00	2,75	27,98			
		0,6	40	3,35	3,10	29,18			
			60	3,10	2,85	28,31			
DC 75 DU 75	10,5	0,5	40	4,85	4,10	29,13	F 30	43	-
			60	4,50	3,75	28,28			
		0,6	40	4,95	4,20	29,76			
			60	4,60	3,85	28,72			
DC 100 DU 100	13	0,6	40	5,55	4,80	30,24	F 30	48	-
			60	5,10	4,35	29,07			

**SCREW LENGTH\*\*\***

AYPAN (mm) (Front/Back)	to fix to the Floor	over metal profile	
		Drywall Screw (mm)	Self Drilling Screw (mm)
12.5 / 12.5	AYPAN Plastic Pan Headed Screw(22x45 mm) + M8 plastic dowel	3.5 x 25	3.5 x 25
15 / 15		3.5 x 25	3.5 x 25
18 / 18		3.5 x 35	3.5 x 35

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AYPAN Drywall Screw; has 3,5 mm diameter, 25,35 or 45 mm length, which is used in fixing Aypan plasterboards to profiles that have max.galvanized sheet thickness as 0.88 mm or metal construction.

AYPAN Self Drilling Screw; has 3,5 mm diameter, 25,35 or 45 mm length, which is used in fixing Aypan plasterboards to profiles that have max.galvanized sheet thickness as 2,2 mm or metal construction.

Screws must be applied perpendicularly without any damage to paper surface.

**RELATED SPECIFICATIONS IN THE TECHNICAL SPECIFICATIONS\*\*\*\***

Spec No	Description
<b>18.138/A 1</b>	Building partition wall system by using plasterboards (TS EN 520+A1) with single framework and rock wool divisionboard (Single profile-60 cm axial gap-12.5 mm single layer plasterboard)
<b>18.138/A 2</b>	Building partition wall system by using plasterboards (TS EN 520+A1) with single framework and rock wool divisionboard (Single profile-40 cm axial gap-12.5 mm single layer plasterboard)
<b>18.138/B 1</b>	Building partition wall system by using moisture resistant plasterboards (TS EN 520+A1) with single framework and rock wool divisionboard (Single profile-60 cm axial gap-12.5 mm single layer plasterboard)
<b>18.138/B 2</b>	Building partition wall system by using moisture resistant plasterboards (TS EN 520+A1) with single framework and rock wool divisionboard (Single profile-40 cm axial gap-12.5 mm single layer plasterboard)
<b>18.138/C 1</b>	Building partition wall system by using fire resistant plasterboards (TS EN 520+A1) with single framework and rock wool divisionboard (Single profile-60 cm axial gap-12.5 mm single layer plasterboard)
<b>18.138/C 2</b>	Building partition wall system by using fire resistant plasterboards (TS EN 520+A1) with single framework and rock wool divisionboard (Single profile-40 cm axial gap-12.5 mm single layer plasterboard)
<b>18.138/D 1</b>	Building partition wall system by using both moisture and fire resistant plasterboards (TS EN 520+A1) with single framework and rock wool divisionboard (Single profile-60 cm axial gap-12.5 mm single layer plasterboard)
<b>18.138/D 2</b>	Building partition wall system by using both moisture and fire resistant plasterboards (TS EN 520+A1) with single framework and rock wool divisionboard (Single profile-40 cm axial gap-12.5 mm single layer plasterboard)

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T.R. Ministry of Environment and Urbanization

## **Related Standards and References:**

- TS EN 520– Gypsum Plasterboards-Definitions, Requirements and Testing Methods
- TS EN 14195- Metal framing components for gypsum board systems- Definitions, Requirements and Testing Methods
- TS EN 15283-1 Gypsum boards with fibrous reinforcement- Definitions, Requirements and Testing Methods- Part 1: Gypsum boards with mat reinforcement
- TS EN 13963 Jointing Materials for gypsum board- Definitions, Requirements and Testing Methods
- Aygips Aypan Plasterboard Application Manual
- Aygips Aypan Product Catalogue
- DIN-EN norms:
  - DIN 4103
  - DIN 18181
  - DIN 18182
  - DIN 4102
  - DIN 18180
  - DIN 14353
  - DIN 18183-1
  - DIN 4109
  - EN 14566.