

cOntainment bOOth

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Significant reduction in energy consumption, as demonstrated by a third-party testing company.

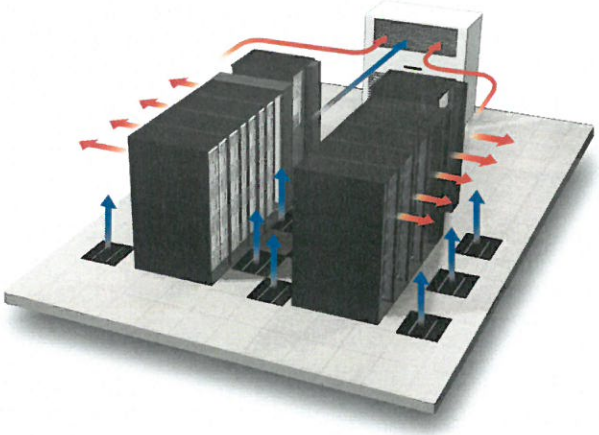
Lengthen the life-span of the air-conditioner from the decreased operating hours of the system.

Enclosed space keeps servers clean from dust.

Provide a healthy environment for employees working inside the data-processing room, who previously were usually over-exposed to the intense air-conditioning.

Enclosed space provides an additional security wall barrier.



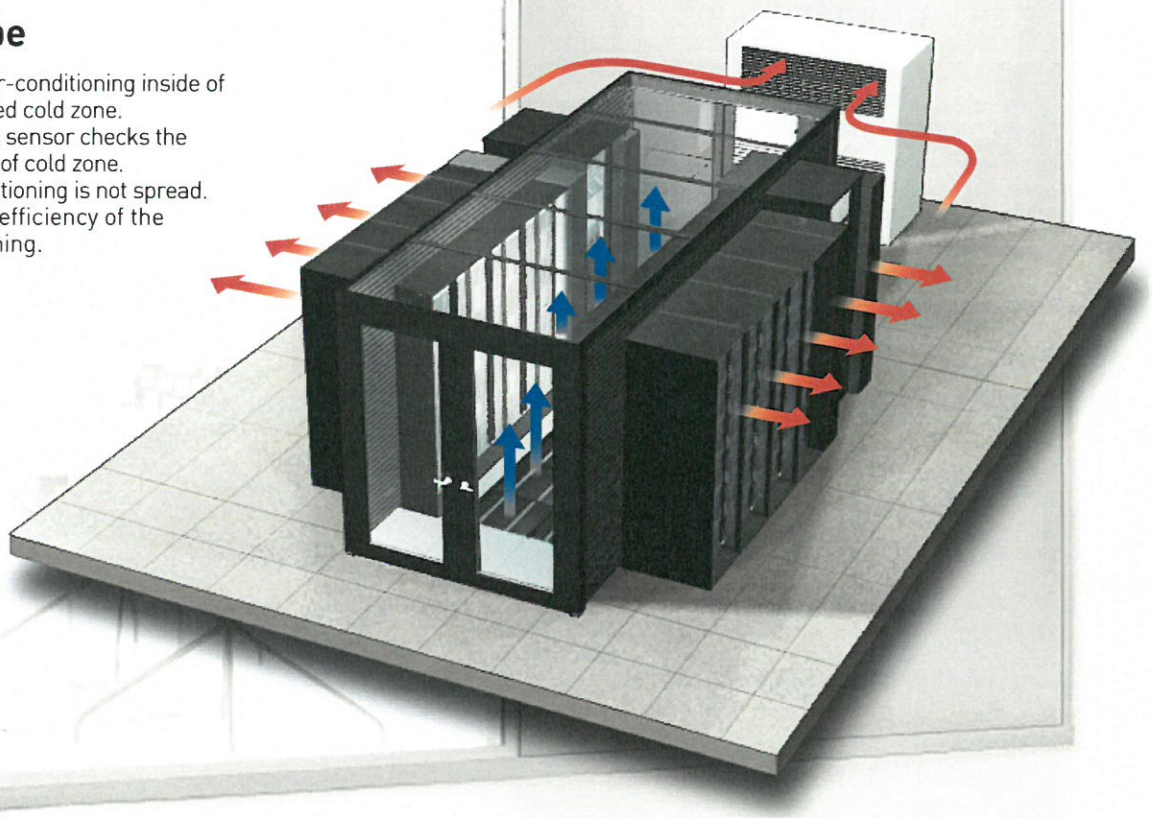


general type

Supply the air-conditioning in a whole data processing room.
(front and back of server).
Temperature sensor checks the temperature of a whole data processing room.
The air-conditioning is spread.
It decreases efficiency of the air-conditioning.

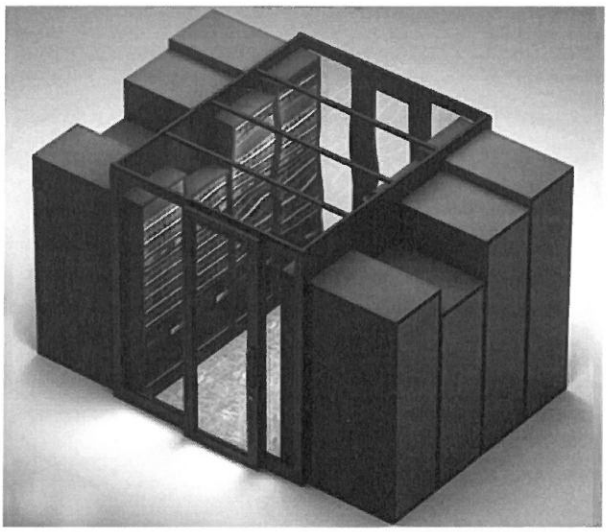
new type

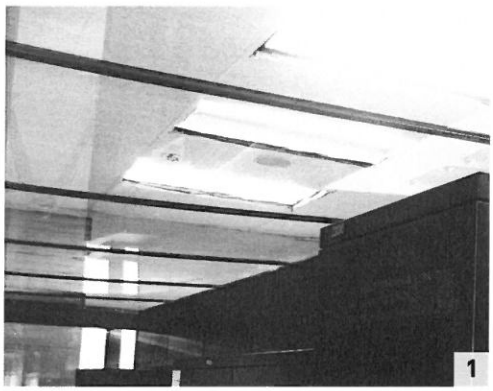
Supply the air-conditioning inside of partition called cold zone.
Temperature sensor checks the temperature of cold zone.
The air-conditioning is not spread.
It increases efficiency of the air-conditioning.



Intensive Air-conditioning system

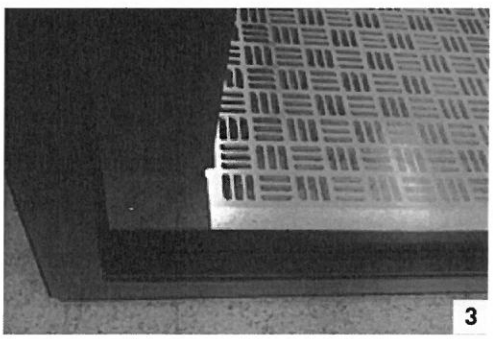
In general room cooling system, cooling efficiency was low as hot air and cold air was mixed around the rack, however, cold zone containment improves cooling efficiency and PUE by separating hot air and cold air.









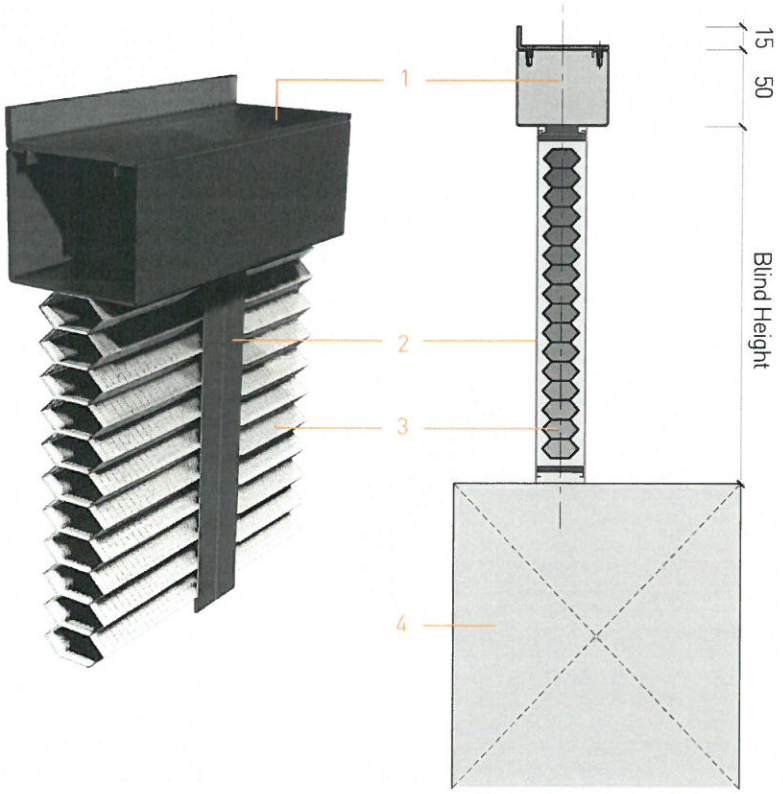


1 Ceiling

2 Freestanding Ceiling channel Detail

3 Floor channel Detail

cOntainment bOOth
silkline H (P61A) - details



1 Top Channel

2 Blind bar

3 Blind

4 Computing Equipment

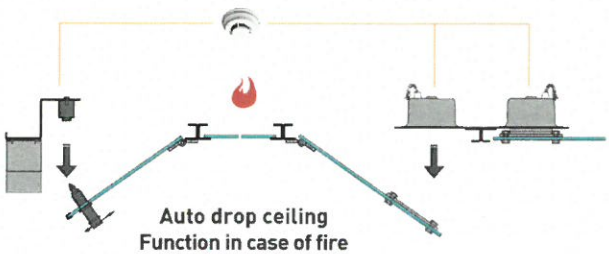
blind bar

There are three blind bars. The length of the bars depend on the height of the equipment .

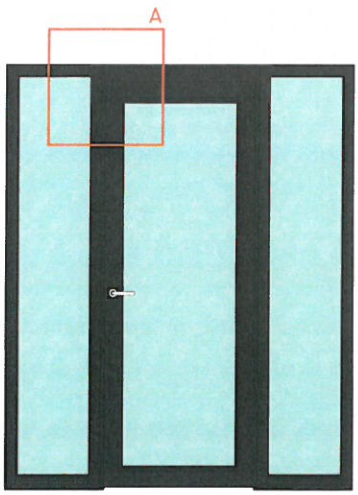




Usual Ceiling



Auto drop ceiling
Function in case of fire



Horizontal Section



Swing door type

- After putting the panel on the installed base, this is held by the installed ABL and junction key.

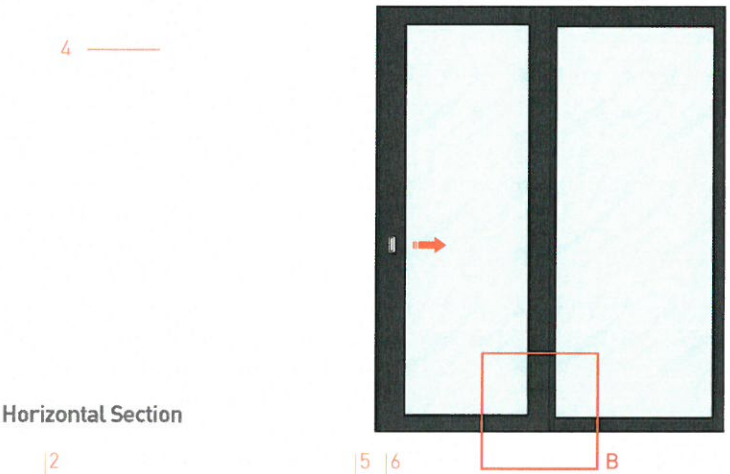
- ABL, all of panel and door frame need to join by junction key.

- Opening of Panels and Door leaves is finished by polycarbonate.

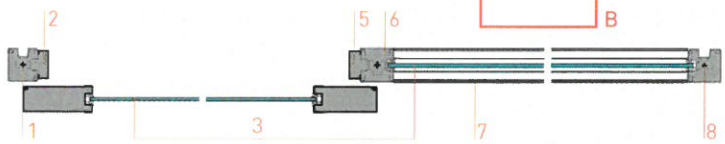
1,5 Junction key
2 ABL(Post)
3 Panel
4 Polycarbonate
6 Door leaf
7 Door frame
8 2way post



detail A



Horizontal Section

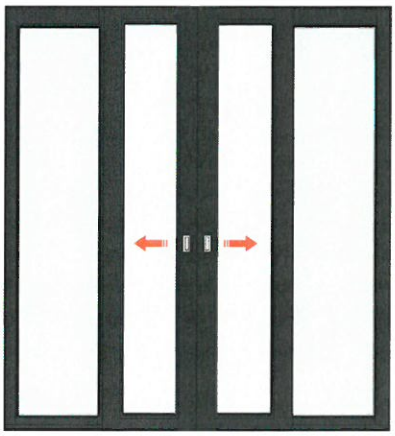


Sliding door Type

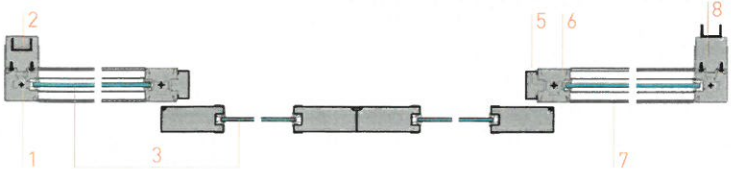
- After putting the panel on the installed base, this is held the installed ABL and junction key.

- ABL, all of panel and door frame need to join by junction key.

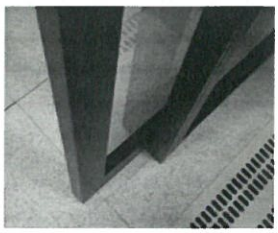
- Opening of Panels and Door leaves is finished by polycarbonate.



Horizontal Section



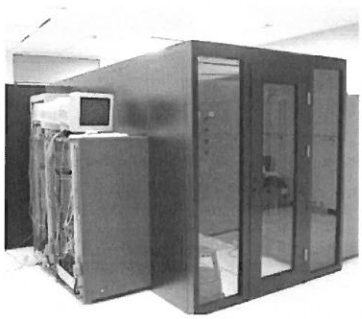
1,6 Junction key
2 ABL(Post)
3 Glass
4 Polycarbonate
5 Door frame
7 Panel
8 2way post

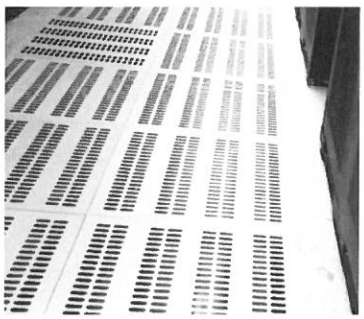


detail B

the format
of the Intensive Air-conditioning Partition Systems







1. Arrange the servers and install the air-conditioning grills

- Arrange the servers face to face. (front ↔ front, back ↔ back)
  - Most of the servers inhale the air-conditioning through the front and expel heat through the back.
- The air – conditioning grills have to be placed in front of servers.
  - Placing the grills in front of servers, intensively supplies the air-conditioning where it is needed.
  - It increases efficiency of the air-conditioning.

2. Install the partitions

- Install the partitions only in front of the servers to block the air-conditioning.
  - By installing partitions, a data processing room is divided into two zones: 'cold zone' & 'hot zone'. Intensively supply the air-conditioning where servers inhale it.
- Partition structure
  - Sliding door partition structure is better to spend less for entrance.
  - The height of partitions can be flexible, depending on the height of servers.
  - The top has to be able to be opened incase of when fire breaks out.

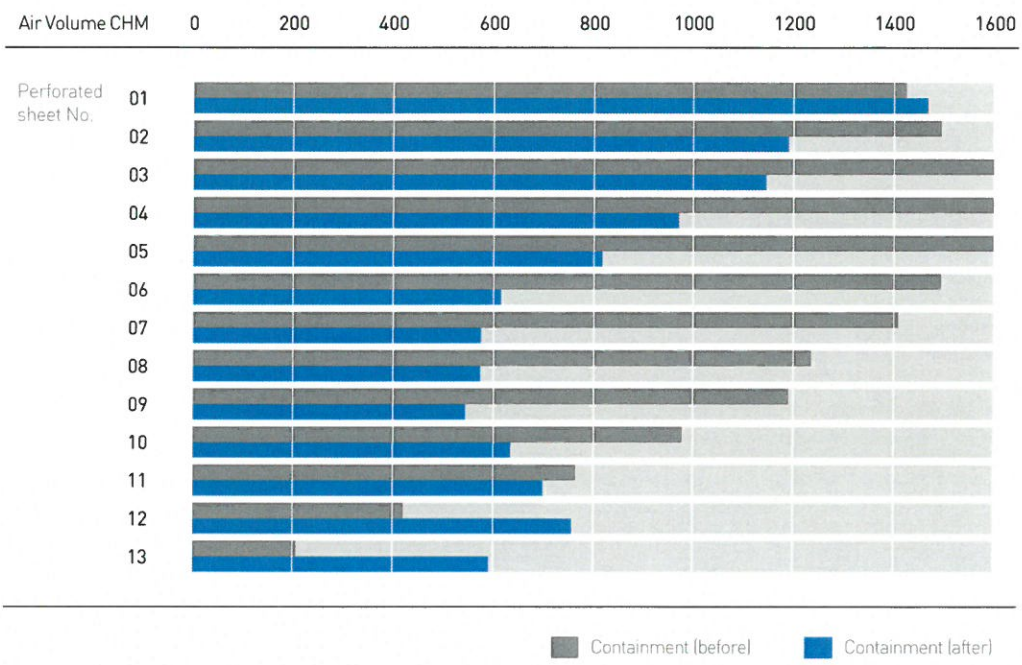
3. Remove the temperature sensor

- Remove the temperature sensor inside of the partition. (inside of cold zone)
  - Location : in between 0.1~1.2m apart the floor.
  - Temperature sensor checks a temperature of cold zone.

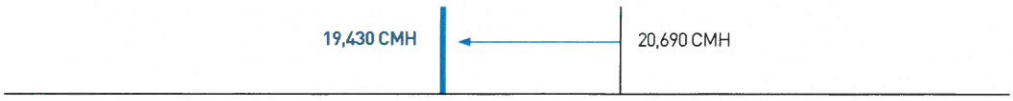
In a study by the Uptime Institute*, 59% of the cold air was bypassing the server inlet.

Air volume rate

* The different of air volume is influenced by opening rate & deployment rate between the perforated sheets.

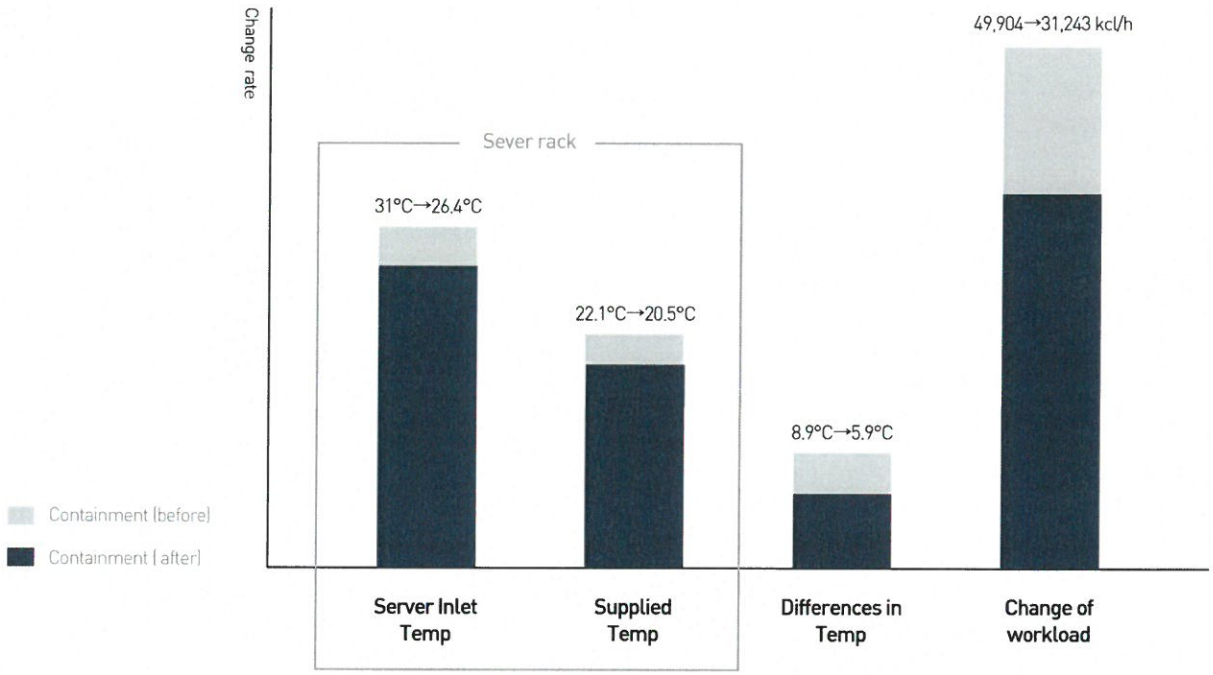


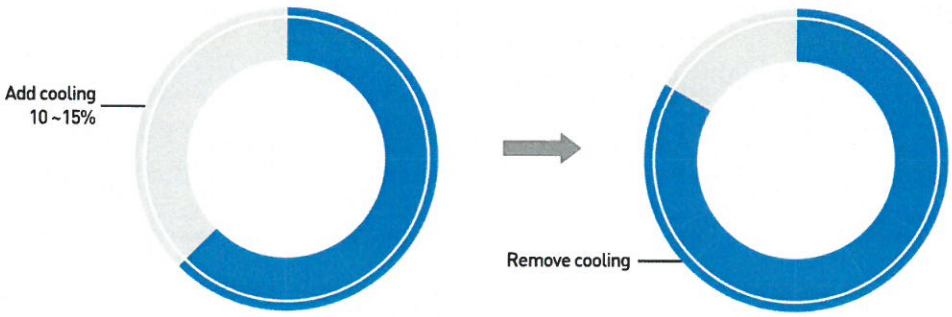
Air volume of floor diffuser



Low air volume in all of perforated sheets was measured after installation containment cause the static pressure.
→ 6% was reduced in total air volume.

Change of workload in the server





Total supply cooling
Total heating load

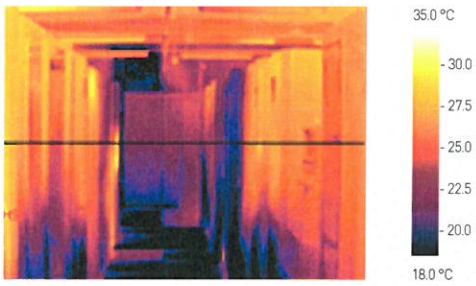
Unit :Kw/RT

Test results (case study)

Before Installation

COMPANY	CLESTRA HAUSERMAN	CLIENT	
TESTER			
DIVIDE	test 880-3	SERIAL NO.	1680501

WORK



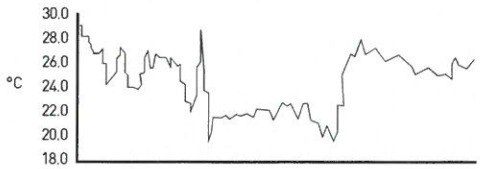
DATA

DATE :	2010-12-09	EMISSIVITY	: 1.00
TIME :	AM 10:47:55	REFLECTED TEMPERATURE [°C]	: 26.0
FILE :	IRL00158. BMT		

EXPRESSON

OBJECT	TEMPERATURE [°C]	EMISSIVITY	REFLECTED TEMPERATURE[°C]	REMARK
GOLD SPOT 1	6.8	1.00	26.0	-
HOT SPOT 1	30.6	1.00	26.0	-

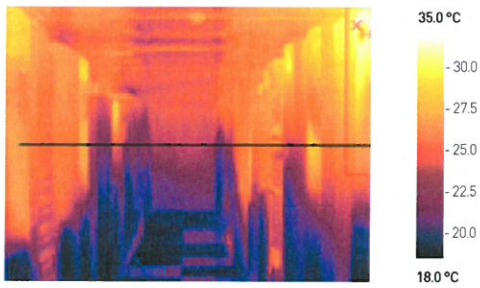
PROFILE LINE :
MIN. 22.5°C MAX. : 30.0°C AVERAGE : 24.0°C



After Installation

COMPANY	CLESTRA HAUSERMAN	CLIENT	
TESTER			
DIVIDE	test 880-3	SERIAL NO.	1680501

WORK



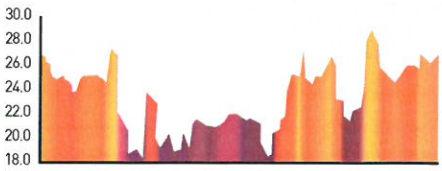
DATA

DATE :	2010-12-09	EMISSIVITY	: 0.95
TIME :	AM 10:55:52	REFLECTED TEMPERATURE [°C]	: 26.0
FILE :	IRL00160. BMT		

EXPRESSON

OBJECT	TEMPERATURE [°C]	EMISSIVITY	REFLECTED TEMPERATURE[°C]	REMARK
GOLD SPOT 1	16.0	0.95	26.0	-
HOT SPOT 1	35.3	0.95	26.0	-

PROFILE LINE :
MIN. 22.5°C MAX. : 30.0°C AVERAGE : 24.0°C



TECHNICAL DATA SHEET

cOntainment bOOth

silkline H (P61A)

CONSTRUCTION

- MONOBLOCK ELEMENTS:
  - Outer vertical: 1.6 mm thick EZ steel.
  - Thick: 59 mm.
  - Skin: steel 0.8 mm thick with reinforcements welded to the inner surface.
  - Filling: rock wool (50 kg/m3).
  - Continuous floor 1.2mm EZ steel and continuous ceiling channels : 1 mm thick steel.
  - Standard glazed panels: single/double glazing.
- DOOR PANELS:
  - Adjustable steel frame 1.2mm thick steel.
  - Steel door leaf: steel box structure, 44.5 mm thick (steel plate : 0.8 mm(thick).
  - Acoustic seals are applied on floor and ceiling channels.
- JUNCTION:
  - Flush postcap, 57mm wide.
  - 2,3 or 4 directional junction without special parts.

FINISHING

- SURFACE TREATMENT:

Once the facing sheet and visible.
Accessories have undergone zinc phosphatic passivation, oven baked (180°C) thermohardening polyester paint (45 +/- 5 μ m) is applied. This paint provides a decorative surface that is scratch resistant and which also stands up to minor shocks and to ultraviolet light.

- COLOURS:

From our standard colour range with special colours on request.

GEOMETRICAL FEATURES

- DIMENSIONS:
  - Height: monoblock up to 3600 mm. (stacked panels for higher dimensions).
  - Width: up to 1200 mm for full panels, above for glazed panels.
- Weight: 25 kg/m2.

INSTALLATION FEATURES

- Our product is designed to absorb:
  ± 20 mm of unevenness in the floor,
  ±15 mm of unevenness on the ceiling.
- RACKING SYSTEM:

Vertical racking system is incorporated asn an option on both panel faces at the panel joints. This allows easy integration of shelves or binder bins.

TECHICAL INTEGRATION

- INTEGRATION OFELECTRICAL WORK:

The junction between the panels forms a natural vertical passages for electric wiring.
The 1350mm2 of available interstitial space means electrical boxes can also be incorporated.
Similarly, the top and bottom channels allow the horizontal routing of wiring across the partition.
The flexibility of the partitions and networks can be maximized by integrating several options.

- SEVERAL OPTIONS:
  - Technical panels with removable skin on one side to allow vertical routing of wiring through the partition.
  - Horizontal electrical raceways to take large volume of wiring.

USE

Boards, time schedules, blueprints, posters, coat hooks, etc. can be magnetically fixed to the partitions.

The baked polyester enamel paint finish of the partitions means they can be cleaned as easily as a window, by simply using a rubber squeegee and a gentle detergent.

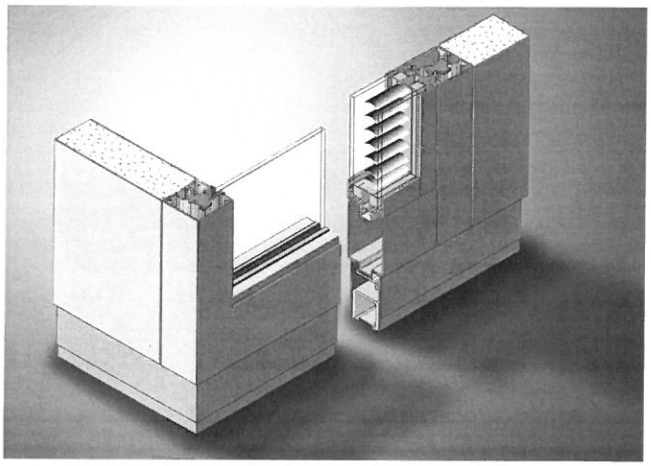
ACCOSTICS

Sound transmission class
According to ASTM E 90
STC = 40 dB (in case of full solid panel).

FIRE

Surface spread of flame : Class 0.

Fire resistance : according to the products and configurations.



CLESTRA

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