

Architectural Shadowline Air Diffusion

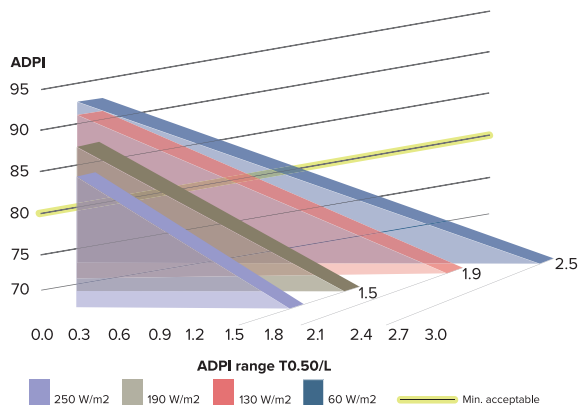


PSD Series Perimeter Slot Diffuser



In cooling mode, diffuser selection should be based on the ratio of the diffusers throw to the length of the zone/area being supplied, at all design airflow rates, to achieve an acceptable Air Diffusion Performance Index (ADPI). In heating mode, the diffuser to room temperature difference (Δt) should not exceed 15°C, to avoid excessive temperature stratification.

ASHRAE has defined a term for describing the mixing of supply and room air as Air Change Effectiveness, or ACE. This term is used in both ASHRAE Standard 129, the Method of Test for Air Change Effectiveness, and in ASHRAE Ventilation Standard 62.1-2013. When a high ADPI is measured, the ACE is always high as well. Holyoake have simplified ADPI analysis by combining a diffuser's throw performance with a $l/s/m^2$ analysis and diffuser spacing to produce an ADPI Performance Envelope graph.



- Blends seamlessly into the ceiling
- No visible flange
- Suitable for plaster ceilings and walls
- White, black and LED options
- Up to 5.8m continuous individual segments
- ADPI Greensmart performance graphs

Perimeter Slot Diffuser

SEAMLESS INTEGRATION



PSD White | Natural Anodised



PSD Black | Black Anodised



PSD LED Lighting

Perimeter Slot Diffuser

PSD

A unique new product from Holyoake is the perimeter slot diffuser (PSD). The PSD creates a stunning negative detail around the perimeter of the room while providing unobtrusive, draftless air distribution over a wide range of airflows.

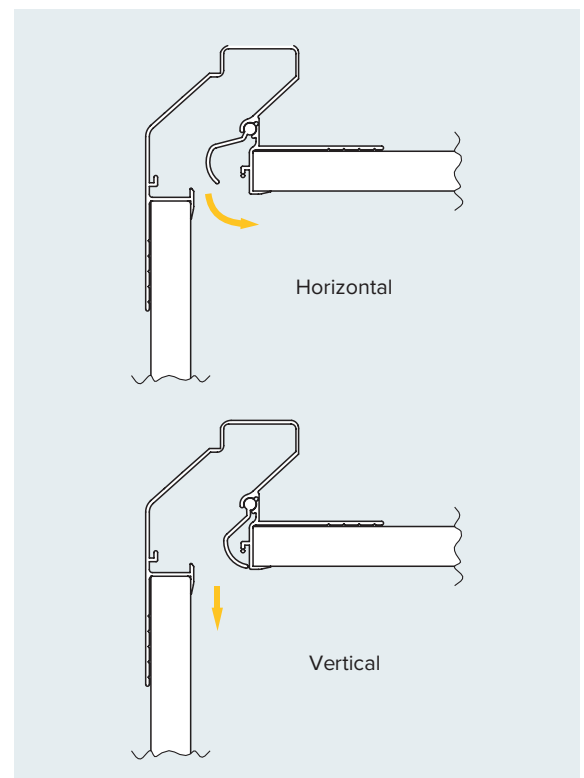
Features

- A unique new architectural product.
- Standard universal pattern control is aluminium, black or natural anodised for best visual effect and can be adjusted to give full control of air pattern.
- For use with diffuser Adapter PSDAI, plenum supply or linear duct.
- Specially designed clip-on supply adapter with foam seal requires no fixings.
- Straightforward installation with no plastering required.
- Accepts 10 or 13mm plasterboard via punch down tabs.
- Snap out tabs on rear of diffuser for active airflow section.
- Up to 5.8 metres single piece length, but can be joined to adjacent lengths to provide seamless look.
- Mitred corner available to create continuous negative detail around room perimeter.
- Optional LED ribbon light strip.

Due to policy of continuous development and improvement the right is reserved to supply products which may differ slightly from those illustrated and described in this publication.

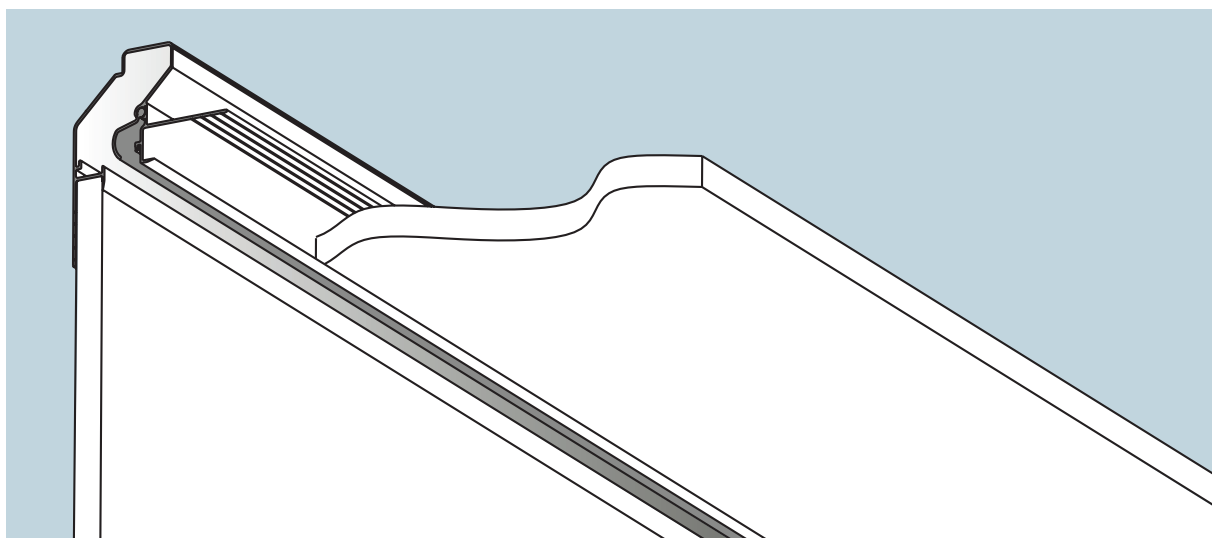


Typical PSD Throw Options



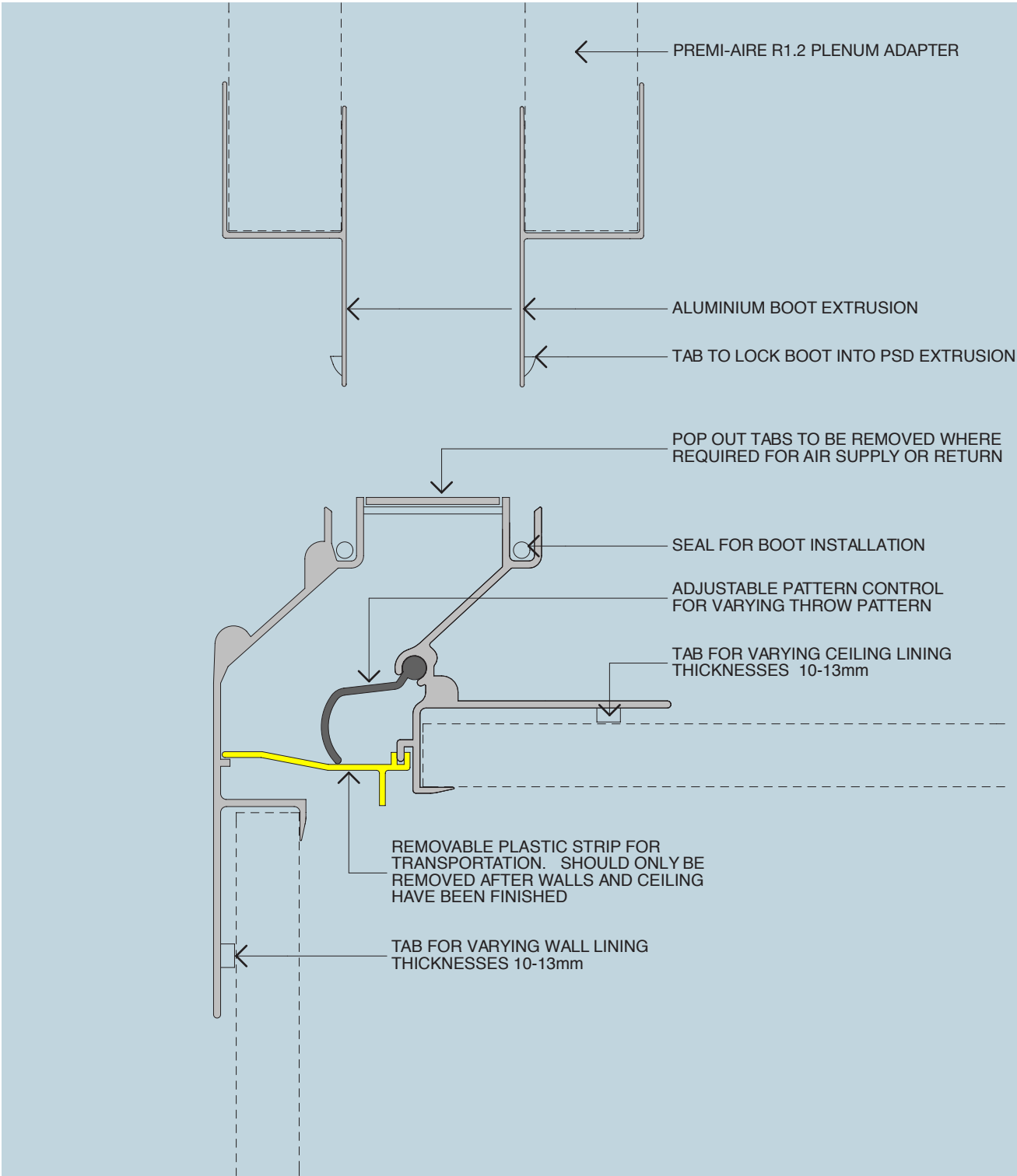


Model PSD

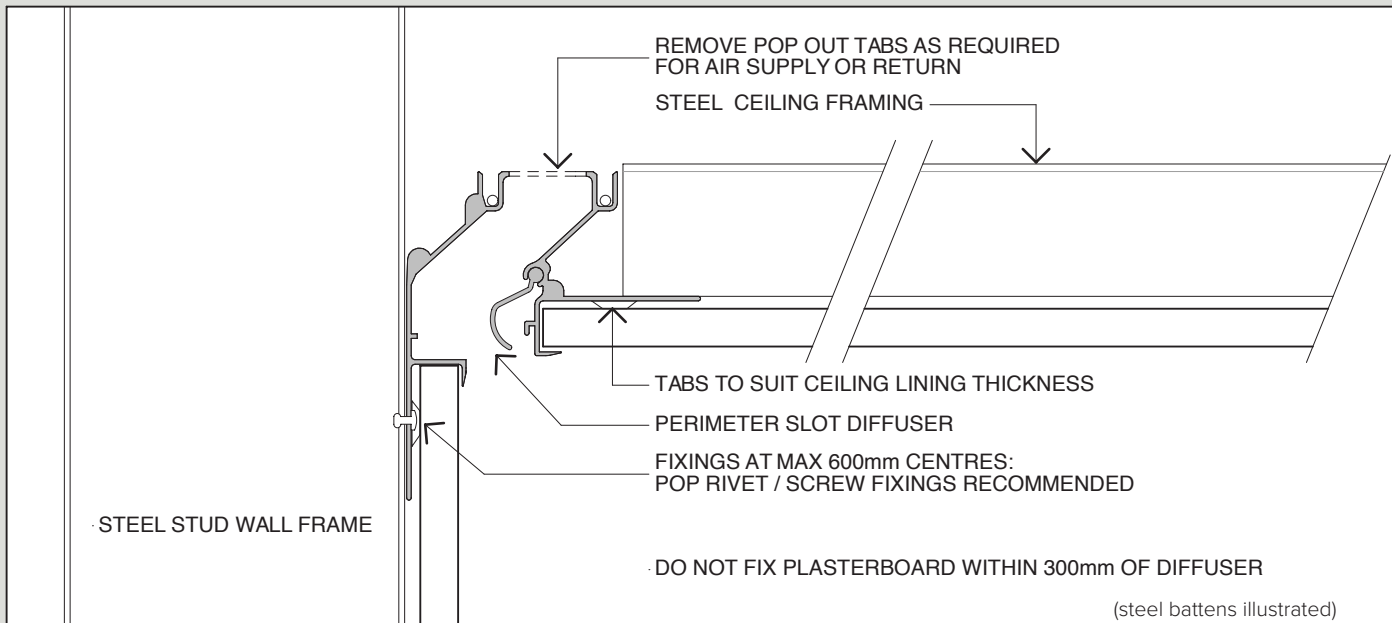


Perimeter Slot Diffuser

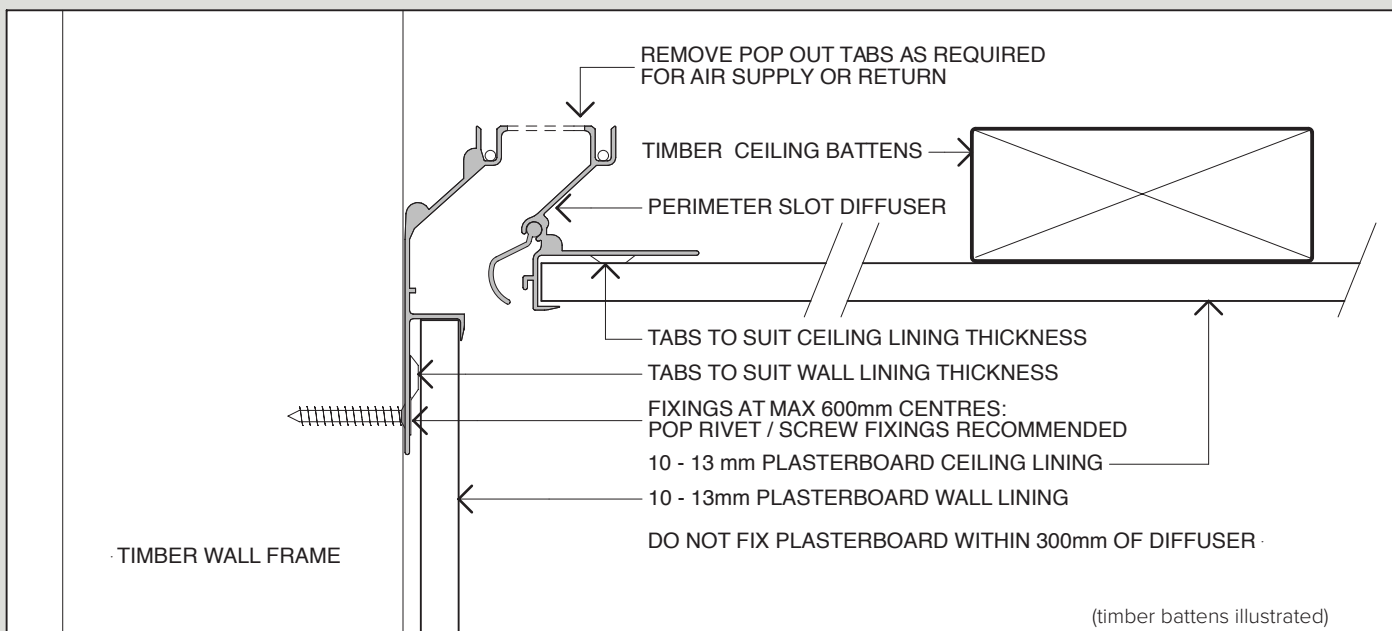
PSD



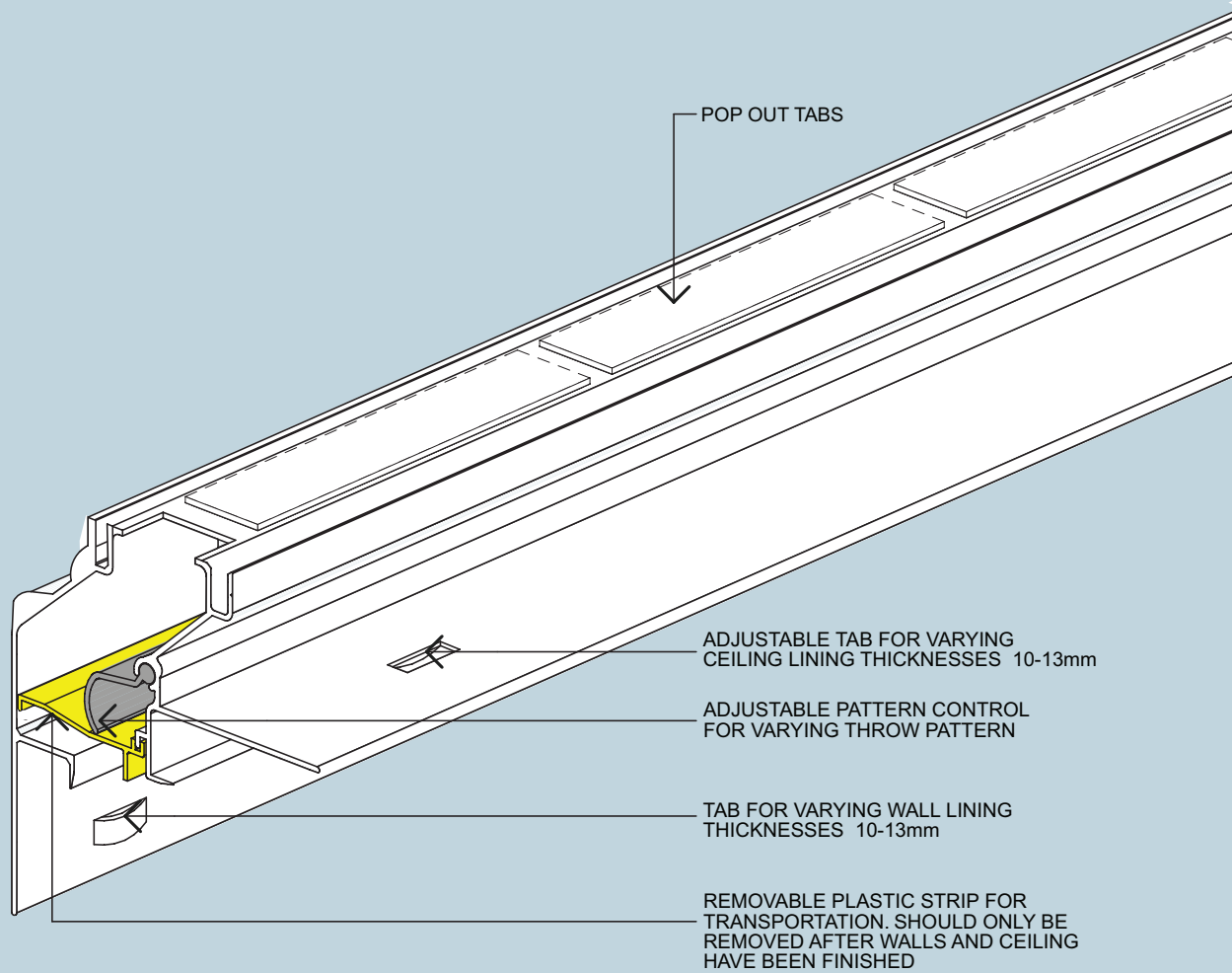
Installation - Battens perpendicular to diffuser



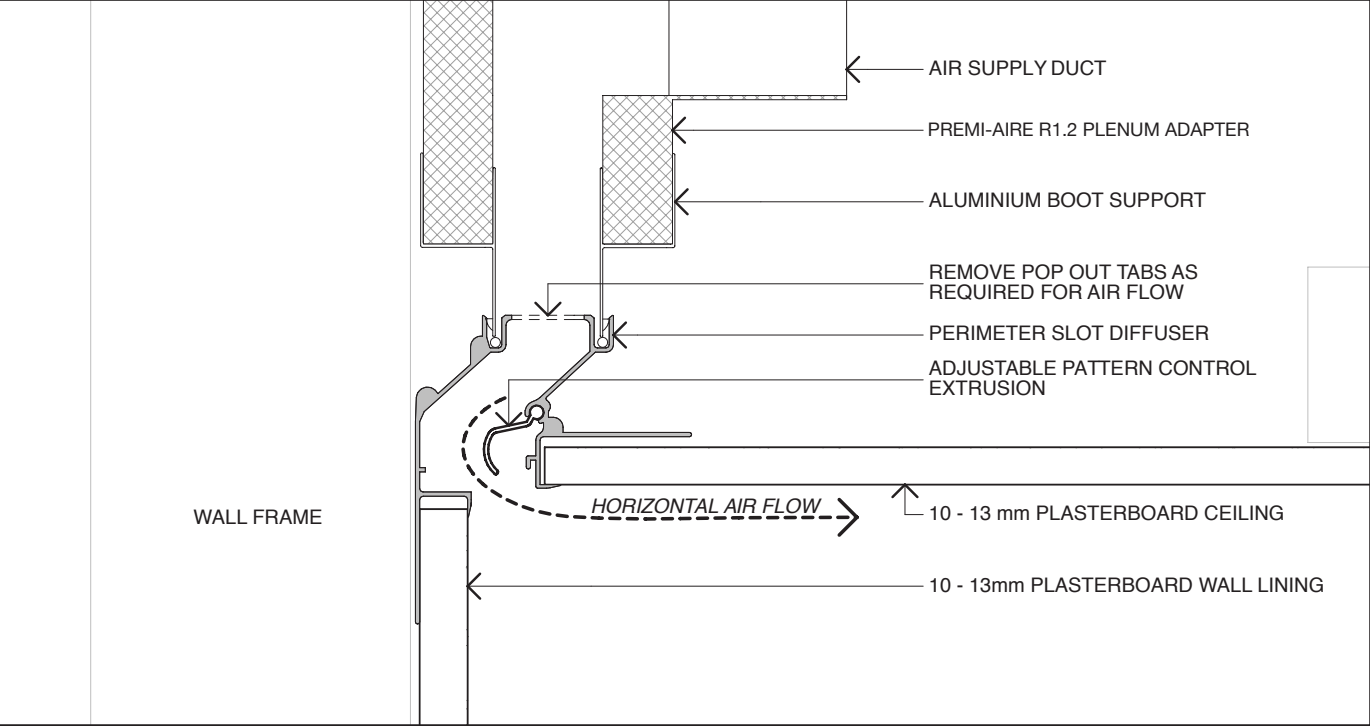
Installation - Battens parallel to diffuser



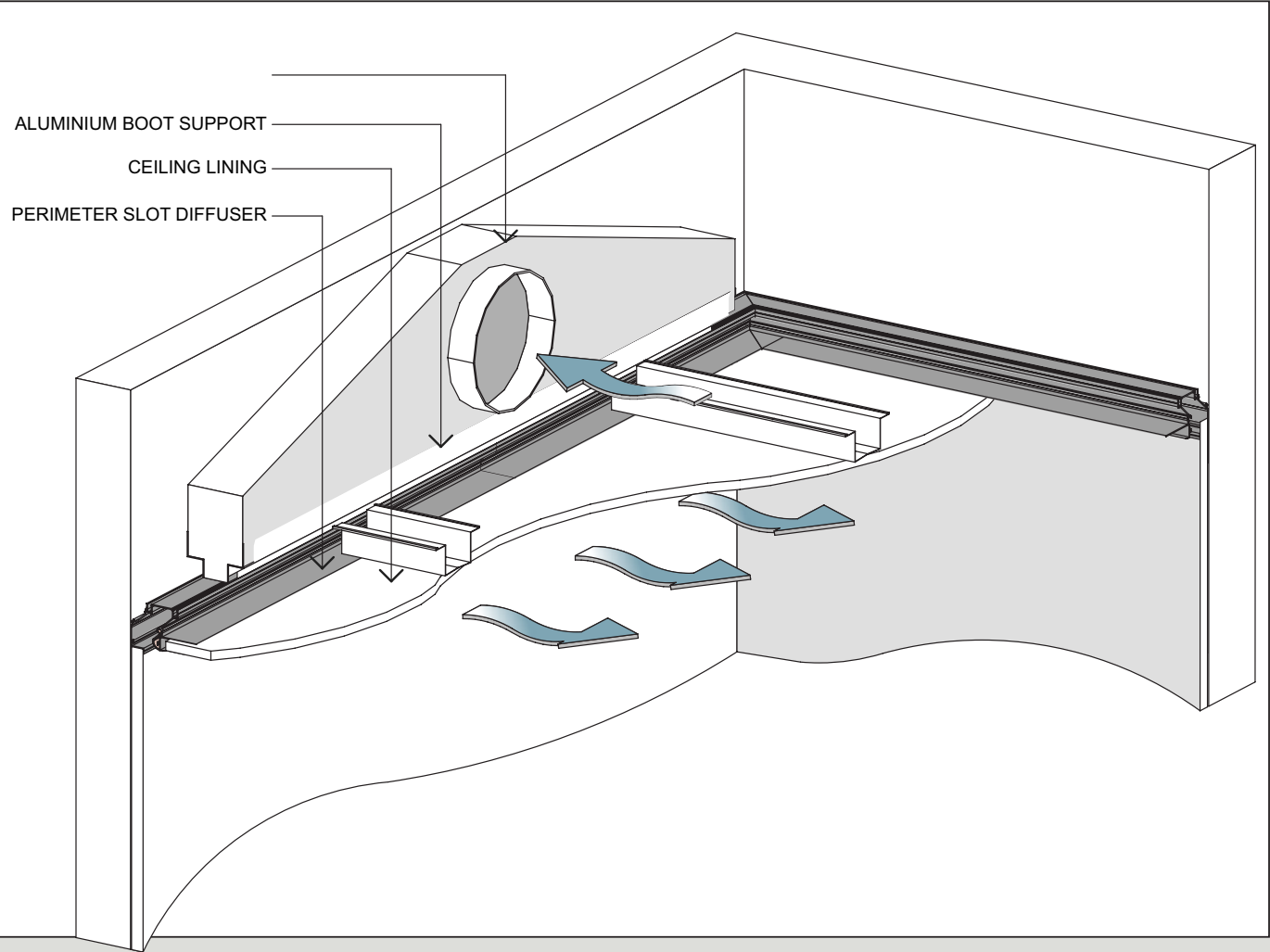
Perimeter Slot Diffuser PSD



Section Detail



Air Supply from Ceiling Plenum



Perimeter Slot Diffuser

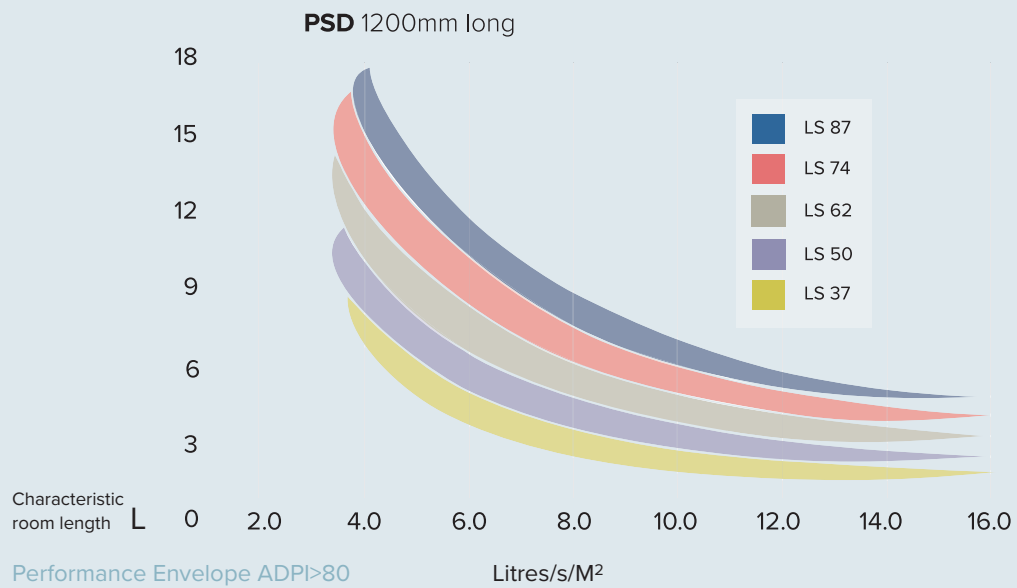
PSD



Aerodynamic performance



ADPI >80



Supply Air Model PSD with PSDAI Supply Adapter

Capacity m ³ /s		0.047	0.057	0.066	0.076	0.085	0.094	0.104	0.113	0.123
Projection, m	H	1.2-3.4	1.5-3.7	1.8-4.0	2.1-4.3	2.4-4.6	2.7-4.9	3.1-5.2	3.1-5.2	3.1-5.6
	V	0.6-1.8	0.9-2.1	0.9-2.1	0.9-2.4	1.2-2.4	1.2-2.7	1.5-2.7	1.5-2.7	1.8-3.1
Nom. Length	Spread m	H	1.8-4.9	2.1-5.6	2.7-5.8	3.1-6.4	3.7-6.7	4.0-7.3	4.6-7.6	4.6-7.6
	V	0.9-2.4	1.2-2.7	1.2-2.7	1.2-3.1	1.5-3.1	1.5-3.7	1.8-3.7	1.8-3.7	2.4-4.0
0.9m	TP	42	60	80	105	134	162			
	NC	28	34	39	42	46	49			
1.2m	TP	21	31	42	55	68	83	103	122	
	NC	19	25	30	33	37	40	43	46	
1.5m	TP	13	19	25	33	41	51	61	72	88
	NC	-	17	22	25	29	32	35	38	40

Return Air

Neg. S.P	5	10	18	27	40	54	70	113
m ³ /s/m	0.031	0.047	0.062	0.078	0.093	0.109	0.124	0.155
N C	-	-	19	25	30	34	38	44

Perimeter Slot Diffuser

PSD Series - Performance Data

General Notes on performance

1. All pressures are in Pa (N/m²).
2. Projection (throw) values in metres are based upon the performance of a one metre long active section. When only 300mm is active, the values are 0.6 times those shown. For a 3 metre long continuous length, the values are 1.8 times those shown. See table below:

Length mm	300	400	500	600	700	800	900	1000	1200	1500	1800	2000	2400	3000
Correction Factor	0.6	0.66	0.72	0.8	0.84	0.9	0.96	1	1.08	1.2	1.32	1.4	1.56	1.8

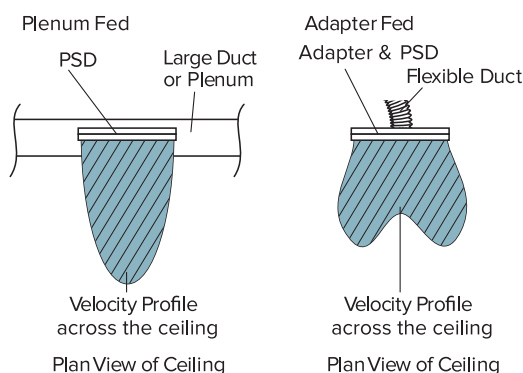
H : Horizontal projection : Minimum is to a terminal velocity of 0.75m/s and maximum to 0.25m/s. V : Vertical projection is to a terminal velocity of 0.25m/s.

3. Spread is the maximum width of the jet defined by the above velocities.
4. N.C. values are based upon horizontal projection from a three metre active section and a room absorption of 10dB re 10-12 watts. Vertical projection values are 11dB less than listed.
5. N.C. correction for length:

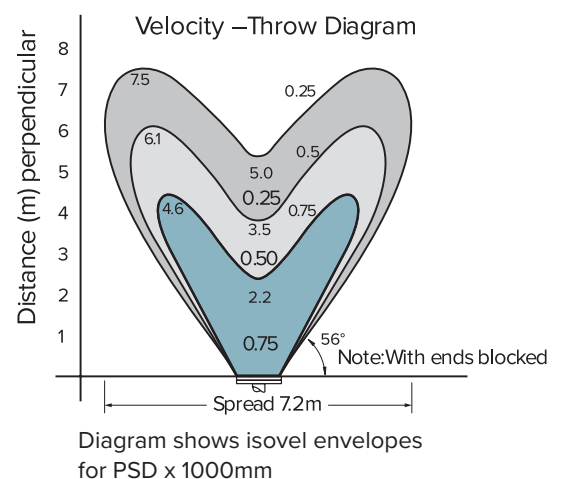
Length mm	300	600	1000	1200	1800	2400	3000	4500	6000	7500	9000
Supply	-16	-11	-7	-6	-3	-2	0	+3	+5	+6	+8
Return	-10	-7	-5	-4	-2	-1	0	+2	+3	+4	+5

6. Figures for plenum fed diffusers are for essentially zero inlet velocity. The velocity profile is relatively uniform for the length of the active section.
7. Figures for adapter fed diffusers take account of the effect of the adapter and inlet neck on diffuser velocities which tend to be less uniform and produce a velocity profile of the shape shown in the Velocity Throw diagram below. The 0.25m/s isovel generally shows a projection reduction at the centre of approximately 25%.

Typical Plenum and Adapter Fed Velocity Profiles



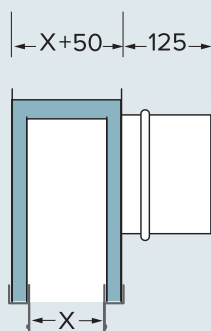
Typical Throw envelopes for PSDAI Adapter fed PSD section



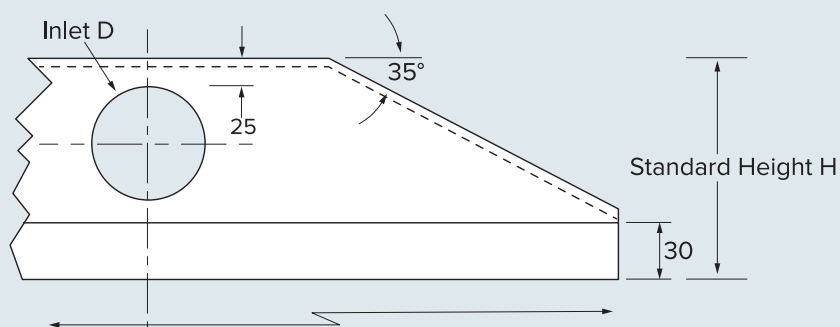
Perimeter Slot Diffuser

PSDAI Series - Adapter

PSDAI Adapter



Premi-Aire™ R1.2 Thermal Adapter



1200 (Standard) 900, 1000 & 1500 also available

PSDAI Dimensions

PSD		
D	H	X
125	220	30
150	245	30
200	295	30
250	345	30

Guide Weights
PSDAI
1200
5.08

Notes

1. For sizes other than shown Standard Height H = inlet Diameter +100
2. Construction details may vary*
3. Ovalised inlet spigot options available

* Please check with your local Holyoake branch

Perimeter Slot Diffuser

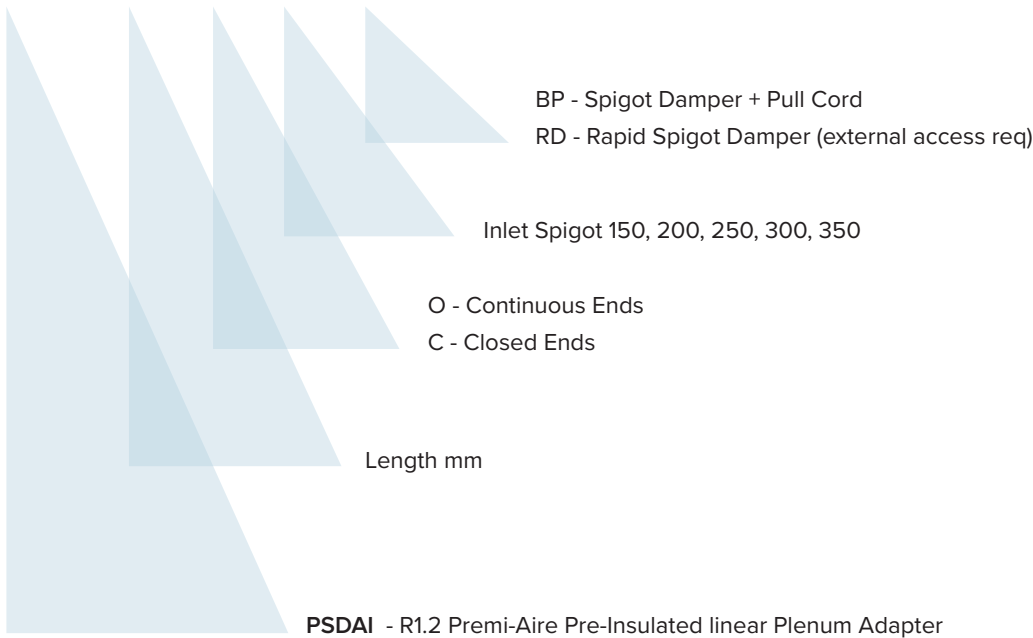
PSD Series - Nomenclature

PSD | Lmm |



PSD Adapter - Nomenclature

PSDAI | Lmm | O | 200 | BP



HEAD OFFICE - NEW ZEALAND

Auckland Office & Factory

67-69 Greenmount Drive, East Tamaki
Auckland 2013 New Zealand

PO Box 58-479 Botany

Manukau 2163 Auckland NZ

Tel +64 9 274 4144

Fax +64 9 274 4288

Email auckland@holyoake.com

Wellington Office & Factory

89 Main Road, Tawa

Wellington 5028 New Zealand

PO Box 51-038 Tawa

Wellington 5249 New Zealand

Tel +64 4 232 2722

Fax +64 4 232 2822

Email wellington@holyoake.com

Christchurch Office & Factory

27 Waller Terrace, Addington

Christchurch 8011 New Zealand

PO Box 632 Christchurch Mail Centre

Christchurch 8140 New Zealand

Tel +64 3 366 6545

Fax +64 3 366 6665

Email christchurch@holyoake.com

AUSTRALIA

Melbourne Office & Factory

95 Redwood Drive, Dingley

Victoria 3172 Australia

PO Box 195, Braeside

Victoria 3195 Australia

Tel +61 3 9551 5022

Fax +61 3 9551 8414

Email melbourne@holyoake.com

Sydney Office & Factory

12 Butterfield Street, Blacktown

NSW 2148 Australia

Tel +61 2 9620 9555

Fax +61 2 9624 8226

Email sydney@holyoake.com

Brisbane Office & Factory

5 Program Street, Yatala

Queensland 4207 Australia

PO Box 6061 Yatala

Queensland 4207 Australia

Tel +61 7 3807 7111

Fax +61 7 3807 7800

Email brisbane@holyoake.com

Adelaide Office & Factory

86 Hardys Road, Torrensville

Adelaide SA 5031 Australia

Tel +61 8 8354 1580

Fax +61 8 8354 1586

Email adelaide@holyoake.com

Perth Office

Level 28 AMP Tower

140 St Georges Terrace

Perth WA 6000 Australia

Tel +61 8 8354 1580

Fax +61 8 8354 1586

Email perth@holyoake.com

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