

metrofires

Wood Fire Specifications 2012

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National Environmental Standards

National Environmental Standards (NES) came into effect throughout New Zealand in 2005, imposing a minimum 65% efficiency and maximum 1.5 grams emission requirement on all wood fires installed on properties with a land area of less than two hectares. This means:

65% Heat Efficiency Requirement

100% of the heat produced by a wood fire does not end up inside the home; some of the heat is lost up the fluepipe, so a minimum 65% of the heat must be produced inside the home to obtain NES compliance. This can be hard to achieve especially if a wetback is fitted. Wetbacks utilise heat within the firebox to produce hot water, this heat that is used to make hot water is not allowed to be calculated within the 65% requirement, making the requirement extremely hard to achieve, which is why the majority of NES approved wood fires on the market are not wetback approved, however, the majority of Metro wood fires are.

1.5 Gram Emission

1.5grams is the maximum amount of particulate (PM10) that is allowed to be emitted from the wood fire per 1kg of fuel burnt. Some areas throughout New Zealand have more stringent by-laws in place, Central Otago Air Shed 1 has adopted a 0.7 gram emission limit, Canterbury have adopted a 1 gram emission limit to name a few.

Metro Fires take pride in achieving many industry first's, which has come from the huge resource it invests in research and development. Metro Fires offer the largest range of NES and ECan approved wood fires, the majority with water heating options. In addition, Metro still offer a large range of LTD models for rural home owners wanting longer burn times.

ECO, ECO DV & Ambience Models

Specifically designed for properties less than two hectares, these models surpass the requirements of the NES. Utilising advanced combustion technology these Metro's have a more complex firebox design which operates at higher combustion temperatures.

LTD Models

Designed for properties two hectares or more, LTD Metro's retain over night burn capabilities while still meeting internationally accepted efficiency and emission standards.

Please note

Some regional councils have imposed emission requirements which take precedence over the NES, while some councils in New Zealand have imposed or are considering adopting by-laws relating to environmental issues. If in doubt, consult your local council or Metro retailer.

Some councils require a "Test Certificate" detailing the wood fire approval details. All Metro's Test Certificates are listed on www.metrofires.co.nz

ECO & Ambie Models	Tested Emission & Efficiency		ECan Authorisation Number		Complies with National Environmental Standards
	Without Wetback	With Wetback	Without Wetback	With Wetback	
Ambie One	0.96gms/71%	Not Tested	120834	Not Tested	Without Wetback only
Ambie Plus	0.42gms/68%	0.49gms/67%	120835	120836	With & Without Wetback
ECO Tiny Rad	0.94gms/75%	0.85gms/67%	072605	072607	With & Without Wetback
ECO Tiny Ped	0.72gms/78%	1.0gms/66%	073897	080009	With & Without Wetback
ECO Wee Rad	0.88gms/70.4%	0.96gms/65.2%	092977	102678	With & Without Wetback
ECO Wee Ped	0.88gms/70.4%	0.96gms/65.2%	092976	102679	With & Without Wetback
ECO Wee Curve (DV)	0.65gms/68%	Not tested	093460	Not Tested	Without Wetback only
ECO Xtreme Rad (DV)	0.89gms/68.2%	0.94gms/68.8%	112026	102676	With & Without Wetback
ECO Xtreme Ped (DV)	0.86gms/69.4%	1.04gms/67.4%	112024	102677	With & Without Wetback
ECO Euro Rad (DV)	0.72gms/72%	Not tested	072608	Not Tested	Without Wetback only
ECO Euro Ped (DV)	0.65gms/70.4%	1.08gms/70.2%	110221	N/A in Canterbury	With & Without Wetback
ECO Smart Insert	0.49gms/68%	0.82gms/67%	120411	102426	With & Without Wetback
ECO Insert	0.91gms/65%	Not tested	101157	Not Tested	Without Wetback only
ECO Mega Smart Built-In	0.65gms/69%	0.56gms/66%	110719	111058	With & Without Wetback

LTD Models	Tested Emission & Efficiency	Can be installed on property sizes two hectares and greater Complies with AS/NZS2918:2001
LTD Wee Rad	2.3gms/71%	Yes - With & Without Wetback
LTD Wee Ped	2.3gms/71%	Yes - With & Without Wetback
LTD Xtreme Rad	3.3gms/63%	Yes - With & Without Wetback
LTD Xtreme Ped	3.3gms/63%	Yes - With & Without Wetback
LTD Euro Ped	3.3gms/63%	Yes - With & Without Wetback
LTD Mega Rad	2.0gms/65.6%	Yes - With & Without Wetback
LTD Mega Ped	2.0gms/65.6%	Yes - With & Without Wetback
LTD Insert	2.3gms/58%	Yes - With & Without Wetback

Insert Installation Specifications

Insert Pre Installation

Metro fireplace inserts are tested to comply with AS/NZS 2918:2001 incorporating appendix "E" when installed in accordance with the installation and operation manual supplied with every Metro wood fire.

Prior to installing your Metro fireplace insert into a masonry chimney, it is important that certain clearances and other requirements are complied with as detailed below :-

Chimney

The masonry chimney must be swept and checked for: -

- Cracks and general overall condition, with repairs carried out if necessary by a suitably qualified person.
- Cavity dimensions to ensure the fireplace insert will fit, it may be necessary to remove the fire bricks from the lower masonry chimney cavity.
- The base of the masonry chimney cavity on which the Metro fireplace insert will rest **must be level**, if it is not, it must be levelled using mortar.
- If an ash removal door exists in the base of the chimney it should be sealed shut to prevent air entering the cavity.

Mantelshelf

If a timber or combustible mantelshelf exists above the fireplace insert opening, it should be a minimum distance above the top of the Metro's fascia, minimum distances are:

- Metro ECO Smart Insert = 475mm
- Metro ECO Insert = 340mm
- Metro LTD Insert = 460mm

If less than the above minimum specified, a deflector or heat shield will be required to be fitted under the mantel. (REF AS/NZS 2918:2001)

ECO Insert Fan

On properties less than 2 hectares, the Metro ECO Insert must be installed with Metro's ECO Insert fan which is a single speed, thermostatically controlled device. Fitting instructions for the fan are supplied with the fan module.

Insert Floor Protector Requirements

A floor protector must extend from behind the fascia the distance specified in the table below, and 200mm to each side of the door opening.

NOTE – Floor protector requirements differ for the three models listed;

ECO Smart Insert: Requires an insulating floor protector with a recommended construction of tiles on 26mm thick eterpan. The forward projection is dependent on the height of the fireplace insert above the combustible floor, which is detailed below.

ECO Insert: Only requires a non-insulating "ash-hearth" floor protector. Recommended construction is "tiles on 6mm thick villa board", although any non-combustible material fixed direct to the combustible floor is acceptable including glass or steel/aluminum sheet etc.

LTD Insert: Requires an insulated floor protector and the forward projection is dependant on the height of the fireplace insert above the combustible floor. The schedule of projections listed for heights of 0mm to 41mm+ can be achieved by the thickness of the floor protector, raising the insert or a combination of the two. Recommended construction is "tiled eterpan" with a combined thickness as specified.

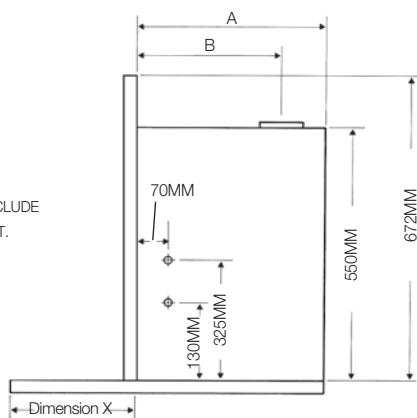
Insulating of the Cabinet/Chimney

To minimise/stop heat loss up the chimney cavity, it is highly recommended that the wood fire cabinet is sealed, by packing any gaps that exist between the sides and top of the fireplace insert cabinet and fireplace surround, by using a suitable rated insulation (fibertex 450 or similar)

Insert Wood Fire Flue Systems

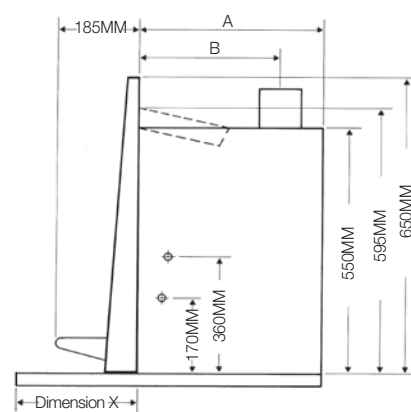
It is recommended all Metro wood fires be installed with the Metro ECO Flue System which include Metro's vertical discharge cowl which improves draft and performance.

ECO Smart Insert



NOTE:
MEASUREMENTS EXCLUDE
INSULATING BLANKET.

LTD & ECO Inserts



Fascia Model	Base Width	Body Width
ECO Smart Insert	890mm	890mm
ECO Trad Fascia	900mm	810mm
LTD & ECO Trend Fascia	810mm	810mm

Firebox Model	A	B	Width
ECO Smart Insert	495mm	405mm	560mm
ECO Insert	500mm	405mm	560mm
LTD Insert	500mm	405mm	560mm

Floor Protector Height	0mm	10mm	15mm	20mm	25mm	30mm	35mm	40mm	41mm+	
ECO Smart Insert (Dimension X)	395mm	371mm	371mm	353mm	353mm	332mm	332mm	312mm	312mm	
ECO Insert (Dimension X)	300mm minimum projection is required irrespective of the height of the floor protector									
LTD Insert (Dimension X)	455mm	455mm	455mm	436mm	424mm	408mm	396mm	366mm	350mm	

Converting a Metro Insert Appliance into a Built-In Appliance

Metro's Insert appliances have the ability to be converted into a Built-In appliance, by using Pioneer's Vented Zero Clearance Cabinet (VZCC) in conjunction with the Metro Insert. The difference between an Insert and a Built-In appliance is:

- Insert - A Fireplace Insert is designed to be installed into a masonry chimney cavity.
- Built-In - A Built-In appliance is designed to be installed into a timber framed cavity, which is commonly used in new and renovated homes.

Vented Zero Clearance Cabinet

The function of the (VZCC) as shown below, is to enable the Metro LTD Insert, ECO Insert and ECO Smart Insert to be installed into a timber framed wall. The VZCC therefore replaces the more traditional masonry chimney at a fraction of the cost. Detailed instructions for the VZCC are available from your Metro retailer or www.metrofires.co.nz



ECO Built-In Flue System

Metro's ECO Built-In Flue System must be used with the installation of the Metro appliance. The ECO Built-In Flue System incorporates Metro's unique vertical discharge cowl which improves flue draft and performance of the Metro Built-In wood fire.

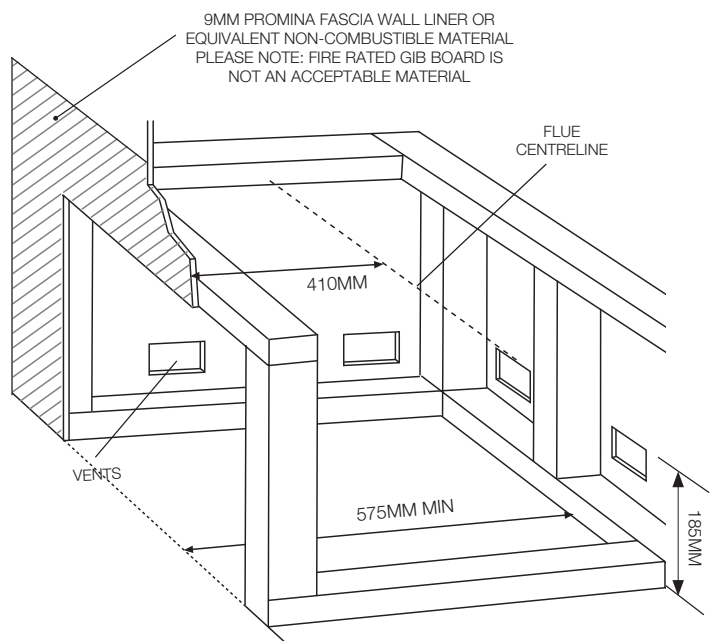
A minimum length of 4m of 150mm diameter flue pipe is required. The total length of the 150mm flue pipe must be fully encased from top to bottom with a 200mm diameter inner casing and a 250mm diameter outer casing.

Fascia Wall Liner

A non combustible fascia wall liner is required to sit behind the fascia as illustrated below. Metro offer a pre-cut 9mm Promina fascia wall liner for the Metro Built-In appliances.

Preparing the Wall Opening/Cavity

- Width of opening
 - 700mm suggested
 - 800mm maximum
 - 690mm minimum
- Height of opening
 - 695mm suggested
 - 700mm maximum
 - 690mm minimum



Metro's come complete with fully detailed installation instructions, including the owners operation and warranty manual, these manuals are also available on www.metrofires.co.nz

ECO Mega Smart Built-In Installation Specifications

Metro's ECO Mega Smart Built-In is specifically designed for timber framed cavities.

Mantelshelf

If a timber or combustible mantelshelf exists above the ECO Mega Smart Built-In, it must be a minimum distance above the top of the ECO Mega Smart Built-In fascia. The minimum distance is:

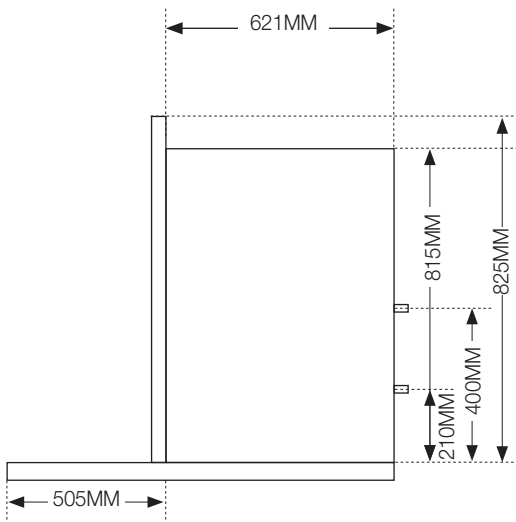
- 500mm

If less than the minimum specified, a deflector or heat shield will be required to be fitted under the mantelshelf. (REF AS/NZS 2918/2001)

Floor Protector Requirements

The Metro ECO Mega Smart Built-In requires an insulating floor protector, minimum requirement is 18mm thick Promina board or equivalent, finished with a non combustible tile or similar.

The floor protector must be a minimum width of 1057mm and a minimum overall depth of 505mm. Minimum overall depth is the distance from the front of the wall lining (behind the fascia) to the front non combustible point of the floor protector.



Fascia Model	Depth	Height	Width
ECO Mega Smart Built-In	30mm	825mm	1057mm

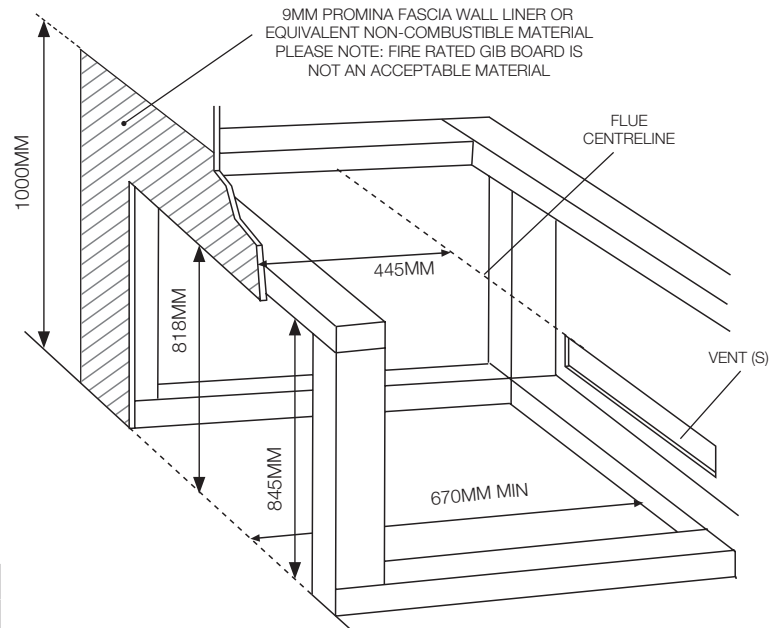
ECO Built-In Flue System

Metro's ECO Built-In Flue System must be used with the installation of the Metro appliance. The ECO Built-In Flue System incorporates Metro's unique vertical discharge cowl which improves flue draft and performance of the Metro ECO Mega Smart Built-In wood fire.

A minimum length of 4m of 150mm diameter flue pipe is required. The total length of the 150mm flue pipe must be fully encased from top to bottom with a 200mm diameter inner casing and a 250mm diameter outer casing.

Fascia Wall Liner

A non combustible fascia wall liner is required to sit behind the fascia as illustrated below. Metro offer a pre-cut 9mm Promina fascia wall liner for the Metro ECO Mega Smart Built-In appliances.



Metro's come complete with fully detailed installation instructions, including the owners operation and warranty manual, these manuals are also available on www.metrofires.co.nz

Upgrade to the Metro ECO Flue System

ECO Flue Systems are an innovation from Metro, based on many years of development and testing to achieve what Metro's engineers believe to be the optimum performance and efficiency possible from a flue system.

Metro ECO Flue Systems differ from conventional flue systems in that the cooling air for the system is not taken from inside the home but is drawn in from outside. The energy savings achieved by installing a Metro ECO Flue System are impressive.

Independent testing of a conventional flue system resulted in 450 litres per minute of the warmest air available in the room being drawn out of the home.

A conventional flue system draws air from the room to keep itself cool, resulting in the warmest air from your wood fire being drawn out of your home. This discarded warm air is then replaced with cold outside air drawn back into your home. On a cold winter's night this hugely inefficient system will empty an average sized room once every hour of

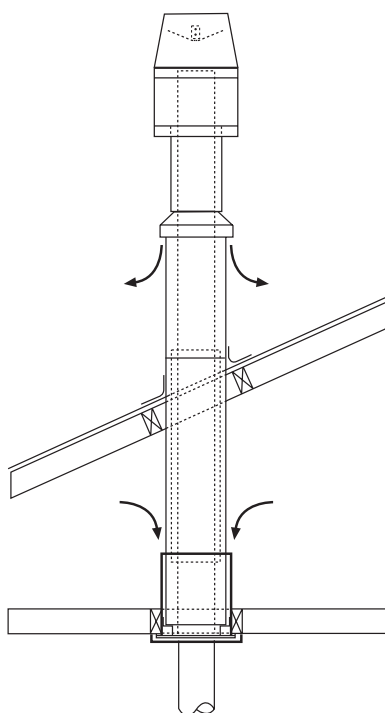
potentially 45°C air. It replaces it with the outside air which in some regions will be below zero.

Metro offers both the ECO Base Flue System, which is designed to be installed on its own and the ECO Option Kit which is designed to be installed in conjunction with the ECO Base Flue System.

Metro ECO Base Flue System

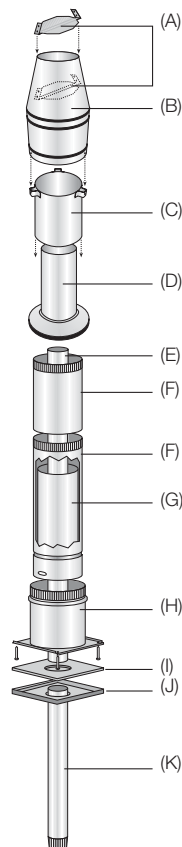
Metro ECO Base Flue System is designed for installation into a home that has a "ceiling cavity" with unrestricted air supply. A vented ceiling cavity is required as the ECO Base Flue System draws its cooling air from the ceiling cavity.

ECO BASE FLUE SYSTEM ASSEMBLED



ECO BASE FLUE SYSTEM COMPONENTS

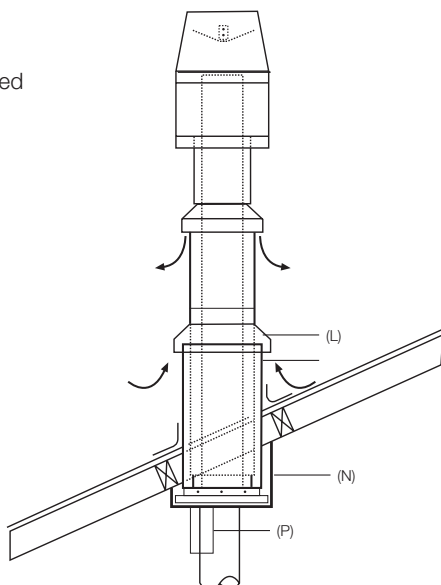
- (A) 1 x Stainless steel weather butterfly
 - (B) 1 x Stainless steel ECO cowl housing
 - (C) 1 x 225mm x 200mm diameter stainless steel outer casing extension
 - (D) 1 x 480mm x 150mm long stainless steel flue pipe extension with flashing cone
 - (E) 1 x 1200mm x 150mm diameter stainless steel flue pipe
 - (F) 1 x 1200mm x 250mm diameter galvanised outer casing with 750mm long slip section
 - (G) 1 x 800mm x 200mm diameter galvanised inner casing
 - (H) 1 x Galvanised mounting plate with brackets and 300mm long x 300mm diameter casing attached
 - (I) 1 x insulation gasket
 - (J) 1 x clip-on ceiling plate
 - (K) 2 x 1200mm lengths of 150mm diameter stainless steel flue pipe painted metallic black
- (+) - 1 x Plastic bag of assembly bolts



Metro ECO Option Kits

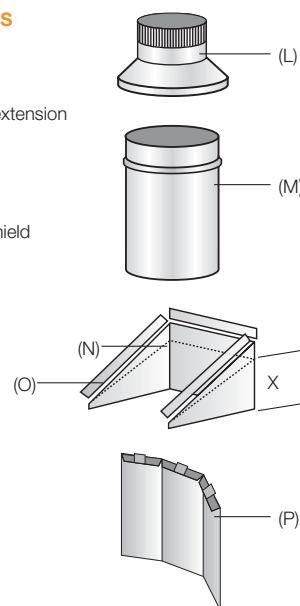
The Metro ECO Option Kit is designed to be "added to" the Metro ECO Base Flue System for installations that do not have a vented ceiling cavity and require the flue systems cooling air to be drawn in from above the roofline (outside the building).

ECO BASE FLUE SYSTEM & ECO OPTION KIT ASSEMBLED



ECO OPTION KIT COMPONENTS

- (L) External intake flashing cone
- (M) 300mm diameter outer liner extension
- (N) Drop box infill panel
- (O) Drop box edge covers
- (P) Ceiling plate mounted heat shield



METRO INSERT FLUE KIT

The Metro ECO Insert Flue Kit is suitable for all Insert Metro wood fires, installed into a masonry chimney cavity. Suitable for the following Metro Insert models:

- LTD Trend & Trad
- ECO Insert
- ECO Smart

METRO ECO BUILT-IN FLUE KIT

The Metro ECO Built-In Flue Kit is designed for Built-In installations, being installed into a timber framed chimney cavity.

Suitable for the following Metro Built-In models:

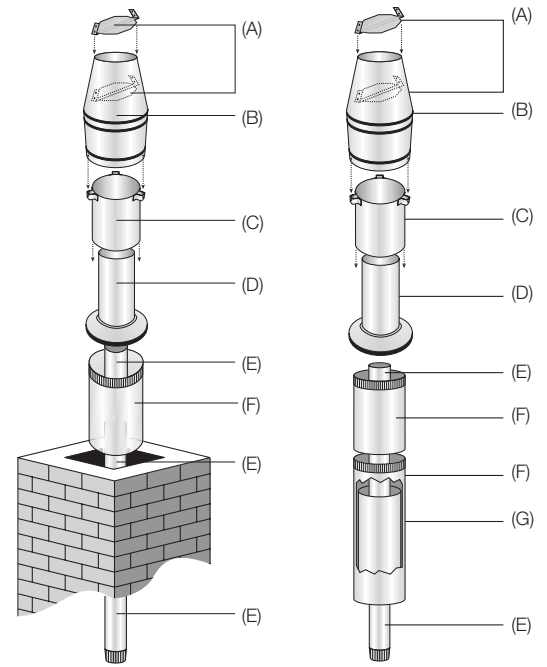
- LTD & ECO Inserts complete with the Metro Vented Clearance cabinet, which converts the Insert into a Built-In appliance
- ECO Mega Smart Built-In

ECO INSERT FLUE KIT COMPONENTS

- (A) 1 x Stainless steel weather butterfly
- (B) 1 x Stainless steel ECO cowl housing
- (C) 1 x 225mm x 200mm diameter stainless steel outer casing extension
- (D) 1 x 480mm x 150mm long stainless steel flue pipe extension with flashing cone
- (E) 3 x 1200mm x 150mm diameter stainless steel flue pipe
- (F) 1 x 600mm x 250mm diameter galvanised outer casing

ECO BUILT IN FLUE KIT COMPONENTS

- (A) 1 x Stainless steel weather butterfly
- (B) 1 x Stainless steel ECO cowl housing
- (C) 1 x 225mm x 200mm diameter stainless steel outer casing extension
- (D) 1 x 480mm x 150mm long stainless steel flue pipe extension with flashing cone
- (E) 3 x 1200mm x 150mm diameter stainless steel flue pipe
- (F) 3 x 1200mm x 250mm diameter galvanised outer casing
- (G) 3 x 1200mm x 200mm diameter galvanised inner casing

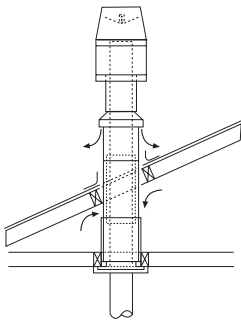


ECO INSERT FLUE KIT

ECO BUILT IN FLUE KIT

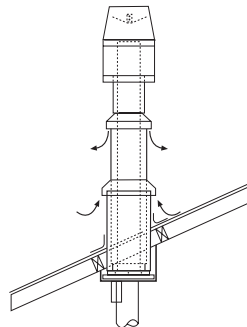
Shown below are the more common installation methods for installing Metro ECO Flue Systems. To ensure a safe and efficient installation, this flue system must be installed as detailed below by either a registered installer, or someone competent in installing solid fuel appliances.

Single Storey Installations



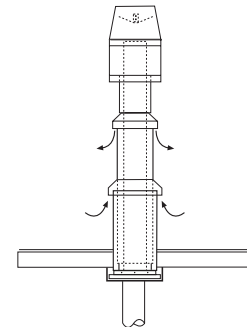
FLAT CAVITY CEILING

ECO Base Flue System only required as air is drawn into the flue system direct from the ceiling cavity.



SLOPING CEILING

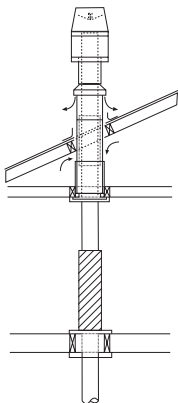
Both the ECO Base Flue System and ECO Option Kit are required to enable air to be drawn from outside the home.



FLAT CEILING/ROOF

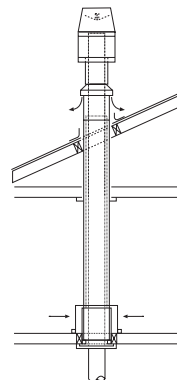
Requires both ECO Base Flue System and ECO Option Kit as per sloping ceiling unless a vented ceiling cavity exists.

Two Storey Installations



2ND FLOOR EXPOSED FLUE PIPE

Requires an ECO Base Flue System only with additional lengths of Flue pipe, a floor penetration kit, 1 x 1200mm long mesh/screen and one 250mm dia. x 300mm long black in accordance with AS/NZS2918:2001.



2ND FLOOR ENCLOSED FLUE PIPE

Requires an ECO Base Flue System only with additional lengths of Flue pipe, 200mm & 250mm inner/outer combination liners. A 2nd floor vent cover and an additional ceiling plate with a 250mm diameter hole in accordance with AS/NZS2918:2001.

Metro Stainless Steel Liners

Metro offer both the ECO Base Flue System and the ECO Option kit with optional stainless steel liners, for coastal installations, or for those wanting a superior look and finish.

Upgrade to the ECO Flue System

To get the best performance from your Metro wood fire, it is highly recommended that the Metro ECO Flue System is installed with your Metro. The ECO flue system is an optional extra, please ensure you request the ECO Flue System at the time of purchasing.

Freestanding Installation Clearances & Specifications

Model Clearances

Minimum clearances shown are in mm, with a Pioneer double flue mounted shield fitted. All Metro wood fires comply with AS/NZS2918:2001. Specifications were correct at the time of printing, but may alter and those detailed within should be used only as a guide. Refer to the installation and operation manual supplied with every Metro, or if in doubt, consult your Metro retailer.

Clearance Reductions

AS/NZS 2918:2001 allows for a reduction in minimum clearances as detailed in tables 3.1 and 3.2 of the standard which your Metro retailer will be able to advise you on. Pioneer has also tested certain model Metro's with "side extensions" fitted to the Pioneer double flue mounted shield, to achieve a reduction in clearances, details are;

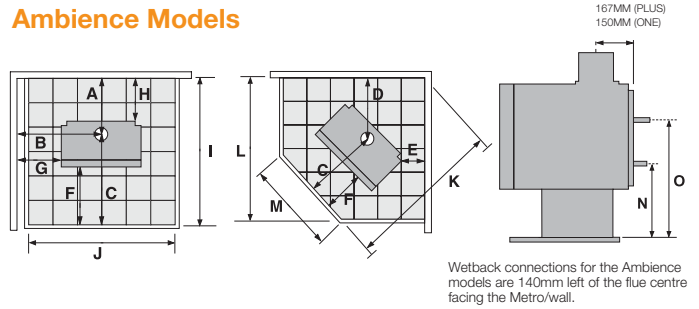
- The LTD Wee Ped installed with a Pioneer double flue mounted shield with side extensions fitted can have side clearances B and G reduced by 80mm if installed into an alcove which does not project forward of the Metro.
- The LTD Wee Rad and LTD Wee Ped rear clearance (H) and overall floor protector depth (I) can reduce by 50mm providing a wetback is not fitted and therefore maintenance access is not required.
- The ECO Euro Ped and ECO Xtreme Ped installed with a Pioneer double flue mounted shield with side extensions fitted reduces minimum corner clearance E from 170mm to 110mm. In this situation use the LTD Metro equivalent for measurements E, D, K & L. (i.e use LTD Euro Ped chart for ECO Euro Ped for E, D, K & L).

Freestanding Floor Protectors

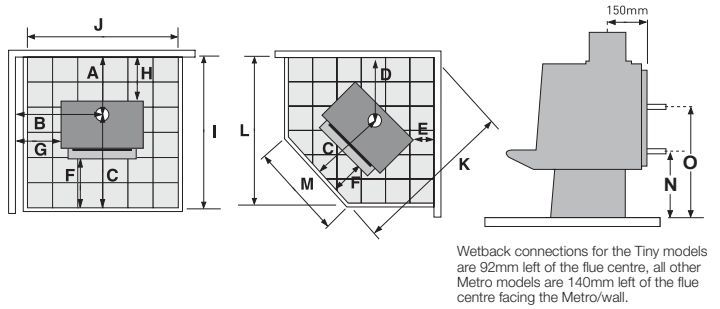
Metro freestanding wood fires do not require an insulating floor protector, and are tested and comply with the minimum floor protector requirements of AS/NZS 2918:2001. Note:

- Minimum floor protector sizes are specified below
- A floor protector can include ceramic tiles, a sheet of toughened glass, panel steel or any other non combustible material laid directly onto a wooden floor
- Metro manufacture a large range of floor protectors in a range of tiles and colours, in three different trim options.

Ambience Models



ECO & LTD Models



Clearances & Dimensions	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	Width	Depth	Height
Ambie One	250	538	589	391	100	275	250	100	839	825	1142	960	427	350	540	577	464	717
Ambie Plus	267	685	658	462	125	275	350	100	925	905	1317	1110	506	360	550	671	550	761
ECO Tiny Ped	210	430	580	290	25	200	185	60	790	650	990	875	250	280	470	490	530	665
ECO Tiny Rad	225	552	580	420	150	200	300	75	805	650	1165	925	250	280	470	505	530	665
ECO Wee Rad	260	525	580	385	80	200	220	110	840	825	1125	950	425	295	485	607	530	665
ECO Wee Ped	260	595	580	385	85	200	300	110	840	825	1120	950	425	295	485	590	530	665
ECO Wee Curve (DV)	300	555	580	405	100	200	250	150	880	825	1150	975	425	280	470	607	530	665
ECO Xtreme Ped (DV)	230	585	625	495	170	200	250	80	855	905	1325	1120	505	325	515	670	575	715
ECO Xtreme Rad (DV)	250	575	625	435	80	200	200	100	875	905	1240	1065	505	338	528	750	575	745
ECO Euro Rad (DV)	250	625	625	435	80	200	250	100	875	905	1240	1065	505	338	528	750	575	745
ECO Euro Ped (DV)	230	585	625	495	170	200	250	80	855	905	1325	1120	505	325	515	670	575	715
ECO Euro Trad (DV)	230	585	625	495	170	200	250	80	855	905	1325	1120	505	325	515	670	575	715
LTD Wee Rad	250	555	580	400	80	200	250	100	830	825	1145	950	425	295	485	607	530	665
LTD Wee Ped	250	595	580	400	85	200	300	100	830	825	1145	950	425	295	485	590	530	665
LTD Xtreme Ped	250	575	625	455	110	200	240	100	875	905	1265	1065	505	340	530	670	575	715
LTD Xtreme Rad	250	575	625	455	80	200	200	100	875	905	1265	1065	505	353	543	750	575	745
LTD Euro Ped	250	575	625	455	110	200	240	100	875	905	1265	1065	505	340	530	670	575	715
LTD Mega Rad	270	675	725	500	125	200	300	120	995	905	1425	1175	505	353	543	750	675	745
LTD Mega Ped	270	610	725	465	130	200	275	120	995	905	1400	1140	505	340	530	670	675	715