

LEGISLATION BULLETIN



EU Directives

BS EN 14511: 2013

BS EN 14825: 2013

BS EN 14825: 2012

Air Source: Split or Multi-split & VRF Heat Pumps

Air Source: Air to Water Heat Pump

The **Carbon Trust** has recently made changes to the eligibility performance criteria for sub-category **HEAT PUMPS** for the **Energy Technology List** that became effective on the 7th August 2014 for the **Enhanced Capital Allowance Scheme**.

Air source split or multi-split and VRF heat pump products have become “unlisted”. Consumer and business users are now required to liaise with equipment manufacturers or suppliers to ensure that the products they are purchasing meet the current criteria.

Validation issued by the equipment manufacturer or supplier may now be used to support an **ECA** claim providing that it meets with the current performance criteria at the time of purchase. Please note any products previously detailed on the list and still displayed are for historical value only. Products will qualify for an **ECA** claim subject to meeting the current performance criteria listed in the tables below;-

Table 1: Performance requirements for air source split and multi-split heat pumps

	Rated Cooling Capacity	>12kW		<12kW	
		Heating mode (COP)	Cooling mode (EER)	Heating mode (SCOP)	Cooling mode (SEER)
1	Air Source: Single Split (non VRF) Heat Pump	>3.70	>3.20	>4.00	>6.10
2	Air Source: Dual Split (non VRF) Heat Pump	>3.70	>3.20	>4.00	>6.10
3	Air Source: Multi-Split (non VRF) Heat Pump	>3.70	>3.20	>4.00	>6.10
4	Air Source: Split or Multi-Split Variable Refrigerant Flow (VRF) Heat Pumps	>3.80	>3.40	N/A	N/A

Table 2: Test Conditions for air source split and multi-split heat pumps >12kW and VRF

	Product Category	Heating mode (COP)	Cooling mode (EER)
1	Air Source: Single Split (non VRF) Heat Pump	BS EN 14511:2013 Table 3 Standard rating Conditions Outdoor air/recycled air.	BS EN 14511:2013 Table 3 Standard rating Conditions Outdoor air/recycled air
2	Air Source: Dual Split (non VRF) Heat Pump	BS EN 14511:2013 Table 19 Standard rating Conditions	BS EN 14511:2013 Table 20 Standard rating Conditions
3	Air Source: Multi-Split (non VRF) Heat Pump	BS EN 14511:2013 Table 19 Standard rating Conditions	BS EN 14511:2013 Table 20 Standard rating Conditions

> Greater than. < Less than.

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Table 3: Test conditions for air source split and multi-split heat pumps <12kW (Excluding VRF)

	Product Category	Heating mode (SCOP)	Cooling mode (SEER)
1	Air Source: Single, Dual or Multi-Split (non VRF) Heat Pump	BS EN 14825: 2013 Table 6 Average Heating Conditions	BS EN 14825:2013 Table 2

Please note **Department of Energy and Climate Change** has decreed that performance data obtained in accordance with the corresponding procedures and standard rating conditions laid down in **BS EN 14825: 2012** will be accepted as an alternative to testing in accordance with **BS EN 14825: 2013** until further notice.

Current criteria for the **Energy Technology List** sub-category Air to Water Heat Pumps continue to be listed by the **Carbon Trust** products will qualify for an **ECA** claim subject to meeting the performance criteria listed in the tables below;

Table 4: Performance thresholds for air to water heat pumps.

	Product Category	Heating Capacity (kW)	Heating mode (COP)	Cooling mode (EER)
1	Single split air to water heat pumps	≤ 20	> 4.20	> 3.10
		> 20	> 4.00	> 3.00
2	Packaged air to water heat pumps	≤ 20	> 4.10	> 3.10
		> 20	> 4.00	> 3.00

≤ Equal to or greater than

Table 5: Test conditions for air to water heat pumps

	Product Category	Heating mode (COP)	Cooling mode (EER)
1	Single split air to water heat pumps	BS EN 14511-2: 2013 Table 12 Standard rating conditions Outdoor air	BS EN 14511-2: 2013 Table 16 Standard rating conditions, water (for low temperature heating applications)
2	Packaged air to water heat pumps	BS EN 14511-2: 2013 Table 12 Standard rating Conditions Outdoor air	BS EN 14511-2: 2013 Table 16 Standard rating conditions, water (for low temperature heating applications)

Please note **Department of Energy and Climate Change** has decreed that performance data obtained in accordance with the corresponding procedures and standard rating conditions laid down in **BS EN 14511: 2004, BS EN 14511: 2007 or BS EN 14511: 2011** will be accepted as an alternative to testing in accordance with **BS EN 14511: 2013** until further notice.





BS EN 14511: 2013 has increased the benchmark for performance of heat pumps additional measures are:-

Seasonal Performance Factor (SPF) is a measure of the operating performance of an electric heat pump over the seasons, the ratio of the heat produced over the total electrical energy supplied for the season.

There are several different ways to evaluate the system boundaries, measured by for example **SPF_{H1}** (heat pump unit pump or fan(s)), **SPF_{H2}**, **SPF_{H3}**, **SPF_{H4}** (heat pump unit, pump (s) or fan (s), backup heater (s), auxiliary equipment including heat sink apparatus and power source). The lower the number, the less electricity-consuming components are included in the SPF calculation and therefore a higher

Seasonal Performance Factor.

The EU's **Seasonal Performance Factor** threshold is currently set at 2.5 measured using **SPF_{H2}** (Heat pump unit, pump or fan (s) and power source), at or above which a heat pump is considered renewable.

Conventional heating systems are measured using **SPF_{H4}**.

$$\text{SPF} = \frac{\text{Heat Energy Output (Kwh)}}{\text{Total Input Energy Including Pump (s) and or Fan (s) Controls, Backup Heater (s), Auxiliary Apparatus (kWh)}}$$

Seasonal Primary Energy Efficiency Ratio (SPEER) is a rating figure that measures the use of primary energy for all types of heat pumps, fossil fuel boilers, gas driven cogeneration technologies, hybrid systems using solar heating or heat pumps backed up with electric heating or fossil fuel boilers.

Energy labelling with **SPEER** will be mandatory from **2015** under the **Energy Labelling Directive** for equipment greater than 12kW.

If your not sure if the product you are looking at meets the required criteriar or you require additional information or clarification in respect to this bulletin, please contact;-

Cool Design Technical Support on **07590 77 55 10**

or drop us an email at support@cooldesignsltd.co.uk

or alternatively contact your Cool Designs sales contact.

