

ErP; ARE YOU READY FOR THE NEXT MILESTONE?

The September deadline for the ErP Directive for Warm Air Heaters 2018 (Lot 21), is fast approaching. New legislation has changed the way that the seasonal efficiency of heating equipment is calculated. Danny Packham, European Product Manager – Warm Air and radiant, from Nortek Global HVAC, outlines the key points.

Introduction

Gas fired warm air & radiant heating systems are long-standing technologies associated with effectively heating large open (industrial or commercial) spaces. By burning the fuel at point of use currently provides an efficient thermal and seasonal efficiency, the way in which manufacturers calculate seasonal efficiency (from 1st January 2018 changed due to ErP (Energy related Products) legislation coming into force.

We would like to give you an insight into the impact this legislation will have.

What is ErP?

ErP (Energy related Products) is part of the Ecodesign regulation (EU) 2015/1188 which, along with the implementing Directive 2009/125/EC is an EU policy aimed at improving the energy efficiency and other environmental performance criteria for energy-related products (ErP), such as Radiant & warm air heaters.

How is equipment categorized?

For ErP, products have been divided into product groups or 'Lots,' with warm air heaters using gaseous or liquid fuels contained within Lot 21 & radiant heaters within Lot 20.

What are the Requirements?

Each Lot provides the minimum energy efficiency and environmental values for each heating technology. Any product that does not comply with the requirements cannot be marketed and sold within the EU – including the UK.

Following the referendum in the UK to leave the EU, the requirements of Ecodesign will still have to be complied with as it could take up to two years to finalise the process. Even then, unless new UK legislation is introduced, ErP will continue to be one of many methods employed by the Government to reduce the environmental impact of heating technology.

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- **Lot 21** (warm air) has a max NO_x emission of 100mg/kWh_{input} plus a minimum seasonal efficiency of 72%. Seasonal efficiency is calculated from airflow temperature rise, thermal efficiency and electrical power consumption. Lot 21 also applies to AHU's and includes the performance of any heating / chilling coils, where human comfort is the primary heating purpose.

Essentially, other than outdoor (heating an outdoor space) units, air curtains or ambient units, all products need to comply with either Lot 20 or Lot 21, plus the motor efficiency ErP regulation.

Implementation date:

- Lot 21 (warm air heaters). Minimum seasonal efficiency came into force on the 1st January 2018, with the maximum NO_x levels applicable September 2018. The second tier for ErP will be 2021, whereupon seasonal efficiency will increase to 78% and maximum NO_x emission for gaseous fuels will be <=70mg/kWh_{input}.

Crucially, the minimum criteria for Lots 20 & 21 are applicable for new installations and when replacing existing products. As a result, customers can be assured that the heating equipment they are purchasing is highly energy efficient and emissions of harmful environmental pollutants are constrained.

Unlike other products, warm air heaters and other commercial heating appliances are directly planned and purchased by HVAC professionals, the Regulation 2015/1186 excludes warm air heaters and other commercial heaters from mandatory energy labelling. However, product literature and free access websites of manufacturers must indicate the seasonal efficiency and NO_x emissions for each product or system.

Air Curtains are not considered warm air heaters by the scope of this Directive.

Will the NO_x reduction affect products?

It should not affect the products, but may affect product offering from manufacturers. What it will do is ensure that some of the older technologies are withdrawn or modified to ensure compliance.

How does ErP seasonal efficiency differ?

On initial appearance the ErP seasonal efficiency looks to be a lot lower than the current building regulations seasonal efficiency calculation, however when these **minimum** thermal & radiant efficiencies are added into the ErP seasonal efficiency calculator, the approximate results are as follows:-

Gas fired warm air heaters (atmospheric) = 70% (2% below)

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Radiant (unitary) heaters = 71% (3% below)

Therefore, a net increase of approx. 2% will be realised for warm air heaters and 3% for unitary radiant heaters manufactured 1st January 2018 onwards.

As mentioned before, ErP seasonal efficiency is calculated differently and produces a different result. A figure that is far lower than those previously used in the NCM tool (i.e SBEM), therefore please ensure that the relevant seasonal efficiency figure is entered when carrying out your calculations.

Remember, the seasonal efficiency shown by manufacturers on websites, technical manuals & sales brochures post 2018 will be ErP seasonal efficiency.

To summarise;

- Seasonal Efficiency will be calculated differently (to include electrical power consumption). The current minimum seasonal efficiency would be 70% for Warm Air and 71% for Radiant, if we applied this calculation to our existing Building Regulations requirements.
- ErP Lot 21 (Warm air heaters) max NOx levels comes into effect September 2018.

For more information please visit www.nortek-erp.com or email erp@nortek.com

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