

R32 REFRIGERANT - THE NEXT PHASE

WHAT YOU NEED TO KNOW

BACKGROUND

R22 is now banned. Its replacement R410a is now the most common refrigerant used in air conditioning, but is now subject to a phase-down programme due to its high global warming potential (GWP). R32 has been identified by most manufacturers as the preferred replacement to R410a.

LEGISLATION

The amended F-Gas Regulations came into force from 1st January 2015. As with the previous regulations, it covers the containment, control of use, maintenance and reporting of HFC's, but goes further in the requirements for leak checking and introduces a timetable for production phase down of HFC's based on their GWP - the higher the GWP, the more accelerated the phase down.

PHASE-DOWN PERIOD

Small AC systems (with less than 3kg of R410a) will be prohibited for 2025, larger systems (40 kW) from 2022.

IN PRACTICE...

This means that (larger) manufacturers have already stopped making R410a systems for small single room applications, and will soon stop making larger VRV/VRF systems. It also means that availability of R410a refrigerant will drop off, thereby increasing servicing costs.

THE DIFFERENCE BETWEEN R410a and R32

R410a has a GWP of 2,088 which means it releases >2,000 times more greenhouse emissions than CO₂.

R32 has a GWP of 675, so it is considerably more environmentally friendly.

R32 is classified as mildly flammable as defined by the Refrigerant Designation and Safety Classification ISO 817:2014 Class 2L. Research shows that in the event of a leak, the concentration would be too low at the point where the velocity is low enough for the gas to ignite.



R22: BANNED



R410a: IN PHASE DOWN

2022 - larger systems

2025 - smaller systems



**R32: PREFERRED
REPLACEMENT TO R410a**

INSTALLATION CONSIDERATIONS

Engineers should update training with specific knowledge in transporting and handling mildly flammable refrigerants, plus size limitations regarding system charge (in line with EN378-1:2008) should be included within revised design guides.

RECORD KEEPING

All F Gas Registers should now incorporate equivalent tonnes of CO₂ emissions, variable in respect of refrigerant type and quantity, to demonstrate to the customer the overall carbon impact. This is not a regulatory requirement within revised design guides.

MAINTENANCE CONSIDERATIONS

Frequency of leak checking is now amended in the updated F Gas Regulations, and is now based on equivalent CO₂ emissions rather than on refrigerant charge. F Gas Registers should be amended to reflect this, plus all equipment should be labelled with the CO₂ emissions in tonnes.

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