Case Study
The implementation of the F-Gas regulation in Slovakia

The purpose of this case study is to show how Slovakia has implemented the F-Gas regulation’s requirements, especially with regard to data requirements for refrigerant leakage.

Background:

The F-Gas Regulation (EC) No 842/2006 of 17 May 2006 and the subsequent regulation No 1516/2007 of 19 December 2007 impose standard leakage checking requirements for stationary refrigeration, air conditioning and heat pump equipment containing certain fluorinated greenhouse gases. In Slovakia, the Slovak Association for Cooling and Air-conditioning Technology (SZ CHKT) is in charge of certifying companies who fulfil the following conditions:

- Competent staff;
- Required technical equipment;
- Systematic declaration of amounts of refrigerants in store, used, recovered, reclaimed, disposed of.

Service engineers need a simple and quick survey of:
- Customers and their cooling circuits
- Details of all inspections, maintenance work and repairs
- Printing of labels, agenda of carried out inspections, repairs
- Data analyses and reports.

Current system:

The SZ CHKT has put in place a fully electronic logbook to be able to use the available data faster and more efficiently. In accordance with the F-Gas Regulation, the following information needs to be included in the logbook:

- Details of all maintenance work and repairs;
- Quantities and kind of refrigerant charged on each occasion, and quantities transferred from the system on each occasion;
- Results of a possible analysis of the re-used refrigerant;
- Source of re-used refrigerant;
- Changes and replacements of components of the system;
- Results of periodic routine tests;
- Significant periods of non-use.

Direct leakage testing (at least one parameter needs to be included in the logbook):

- Check of circuits and components representing a risk of leakage with gas detection devices adapted to the refrigerant in the system;
- Application of ultraviolet (UV) detection fluid or suitable dye in the circuit;
- Proprietary bubble solutions/soapsuds.

Indirect leakage testing (at least one parameter needs to be included in the logbook):

- Visible oil leakage, bubbling, deformation, corrosion, vibration, ...
- Pressure; Temperature; Compressor current;
- Liquid levels; Recharge volume.
SZ CHKT also issues a label which informs about the company who carried out the leakage test and the date when it was done.

Two different kinds of labels: the left one shows a general label with information on the certified company and certified person, the one on the right shows a more detailed label printed for a particular cooling circuit with information on the kind of refrigerant used and the calculated annual leakage.

**Reporting for F-gases and heat pumps:**

Every year in January each certified company is requested to log in to the website of the Slovakian notified body to report the collected data either by transferring the data from the leakage logbook to the website or by directly introducing it in the relevant fields on the website.

The notified body then publishes the annual statistics, including the amount of new refrigerants imported to Slovakia and the overall consumption of refrigerants in the country, classified by refrigerants, as shown in the following example:

This system works not only for F-gases, but also for the certification of heat pump installers and companies. Companies can be certified on the basis of employed certified heat pumps installers according to EHPA rules. After having reported data, certified companies have access (via their ID and password) not only to their but to all regularly reported, calculated data.