

## **New test specification for Handling fluorinated gases and ozone-depleting substances (category I personnel)**

**2079-101  
6187-230  
7189-209**

As part of a recent review of the existing Evolve banks for the unit 'Handling fluorinated gases and ozone-depleting substances (category 1 personnel)', which forms part of the 2079, 6187 and the new 7189 qualifications, we are updating the test specification to match the unit content to ensure better clarification for centres and learners.

**Please note that we are not adjusting the distribution of questions in the tests, nor are we changing the pass mark or the time allowed to take the test.**

The change is to ensure that the score report sections that learners see once they have completed the test are the same as the learning outcomes in the QCF unit as published in our handbooks. This is in line with other City & Guilds on-line multiple choice tests. The new score reports will show five sections, one for each of the five unit learning outcomes.

- 01 Be able to identify basic systems, terms, principles, units and how these relate to theory and thermodynamics of vapour compression cycles and refrigerants.
- 02 Be able to identify the causes and effects of global warming and climate change.
- 03 Be able to identify causes and effects of ozone depletion.
- 04 Be able to identify stationary refrigerant, air conditioning and heat pump system components, functions and leakage risk.
- 05 Be able to identify hazard and safe working practices for installation, commissioning and handling of refrigerants.

A mapping document can be found below which shows how the current test section areas match the unit's assessment criteria and also the new test specification.

**Test spec 2079-101, 6187-230, 7189-209 Handling fluorinated gases and ozone-depleting substances (category 1 personnel)**

**Time: 80 minutes**

**No of question: 40**

**Grading: Pass/fail only**

QCF Unit		Old test section areas	number of questions in test
Outcome	Assessment Criteria		
01 be able to identify basic systems, terms, principles, units and how these relate to theory and thermodynamics of vapour compression cycles and refrigerants	01.01 Identify the standard units relating to category I systems	01.01	11
	01.02 Identify the terms and principles of basic theory/thermodynamics that relate to category I systems (basic vapour compressions cycle, key terms and P-h diagrams)	01.02	
	01.02 Identify the terms and principles of basic theory/thermodynamics that relate to category I systems (function of compressor, condenser, expansion device and evaporator)	01.03	
	01.02 Identify the terms and principles of basic theory/thermodynamics that relate to category I systems (condition/state of refrigerant by use of a refrigerant comparator or service gauge)	01.04	
	01.02 Identify the terms and principles of basic theory/thermodynamics that relate to category I systems (reasonable operating conditions for a condenser and evaporator for a range of applications)	01.05	
	01.02 Identify the terms and principles of basic theory/thermodynamics that relate to category I systems (features of zeotropic blends)	01.06	
02 be able to identify the causes and effects of global warming and climate change	02.01 Identify the stated causes of climate change	02.01	8
	02.02 Identify how the Kyoto Protocol aims to reduce the effect of greenhouse gas emissions		
	02.03 Identify direct and indirect Global Warming Potential (GWP) of the common hydrofluorocarbon (HFC) and hydrocarbon (HC) refrigerants	02.02	
	02.04 Identify the importance of energy efficiency on greenhouse gas	02.03	

	emissions to atmosphere		
	02.05 Identify the basic requirements of Regulation (EC) No 842/2006 and other relevant regulations	02.04	
	02.06 Identify the equipment records/commissioning data requirements of Regulation (EC) No 842/2006 and all appropriate regulations and standards.	03.01	
03 be able to identify causes and effects of ozone depletion	03.01 Identify Ozone Depletion Potential (ODP) of hydrochlorofluorocarbon (HCFC) refrigerants	10.01	2
	03.02 Identify the effect of chlorine on ozone depletion		
	03.03 Identify the basic requirements of Regulation (EC) 2037/2000	10.02	
	03.04 Identify the aims and impact of the Montreal Protocol		
04 be able to identify stationary refrigerant, air conditioning and heat pump system components, functions and leakage risk	04.01 Identify the function of and the role/importance of monitoring system performance for indications that leakage has occurred from equipment (control and line components) relating to category I systems	01.07	14
	04.02 Identify potential leakage points of refrigeration/air conditioning and heat pump equipment	04.01	
	04.03 Identify the requirements and procedures for handling, storage, transportation and disposal of contaminated refrigerant and oil	05.01	
	04.04 Identify the function of stationary refrigeration, air conditioning and heat-pump system equipment (major components)	06.01	
	04.06 Identify the risks of refrigerant release associated with equipment (major, control and line components) (Compressor)		
	04.04 Identify the function of stationary refrigeration, air conditioning and heat-pump system equipment (major components)	07.01	
	04.06 Identify the risks of refrigerant release associated with equipment (major, control and line components) (Condenser)		
	04.06 Identify the risks of refrigerant release associated with equipment (major, control and line components) (Evaporator)	08.01	

	04.04 Identify the function of stationary refrigeration, air conditioning and heat-pump system equipment (major components)	09.01	
	04.06 Identify the risks of refrigerant release associated with equipment (major, control and line components) (Thermostatic expansion valve and capillary tube restrictor)		
	04.05 Identify how the state/condition of equipment (major components) can lead to refrigerant release (Compressor)	06.02	
	04.05 Identify how the state/condition of equipment (major components) can lead to refrigerant release (Condenser)	07.02	
	04.05 Identify how the state/condition of equipment (major components) can lead to refrigerant release (Evaporator)	08.02	
	04.05 Identify how the state/condition of equipment (major components) can lead to refrigerant release (Thermostatic expansion valve and capillary tube restrictor)	09.02	
05 be able to identify hazard and safe working practices for installation, commissioning and handling of refrigerants	05.01 Identify the hazards and safe working practices associated with flame brazing	11.02	5
	05.02 Identify the hazards and safe working practices associated with nitrogen pressure testing	11.03	
	05.03 Identify the hazards and safe working practices associated with refrigerant release	11.01	
			<b>40</b>