Strategic Management Board

ACS.CoDNCO1
SAFETY ASSESSMENT CRITERIA
DOMESTIC TO NON-DOMESTIC
NATURAL GAS & LPG
CORE HEATING

CoDNCO1

Introduction

Tests gas safety competence of those intending to extend domestic heating Natural Gas work range to include non-domestic heating Natural Gas work range.

Work on specific appliances requires appliance assessments (CDGA1; CORT1; CIGA1; CDFE1)

CBs and ACs may adopt Competence and Criteria numbering different to that used in this document.

CB and AC documentation may adopt wording for criteria different to that used in this document, provided the meaning is unaffected.

Comprises:

4. Ventilation
12. Chimneys and flueing.

Range

All gas fittings for non-domestic heating.

Pre-requisites

c/o Core Generic Parts A and B or CCCN1 or CCLNG1
CCN1 or CCLP1 or
QCF or S/NVQ.

Exclusions

Work previously covered in CCN1 or CCLP1.

References and normative documents

MIs.

All relevant documents as listed in the Legislative, Normative & Informative Document List (LINDL), inc.:

- GIUSP
- BS 7967-5
- HSL56.
- IGEM/UP/10 Edition 4

ACS.SMB.003.ACDND identifies Normative Documents that should be held by ACs.

Abbreviations

AC. Assessment Centre
CB. Certification Body
MIs. Manufacturer's/manufacturers' instructions
Ref. Reference.

3. Products and characteristics of combustion

PERFORMANCE CRITERIA			
1.	**Analyse combustion performance:**		
(i)	inspect appliances, chimney and ventilation for obvious signs of damage and factors that may affect combustion performance. Light each appliance		√
(ii)	check OP and heat inputs. Leave appliance on at max. heat input		√
(iii)	check analyser is suitable, correctly assembled and calibrated (BS EN 50379-3 analyser), then zero and purge analyser to MIs, outdoors.		√
(iv)	assemble sample lines and probes and ensure all are free from leaks/damage		√
(v)	correctly position probes for sampling combustion products		√
(vi)	read and record O_2; CO; CO_2; CO/CO_2, as appropriate		√
(vii)	compare readings to MIs and BS EN 7967-5		√
(viii)	if readings are satisfactory, carry out final checks		√
KNOWLEDGE & UNDERSTANDING			
1.	**types of gas analyser for measuring:**		
	• combustion performance		√
	• CO in ambient air (BS EN 50379-3 analyser)		√
	• CO2 in ambient air (BS EN 50379-3 or BS 8494 analyser)		√
2.	**analysing combustion performance:**		
(i)	identifying suspect gas-fired appliances		√
(ii)	dealing with appliances on which a combustion performance test cannot be carried out and those where CO/CO2 ratios exceed those given in MIs or BS 7967-5		√
(iii)	actions when domestic appliances exceed CO/CO2 given in MIs or BS 7967-5		√
(iv)	testing when a new component has been fitted		√
(v)	situations that require variations in test methodology		√
(vi)	dealing with domestic appliances in non-domestic premises		√

4. Ventilation

PERFORMANCE CRITERIA		REF	
1.	calculate free area of selection of air vents and grilles used in heating		√
2.	identify installation of adequate and inadequate ventilation		√
3.	**ventilation of gas fired hot water boilers (BS 6644), direct fired convection air heaters (BS 6230) and overhead radiant heaters (BS 6896):**		
(i)	identify suitable/unsuitable ducted ventilation. Boiler in a basement		√
(ii)	calculate ventilation at high and low level direct to outside air: • Type B boilers in boiler rooms • Type B boilers in enclosures • Type C boilers in enclosures		√
(iii)	calculate flow rate for ventilation for mechanical ventilation: • Type B1 (natural draught boilers) (inlet and extract) • Type B2 (forced draught boilers) (inlet and extract)		√
(iv)	calculate ventilation for overhead radiant heaters Types A and B		√
(v)	calculate natural ventilation for Type B1 and B2 boilers • in heated space with air changes below 0.5 per hour • air heaters in plant rooms, enclosures and heated spaces		√
(vi)	calculate natural ventilation for direct gas fired air heaters in heated spaces		√
KNOWLEDGE AND UNDERSTANDING		**REF**	
1.			
2.	mechanical ventilation installations for appliances/plant of heat input > 1.8 MW		√
3.	safety for balanced compartments		√
4.	ventilator/grille locations/positions for appliances		√
5.	safety interlocks between ventilation fans and gas appliances		√
6.	max. temperature levels within boiler houses (floor, mid-position, ceiling)		√
7.	labels and advisory notices		√
8.	providing combustion and ventilation air for appliances of heat input ≤ 1.8 MW		√
9.	identification and installation of in tumescent air vents		√

12. Chimneys and flueing

KNOWLEDGE AND UNDERSTANDING		REF	
1.	effect of chimney heights on sufficient dilution of combustion products	IGEM UP10 Ed4	√
2.	terminal types and positions for Type B open/natural draught chimneys		√
3.	connecting appliance/equipment flues into main vertical chimneys		√
4.	common natural draught chimney connections to headers for modular boiler systems		√
5.	appliance open flues for gross heat input > 366.4kW (Gross)		√
6.	positioning of room sealed appliance terminals for heat input > 70kW		√
7.	flueing for balanced compartments		√
8.	gas safety controls for mechanically assisted flues		√
9.	appreciation of fan sizing for mechanically assisted flues		√
10.	flue dampers and stabilisers		√
11.			
12.	**fan diluted flues:**		
(i)	discharge points		√
(ii)	CO_2 values for discharge points		√
(iii)	dilution air intakes		√
(iv)	dampers		√
(v)	gas safety controls		√
(vi)	sizing fan and ductwork		√
13.	common flue/chimney construction - suitable materials for large chimneys		√
14.	insulation for large chimneys		√
15.	condensation provisions for large chimneys		√
16.	testing natural draught and pressurized flue systems		√
17.	**HSL56:**		
(i)	Reg.27 Flues 27(1) to (5) inclusive		√
(ii)	Reg.32 Flue Dampers 32 (1)		√
18.	suitable materials and construction for appliance chimneys		√
19.	identify unsafe situation of room sealed flue systems installed within an enclosure without sufficient means of inspection facility		√