



**ACS. NON-DOMESTIC CORE GENERIC PART A
INCLUDING COCNPI 1LS
SAFETY ASSESSMENT CRITERIA
INITIAL & RE-ASSESSMENT
NATURAL GAS & LPG
CORE**

Introduction

Tests the gas safety competence of an operative in common core areas of non-domestic gas work.

Comprises:

1. Gas safety legislation and Standards
2. Gas emergency actions and procedures
5. Installation of pipework and fittings
6. Tightness testing and purging (Natural Gas installations of total IV $\leq 0.035 \text{ m}^3$)
8. Unsafe situations, use of emergency notices and warning labels for pipework
9. Operation and positioning of emergency isolation controls and valves.

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

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

Range

Generic non-domestic common core areas.

Pre-requisites**Initial**

None.

Re-assessment

ND Core Generic Part A.

References and normative documents

MIs.

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

- HSL56
- GIUSP
- IGEM/UP/16 Communication 1756
- IGEM/UP/1B Edition 3

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

Abbreviations

AC. Assessment Centre
 AIV Appliance Isolation Valve
 AECV. Additional emergency control valve
 CB. Certification Body
 CSST. Corrugated stainless steel tube
 ECV. Emergency control valve
 I. Initial
 IV. Installation volume
 LDF. Leak detection fluid
 MIs. Manufacturer's/manufacturers' instructions
 MIV. Meter inlet valve
 MOP. Maximum operating pressure
 OQ. Oral questioning
 Ref. Reference.

1. Gas safety legislation and Standards

| KNOWLEDGE & UNDERSTANDING | REF | I | R |
|--|-----|---|---|
| 1. HSL56: | | | |
| (i) Reg. 2 Gen. interpretation and application (1),(2),(3),(4),(5)c(iii),(6),(7),(8) | | √ | |
| (ii) Reg. 3 Qualification and supervision 3 (1),(2),(3),(5),(6),(7) and (8) | | √ | |
| (iii) Reg. 4 Duty on employer | | √ | |
| (iv) Reg. 5 Materials and workmanship 5 (1) to (3) | | √ | |
| (v) Reg. 6 General safety precautions 6 (1) to (9) | | √ | |
| (vi) Reg. 7 Protection against damage 7 (1) to (3) | | √ | |
| (vii) Reg. 8 Existing gas fittings 8 (1) to (3) | | √ | |
| (viii) Reg. 25 Interpretation of Part E | | √ | |
| (ix) Reg. 35 Duties of employers and self-employed persons | | √ | |
| (x) Use of anti-fluctuators and valves regulation 38 (1) to (4) | | √ | |
| 2. Education (School Premises) Regulations. Ventilation rates | | √ | √ |

2. Gas emergency actions and procedures

| KNOWLEDGE & UNDERSTANDING | REF | I | R |
|--|-----|---|---|
| 1. priorities of actions and responsibilities: | | | |
| (i) action to stop a gas escape downstream of an ECV | | √ | √ |
| (ii) action if gas continues to escape after turning off supply | | √ | √ |
| 2. limits of flammability | | √ | |
| 3. specific gravity and its effect in relation to air | | √ | |
| 4. hazardous ignition sources and their elimination | | √ | √ |
| 5. preventing/reducing dangerous concentrations of gas in atmosphere | | √ | √ |
| 6. advice to occupants | | √ | |
| 7. HSL56. Reg. 37 Escape of gas. 37 (1) to (4), (7) and (8) | | √ | |

5. Installation of pipework and fittings. Range of pipe sizes: ≤ 50 mm diameter

Operatives may also install installation pipework of diameter ≤ 35 mm (copper) R1¼ (steel) and volume ≤ 0.035 m³. Diameters in excess of these are covered in ICPN1.

| PERFORMANCE CRITERIA | REF | I | R |
|---|-----|---|---|
| 1. join steel pipe using appropriate fittings, methods and agents | | √ | |
| 2. join copper tube using capillary end feed fittings, methods and agents | | √ | |
| 3. join copper tube using compression fittings methods and agents | | √ | |
| 4. use temporary continuity bond correctly | | √ | |
| 5. check work carried out is gas-tight (CC6 may be assessed at this point) | | √ | |
| 6. purge pipework of air | | √ | |
| 7. identify pipework safety defects | | √ | √ |
| KNOWLEDGE & UNDERSTANDING | | | |
| 1. copper pipe and fittings | | √ | |
| 2. steel pipe and fittings | | √ | |
| 2(a) labelling CSST in educational establishments | | √ | √ |
| 3. copper to steel connections | | √ | |
| 4. restrictions on use of PE and PVC pipework | | √ | |
| 5. flexible and plug-in connectors, inc. for educational establishments | | √ | √ |
| 6. jointing and cleaning agents for copper and steel | | √ | |
| 7. pipe supports, clips and fixing for copper and steel | | √ | |
| 8. sleeving | | √ | √ |
| 9. precautions when using an exposed flame for soldering joints on pipework previously containing gas and/or when a gas meter is already fitted | | √ | |
| 10. restrictions on use of union and compression fittings | | √ | |
| 11. main equipotential bonding | | √ | √ |
| 12. effects of vibration from appliances and equipment | | √ | √ |
| 13. siting and installing gas controls and isolation valves, inc. for educational establishments | | √ | √ |
| 14. making and breaking gas connections on appliances | | √ | |
| 15. pipe sizing to appliance/equipment requirements – inc. theoretical exercise | | √ | √ |
| 16. HSL56: | | | |

| | | | | |
|-------|--|--|---|---|
| (i) | Reg. 10 Maintaining electrical continuity | | √ | |
| (ii) | Reg. 18 Safe use of pipes 18 (1) and (2) | | √ | |
| (iii) | Reg. 19 Enclosed pipes 19 (1) to (6) | | √ | |
| (iv) | Reg. 20 Protection of buildings | | √ | |
| (v) | Reg. 22 Testing and purging of pipes 22 (1) to (3) | | √ | |
| (vi) | Reg. 23 Marking of pipes 23 (1) and (2) | | √ | |
| 17. | Awareness of Hazardous Area Classification | | √ | √ |
| 18. | minimum distance required between gas pipes & the building | | √ | √ |
| 19. | requirements for ducts purposely designed to contain gas pipes | | √ | √ |

6a. Tightness testing and purging. Total IV ≤ 0.035 m³ (LP)

Up to 1¼ (steel) and/or 35 mm (copper)

| PERFORMANCE CRITERIA | | REF | I | R |
|---------------------------|--|-----|---|---|
| 1. | testing new or existing installations with gas or air: | | | |
| (i) | visually inspect the installation to ensure joints made correctly and no open ends | | √ | √ |
| (ii) | check appliances and ensure AIVs are open | | √ | √ |
| (iii) | turn off the gas installation at the appropriate valve | | √ | √ |
| (iv) | connect the pressure gauge to a suitable pressure test point on the installation or, if testing with air, branch of test T-piece | | √ | √ |
| (v) | if using gas, carry out a let-by test of the closed supply control valve | | √ | √ |
| (vi) | adjust the pressure to between 7 and 10 mbar. | | √ | √ |
| (vii) | close the valve and note the gauge reading | | √ | √ |
| (viii) | test for 1 minute. If pressure rises by more than 0.25 mbar, let-by may be occurring | | √ | √ |
| (ix) | if pressure rise is observed, check valve by disconnecting its outlet union and applying LDF to valve barrel (OQ) | | √ | √ |
| (x) | on satisfactory completion of let-by test, slowly raise the pressure in the installation to between 20 and 21 mbar | | √ | √ |
| (xi) | turn off gas or air supply | | √ | √ |
| (xii) | allow 1 minute stabilisation; if necessary re-adjust pressure to between 20 and 21 mbar | | √ | √ |
| (xiii) | check for any perceptible movement (fall) of the gauge over the next 2 minute period | | √ | √ |
| (xiv) | for new installations, or existing installations with no appliances connected check there is no pressure drop | | √ | √ |
| (xv) | for existing installations, check any pressure drop is within permissible values and there is no smell of gas | | √ | √ |
| (xvi) | if installation fails test, trace and repair escape and re-test installation | | √ | √ |
| (xvii) | if tightness test is successful, remove pressure gauge and re-seal test point | | √ | √ |
| (xviii) | when connected to gas, test pressure test point; ECV/AECV outlet connection; regulator connections and, where appropriate, MIV connections with LDF | | √ | √ |
| (xix) | purge installation | | √ | √ |
| (xx) | record test results | | √ | √ |
| 2. | locate and repair a gas escape | | √ | √ |
| KNOWLEDGE & UNDERSTANDING | | REF | I | R |
| 1. | selection and reading of pressure gauges | | √ | √ |
| 2. | allowed pressure drops for existing installations related to meter size/type, pipe diameter and IV with appliances connected to gas supply and not isolated inc. E6, U6/G4, U16/G10 and where no meter is fitted | | √ | √ |
| 3. | identify no perceptible movement on gauge (0.25 mbar water gauge and 0.2 mbar electronic gauge reading to 1 decimal place) | | √ | √ |
| 4. | allowed pressure drop for existing installation, inc. ECV but no meter is installed e.g. flat where supply is not individually metered | | √ | √ |
| 5. | dealing with ECV/AECV/MIV that is letting by | | √ | √ |
| 6. | actions when smell of gas persists (a) after completion of satisfactory tightness test (b) when ECV/AECV/MIV is turned off, or a leaking installation cannot be repaired | | √ | √ |
| 7. | testing pipework of diameter > 35 mm or total IV > 0.035 m ³ | | √ | √ |
| 8. | testing prior to alteration or extension to existing installations | | √ | √ |
| 9. | acronyms and symbols | | √ | √ |
| 10. | calculating IV and PV exercise for E6, U6 and G4 meters connected to 35 mm diameter pipework and U16 meters connected to any pipework of diameter ≤ 35 mm | | √ | √ |
| 11. | purging installations of IV ≤ 0.02 m ³ and those of IV > 0.02 m ³ | | √ | √ |
| 12. | | | | |

6b. Tightness testing and purging. Total IV ≤ 0.035 m³ (MP)

Up to 1¼ (steel) and/or 35 mm (copper)

| PERFORMANCE CRITERIA | REF | I | R |
|--|-----|---|---|
| Tightness testing existing NG installations for 75mbar <MOP ≤ 2bar without a MIV (IGE/UP/1B Edition 3 Appendix 4 A4.3) | | | |
| 1. turn off the gas installation at the ECV | | √ | √ |
| 2. connect the pressure gauge to a suitable pressure test point on the installation | | √ | √ |
| 3. carry out a let-by test of the closed ECV as follows: | | √ | √ |
| (i) adjust the pressure to between 7 and 10 mbar | | √ | √ |
| (ii) operate the UPSO or excess flow valve reset to balance the pressures either side of the device, then allow it to re-shut | | √ | √ |
| (iii) close the ECV and note the gauge reading | | √ | √ |
| (iv) check for any perceptible movement (rise) of the gauge reading (>0.25 mbar) over the next 1 minute period | | √ | √ |
| (v) if ECV is letting-by the test is suspended, installation made safe and the appropriate Gas Emergency Service Call Centre immediately notified (OQ) | | √ | √ |
| 4. Slowly raise the pressure in the installation to between 18 and 19 mbar by opening the ECV then turn off the valve | | √ | √ |
| 5. Allow 1minute for temperature and pressure stabilisation, if necessary re-adjust the pressure to between 18 and 19 mbar (the test shall not proceed until a stable reading is obtained) | | √ | √ |
| 6. Continue test as from 6a) 1 (xiii) to (xx) | | √ | √ |

8. Unsafe situations, use of emergency notices and warning labels (for pipework)

* These criteria are PC for re-assessment.

| PERFORMANCE CRITERIA | REF | I | R |
|---|--|---|---|
| 1. identify unsafe situations as ID & AR | | √ | √ |
| 2. identify defective installation(s) and label | | √ | √ |
| 3 | | | |
| KNOWLEDGE & UNDERSTANDING | | | |
| 1. explain dealing with ID | Fig 1 & 6.1 GIUSP Edition 7.1 | √ | √ |
| 2. explain dealing with AR | Fig 1 & 6.2 GIUSP Edition 7.1 | √ | √ |
| 2a explain dealing with AR installations/appliances when turning off does not remove the risk | Fig 1 & 6.2.2 GIUSP Edition 7.1 | √ | √ |
| 3 explain dealing with situations that do not meet current standards but are not unsafe | Foreword GIUSP Edition 7.1 | √ | √ |
| 4. identify correct notices and labels to be used: | | | |
| (i) | | | |
| (ii) warning notice forms | | √ | |
| (iii) advisory notices – electrical bonding* | | √ | √ |
| 5. explain RIDDOR reporting to HSE | | √ | √ |
| 6. HSL56. Reg.34 (1) – (3) | | √ | |
| 7. GIUSP: | | | |
| (i) | | | |
| (ii) overall scope | | √ | √ |
| (iii) gas incidents | | √ | √ |
| (iv) non-domestic installations | | √ | √ |

9. Operation and positioning of emergency isolation controls and valves

| KNOWLEDGE & UNDERSTANDING | REF | I | R |
|--|-----|---|---|
| 1. emergency isolation valves | | √ | √ |
| 1a types of isolation valves used in multi-occupancy meter installations (AECV's etc.) | | √ | √ |
| 2. emergency controls for inside meter positions | | √ | √ |
| 3. emergency controls for outside meter positions | | √ | √ |
| 4. types of automatic isolation valves | | √ | √ |
| 4(a) awareness of need to refer to special requirements for automatic isolation valves in educational establishments | | √ | √ |

| | | | |
|---|--|---|---|
| 4(b) awareness of need to refer to special requirements for isolation, heat, fire, gas and CO detection systems in boiler/plant rooms in educational establishments | | √ | √ |
| 5. HSL56. Reg. 9 (1) to (4) | | √ | |