

MARCOGAZ/GCI-UICP Position Paper European Scheme for the Qualification of Gas Installers

Introduction

This document has been prepared by a common group of experts from Marcogaz (*Technical Association of the European Natural Gas Industry*) and GCI-UICP (*Union of Heating, Ventilation, Air-conditioning, Roofing and Plumbing Contractors, representing the European gas installers*).

These two organisations intend to contribute to the European harmonisation of qualification rules for gas installers in order to facilitate their free access to the internal market.

In this context the existing high safety level of gas installations shall be maintained.

Moreover gas installers shall be able to cope with new technologies to meet the upcoming requirements in terms of energy efficiency and reduction of emissions.

Context

Domestic and commercial gas installations safety has always been a major point for the Gas Industry, specialised gas professionals, authorities and customers/users. During the past decades, strict safety rules, prevention measures and continuously improved competence of installers have contributed to lower incident/accident rates considerably. Safety records regarding the statistics on incidents are very satisfactory as shown by the Marcogaz data collection made since 1995 (See annex A). However, despite all precautionary measures taken, every incident that occur is still an incident too much.

Nevertheless developments in the European energy policy have rendered this issue more complex and new factors should be henceforth considered new constraints.

Against the background of several European Energy policies targeting the reduction of green house gases, principally CO₂ emissions, and improving energy efficiency, a set of directives have been enacted which could impact on the gas installations safety.

It is expected that the gas installers will be subjected to possibly increasingly contradictory requirements since:

- Wider variations of the distributed gas quality characteristics will be seen in Europe

- More stringent energy efficiency performances and emissions (GHG, pollutants) reduction will be requested for gas appliances.

Improvement in burning gaseous fuels, new technologies (e.g. micro-cogeneration, gas heat pumps) and combination with renewable sources (e.g. solar, biogas) are appropriate tools for reaching these objectives.

EU Directives

Relevant directives impinging on gas installations cover on one hand environment and on the other, the free circulation of workers in the EU Countries:

- The framework of Eco-design/Labelling Directives (2009/125/EC – 2010/30/EU) set the bar high for products in terms of efficiency and emissions, to such an extent that in the future only the most efficient gas appliances such as condensing boilers (possibly connected to solar collectors), heat pumps and micro-co-generation will be installed.
- The Energy Performance of Buildings Directive (2010/31/EU) focuses on a balance between the building insulation and the system heating/cooling/hot water for which the regulating performance and again efficiency are the significant parameters. Additionally it should include integrated skills requirements to specialised professionals who, beyond the appliance itself, will have to consider the regulating system in accordance with the terms of the Directive.
- The Directive on Services in the Internal Market 2006/123/EC stipulates that a regulated professional such as a gas installer shall not be hindered to work in any Country but by applying the rules of it. It means the acceptance is conditional upon an array of requirements, from skills over training proven experience up to languages knowledge.
- The Professional Qualification Directive (2005/36/EC) allowing for recognition of qualifications of regulated professions when relocating in another Member State, is currently being modernised.

National Rules and Legislation

It has first to be acknowledged that the gas installation rules are not subject to any harmonisation at EU level. Consequently extent and depth of inspection procedures differs from one Country to another, mandatory or not.

Nevertheless general common safety principles are the basis for national regulations..

All responsible bodies and safety authorities concur in the necessity to ensure safe installations which are submitted to technical specifications and codes of practice as well as qualification and training schemes for installers, the latter being identified as a key-issue.

A mutually recognisable European Competency Framework is therefore strongly needed which would encompass all elements of the required knowledge:

- gas characteristics, gas risks (leakage, explosion, fire, CO poisoning, design, construction and maintenance of the whole gas installation,
- ability/experience to use national/local regulations,
- language of the Country concerned).

General principles for safety of gas installations

Main risks due to use of gas in domestic dwellings are:

1. explosion or inflammation of unburned gas released and accumulated indoor in dangerous quantities;
2. fire caused by inflammation of gas appliances themselves or by overheating of flammable materials placed in the vicinity of gas appliances;
3. intoxication by harmful substances for health contained in the products of combustion and spread in dangerous quantity in the indoor air;
4. burn due to contact with hot surfaces of appliances.

First safety and proper function can only be assured if gas appliances are chosen and/or properly converted in accordance with the manufacturer's instructions in order to match the local gas quality and supply pressure.

"Unburned gases" risk (1) is mainly taken in account:

- by design, construction and use of gas installations in conformity with EN 1775 or the national standards implementing it;
- by installation and use of gas appliances which conforms to 2009/142/EC Gas Appliances Directive.

"Fire" risk (2) and "burn" risk (4) are mainly taken in account by pipework construction in accordance with EN 1775¹ and use of gas appliances which conform to 90/396/EC Gas Appliances Directive in accordance with their intended purposes and with the manufacturer's instructions. Nevertheless the present document contains recommendations about the rooms and places where the different kinds of gas appliances shall be installed and used.

"Intoxication" risk (3) is the main risk to take in account when designing, constructing and using a gas installation as Accident Records clearly place CO poisoning as the main cause of deaths and casualties. It is taken into account:

- by installation and use of gas appliances which conform to 2009/142/EC Gas Appliances Directive in accordance with their intended purposes and with the manufacturer's instructions;
- by installing and using gas appliances in such a way that they are properly supplied with combustion air;
- by installing and using gas appliances in such a way that products of combustion are properly evacuated to the outside.

Proposals and Conditions for a European Competency Framework

General

The Directive 2005/36/EC on the recognition of professional qualification does not deal

¹ EN1 1775 – Gas supply – Gas pipework for buildings – Maximum operating pressure less than or equal to 5 bar – Functional recommendations

directly with gas provisions, so generating the necessity of gas-specific completion.

The provisions laid down in a European Competency Framework shall be set as a minimum professional skill requirements to be fulfilled by any gas installer in the EU, irrespective of the Country of origin or destination. This competence level should be guaranteed by a valid attestation accepted across the borders. The attestation shall include and display clearly the general principles for safety of gas installations mentioned above.

The European Competency Framework shall also consist of describing and updating transparently the national/regional/local rules, along with pledging the free circulation of installers, and pointing out that mutual recognition shall not lower the safety level of gas installations.

Some European tools have been developed to foster harmonisation regarding the design of the installation. As a prime example, the basic technical tasks to be performed by installers are listed in EN 1775:2007.

The CEN/TR 1749² establishes a classification of the appliances in accordance with the type of evacuation of combustion products, enabling so to evaluate the proper balance between combustion and ventilation. The CEN/TR on Safety of Gas Installations - Recommendations in preparation will encompass the generic principles guaranteeing the safe operation of appliances. These tools may also be included in the European Competency Framework.

Professional Knowledge

- Gas installers shall be duly trained and qualified in order to demonstrate their knowledge related to:
 - Welding/soldering, assembling;
 - Appliance installation, commissioning, maintenance and repair;
 - Purging, tightness and combustion testing, heating and hot water production and distribution;
 - Combustion of gas fuels;
 - Gas qualities, gas supply pressures, appliances categories and conversion/adjustment to local conditions according to manufacturer's instructions;
 - Types of gas appliances according to the method of evacuation of the combustion products and the supply of combustion air;
 - Pipework installation;
 - Technology of gas appliances;
 - Safety devices;
 - Ventilation, combustion air supply and evacuation of the combustion products;
 - Heat emission and regulation;
 - Tests and commissioning of gas installations;
 - Local codes and regulations.

Role of the Gas Distribution System Operator (DSO)

The DSO is equally part of the process as he is responsible for the gas supply at the

² CEN/TR 1749 – European scheme for the classification of gas appliances according to the method of evacuation of the combustion products (types)

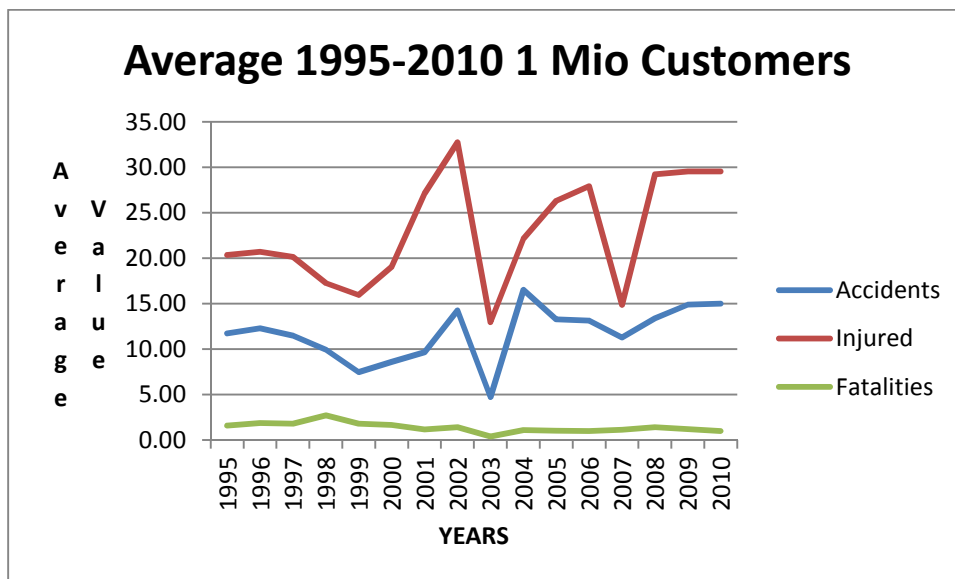
delivery point, representing so the interface. Although not responsible for the internal gas installation, in most of the EU Countries he is in charge of authorising the gas release. Moreover the conformity assessment of the installation occurs mostly in partnership: DSO, installer, appliance manufacturer, inspection bodies in some cases, who also have to provide all needed information to the installation owner.

Mutual Recognition (bilateral or multilateral)

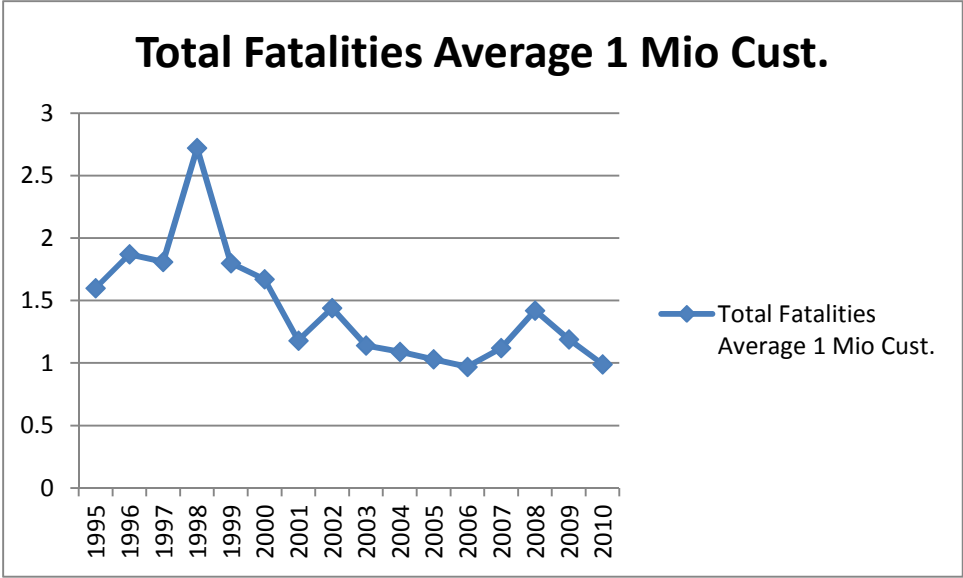
The existing bilateral agreements between Regional Authorities or Authorised Organisations in some Countries could pave the way for multilateral ones or better, a European "mutually recognised qualification system, provided the aforesaid conditions are fulfilled according to a safety and energy performance level as high as possible.

Any mutual recognition system should not lead to lower the current safety level of gas installations.

ANNEX A: Example of MARCOGAZ statistics on incidents/accidents related to the gas installation



Ratio of accidents/injuries/fatalities to 1 million customers for each year from 1995 to 2010 – AVERAGE FATALITIES: 1,39 per 1 million Customers



Evolution of fatalities over the years (ratio to nb of customers)