NBGA-Open, Guidances relating to the Regulation (EU) 2016/426 (V5, October 2025)

A. Interpretations relating to the articles of the Regulation (EU) 2016/426

B. Interpretations relating to the Essential Requirements of the Regulation (EU) 2016/426 (Annex I)

C. Interpretations relating to the procedures of the Regulation (EU) 2016/426 (Annex II)

C8	Indication of gas group, type of gas and the appliance category for H2NG appliances.	62

* = new in version 5 (V5)

Gas Appliances Regulation ((EU) 2016 / 426)	
GUIDANCE A 1	**Approved by WG-GA** Y

Guideline related to:

CHAPTER	**I**	**Scope, placing on the market and free movement**
Article	**1**	
Paragraph	**1**	
Subject	**Appliances and fittings covered by the Regulation**	

Article 1

1. This Regulation applies to appliances and fittings.

2. For the purposes of this Regulation, an appliance is considered to be 'normally used' where the following conditions are met:

- *(a) it is correctly installed and regularly serviced in accordance with the manufacturer's instructions;*
- *(b) it is used with a normal variation in the gas quality and a normal fluctuation in the supply pressure as set out by Member States in their communication pursuant to Article 4(1);*
- *(c) it is used in accordance with its intended purpose or in a way which can be reasonably foreseen.*

3. This Regulation does not apply to appliances specifically designed:

- *(a) for use in industrial processes carried out on industrial premises;*
- *(b) for use on aircrafts and railways;*
- *(c) for research purposes for temporary use in laboratories. For the purposes of this paragraph, an appliance is considered to be 'specifically designed' when the design is only intended to address a specific need for a specific process or use.*

4. Where, for appliances or fittings, the aspects covered by this Regulation are covered more specifically by other acts of Union harmonization legislation, this Regulation does not apply or ceases to apply to such appliances or fittings in respect of those aspects.

5. The rational use of energy essential requirement laid down in point 3.5 of Annex I to this Regulation does not apply to appliances covered by a measure adopted pursuant to Article 15 of Directive 2009/125/EC.

6. This Regulation shall not affect the obligation upon Member States to adopt measures with respect to the promotion of the use of energy from renewable sources and to the energy efficiency of buildings, in accordance with Directives 2009/28/EC, 2010/31/EU and 2012/27/EU. Such measures shall be compatible with the TFEU.

Reference: (EU 2016/426 "Gas Appliances Regulation" O.J. L81/99 31.03.2016, p.99
Source of guidance document: NBGA-Open

Doc. Number	Rev. Number	Approved by NBGA-Open	Approved by WG-GA	Withdrawn
A1	1	08-10-2019	03-06-2021	--

Question

Which appliances and fittings are considered as covered by the Gas Appliances Regulation (GAR)?

Discussion

The GAR gives product categories, which are within the scope, but does not contain list of specific products covered.

However, in order to facilitate judgement whether an individual product is covered by the Regulation, an illustrative list has been drawn up by all parties concerned.

A note to the list explains the meaning of some wording used.

Furthermore, some specific elements of certain product categories are clarified on separate Guidance Sheets.

Note

Attention is drawn to the fact that the term fitting as used by industry is generally broader than the term fitting as defined in the Regulation.

Conclusion

See the following illustrative list which is non-exhaustive and will be amended as necessary. As example and for clarification, a list of certain exceptions is also shown in each section.

Note

1. *The Gas Appliances Regulation covers appliances used for:*
   - *cooking*
   - *refrigeration*
   - *air-conditioning*
   - *space heating*
   - *hot water production*
   - *lighting*
   - *washing*

   and forced draught burners and suitable heating bodies to be equipped with such burners

2. *The Gas Appliance Regulation covers fittings such as:*
   - *safety devices*
   - *controlling devices*
   - *regulating devices*
   - *sub-assemblies thereof, designed to be incorporated into an appliance or to be assembled to constitute an appliance.*

3. *In the context of the Regulation, each single marketed unit burning gaseous fuel(s) is considered to be an appliance that must meet the requirements of the Regulation.*

4. *The Regulation specifically identifies forced draught burners and heating bodies to be equipped with such burners as appliances.*

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Doc. Number	Rev. Number	Approved by NBGA-Open	Approved by WG-GA	Withdrawn
A1	1	08-10-2019	03-06-2021	--

5. *The items referred to in point 2, having no impact to the safe functionality of the appliance, are not considered to be covered.*

6. *Accessories such as, flue dampers, fanned flue systems and flue systems marketed together with an appliance and the complete appliance is identified with a unique appliance identifier are considered as part of the appliance (see: guidance document number A3).*

APPLIANCES

A. Cooking

- hotplate
- cooker
- barbecue/grill
- baking oven (also in-shop type)
- oven (also in-shop type)
- range
- steamer
- bain marie
- hot cupboard
- boiling table
- grill
- griddle
- toaster
- fryer
- brat and boiling pan
- coffee machine
- wok cooker
- humidifiers (based on the way of heat is generated, the appliance is also used for heating)

Exception:

- factory baking oven

B. Space Heating

- forced draught burner (FDB)
- heating body (to be equipped with FDB)
- gas fire
- convector heater
- decorative fuel effect appliance
- catalytic heater
- air heater with or without ducting
- overhead plaque type radiant heater
- overhead radiant tube heater
- patio heater
- boiler (including district heating)

- heat pump (absorption and compression)
- green house heater
- humidifiers (see under cooking)
- co-generation appliances (where one of the intended uses is space heating)
- fuel cells (where one of the intended uses is space heating)
- steam boiler units

Exceptions:
- blow lamp
- cutting/brazing equipment
- laboratory burner
- incinerator
- greenhouse heater for industrial use

C. Hot water production
- instantaneous water heaters
- storage water heaters
- circulator
- combination boiler
- swimming pool heater
- brat and boiling pan
- bulk water boiler
- cafe boiler
- co-generation appliances (where one of the intended uses is hot water production)
- fuel cells (where one of the intended uses is hot water production)

D. Refrigeration
- refrigerator
- chiller
- deep-freezer
- air conditioning

E. Washing
- wash boiler
- washing machine
- drying cabinet
- tumble dryer
- dish washing machine
- ironing machine

Exception:
- industrial laundry

Reference: (EU 2016/426 "Gas Appliances Regulation" O.J. L81/99 31.03.2016, p.99
Source of guidance document: NBGA-Open

Doc. Number	Rev. Number	Approved by NBGA-Open	Approved by WG-GA	Withdrawn
A1	1	08-10-2019	03-06-2021	--

F. Lighting
- gas lamp
- lighting appliances

FITTINGS

- appliance governor or appliance pressure regulator
- multifunctional control
- solenoid valve
- flame supervision device
- burner control system
- ball valve
- gas cock
- low pressure cut-off valve
- gas tap
- thermostat
- safety overheat thermostat
- flue thermostat
- pressure sensing device
- filter
- igniters

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Reference: (EU 2016/426 "Gas Appliances Regulation" O.J. L81/99 31.03.2016, p.99
Source of guidance document: NBGA-Open

Doc. Number	Rev. Number	Approved by NBGA-Open	Approved by WG-GA	Withdrawn
A1	1	08-10-2019	03-06-2021	--

Gas Appliances Regulation ((EU) 2016 / 426)	
GUIDANCE A 2	**Approved by WG-GA** Y

Guideline related to:

Chapter	**I**	**Scope, placing on the market and free movement**
Article	**1**	
Paragraph	**1**	
Subject	**Gases covered by the Regulation**	

Article 1

1. This Regulation applies to appliances and fittings.

2. For the purposes of this Regulation, an appliance is considered to be 'normally used'where the following conditions are met:

• (a) it is correctly installed and regularly serviced in accordance with the manufacturer's instructions;

• (b) it is used with a normal variation in the gas quality and a normal fluctuation in the supply pressure as set out by Member States in their communication pursuant to Article 4(1);

• (c) it is used in accordance with its intended purpose or in a way which can be reasonably foreseen.

3. This Regulation does not apply to appliances specifically designed:

• (a) for use in industrial processes carried out on industrial premises;

• (b) for use on aircrafts and railways;

• (c) for research purposes for temporary use in laboratories.

For the purposes of this paragraph, an appliance is considered to be 'specifically designed' when the design is only intended to address a specific need for a specific process or use.

4. Where, for appliances or fittings, the aspects covered by this Regulation are covered more specifically by other acts of Union harmonization legislation, this Regulation does not apply or ceases to apply to such appliances or fittings in respect of those aspects.

5. The rational use of energy essential requirement laid down in point 3.5 of Annex I to this Regulation does not apply to appliances covered by a measure adopted pursuant to Article 15 of Directive 2009/125/EC.

6. This Regulation shall not affect the obligation upon Member States to adopt measures with respect to the promotion of the use of energy from renewable sources and to the energy efficiency of buildings, in accordance with Directives 2009/28/EC, 2010/31/EU and 2012/27/EU. Such measures shall be compatible with the TFEU.

Reference: (EU 2016/426 "Gas Appliances Regulation" O.J. L81/99 31.03.2016, p.99
Source of guidance document: NBGA-Open

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A2	**1.04**	**11-10-2022**	**28-04-2023**	**--**

Question

1) Does the regulation apply to appliances that are designed to burn gases that are not yet communicated by Member States pursuant to Article 4(1) or that are not yet included in the appliance categories indicated in the EN 437 ?
2) Would it be legal to exclude certificates for appliances on H2NG or H2 on the sole ground that H2NG or H2 are not mentioned in the EN 437?

Discussion

In Europe pilot projects are taking place to support the use of low carbon gases and gases from renewable sources. These low carbon and renewable gases do not fall in the gas families and gas groups indicated in the EN 437, as they have different burning behaviour.

These pilot projects support for example the use of: raw biogas, hydrogen, admixtures of hydrogen and natural gas (H2NG) , Di Methyl Ether (DME).

Article 2(6) states: *'gaseous fuel'* means "*any fuel which is in a gaseous state at a temperature of 15 °C under an absolute pressure of 1 bar"*.

There is no exception for specific fuels indicated. This means that all gaseous fuels are covered regardless, if they are communicated by Member States or indicated as a gas family, gas group or appliance category in the EN437.

The implies that it is not legal to exclude certificates for appliances burning H2NG or H2 on the sole ground that H2NG or H2 are not mentioned in the EN 437.

Article 4(1) Gas supply conditions states

1. By 21 October 2017, Member States shall communicate to the Commission and the other Member States in accordance with Annex II and using the relevant form the types of gas and corresponding supply pressures of gaseous fuels used on their territory. They shall communicate any changes thereof within six months after the announcement of the envisaged changes.

Before a new type of gas can be used on the territory of a member state, appliances capable of burning this new type of gas safely, must be available and installed.

In general, an efficient transition from an old type of gas to a new type of gas is supported by having appliances installed that are able to burn both the old type of gas and the new type of gas. Member states may advise their citizens well in advance to prepare for a change from one type of gas to a new type of gas by selecting an appliance that is capable to burn both the old and the new type of gas. This may result in a demand for gas appliances capable of burning gases not yet used in the territory of that member state.

According to ER 1.6.3 *"The warning notices on the appliance and its packaging shall clearly state the type of gas to be used, the gas supply pressure, the appliance category and any restrictions on use, in particular the restriction whereby the appliance shall be installed only in areas where there is sufficient ventilation so as to ensure that the risks presented by it are minimised."*

In case an appliance is designed to burn gases that are not yet included in the gas families, gas groups, and appliance categories indicated in the EN437, the type of gas the appliance is suitable for, must be indicated in another way.

Reference: (EU 2016/426 "Gas Appliances Regulation" O.J. L81/99 31.03.2016, p.99
Source of guidance document: NBGA-Open

Doc. Number	Rev. Number	Approved by NBGA-Open	Approved by WG-GA	Withdrawn
A2	1.04	11-10-2022	28-04-2023	--

Conclusion

1. The GAR, covers all gaseous fuels. This includes for example also raw biogas, hydrogen, admixtures of hydrogen and natural gas (H2NG) and Di Methyl Ether (DME) and admixtures of DME and propane.

2. It is not legal to exclude GAR certification for appliances burning any kind of gaseous fuel on the sole ground that they are not mentioned in the EN 437.

3. In case an appliance is designed to burn gases that are not yet included in the gas families, gas groups, and appliance categories indicated in the EN437, the type of gas the appliance is suitable for, must be indicated in another way.

Note:

Member states may advise their citizens well in advance to prepare for a change from one type of gas to a new type of gas by selecting an appliance that is capable to burn both the old and the new type of gas. This may result in a demand for gas appliances capable of burning gases not yet used in the territory of that member state.

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Gas Appliances Regulation ((EU) 2016 / 426)	
GUIDANCE A 3	**Approved by WG-GA** Y

Guideline related to:

CHAPTER	**I**	**Scope, placing on the market and free movement**
Article	**1**	
Paragraph	**1**	
Subject	**Regulators and Connecting hoses used to connect appliances to the fuel source; Other components affecting gas safety**	

Article 1

1. This Regulation applies to appliances and fittings.

2. For the purposes of this Regulation, an appliance is considered to be 'normally used' where the following conditions are met:

• (a) it is correctly installed and regularly serviced in accordance with the manufacturer's instructions;

• (b) it is used with a normal variation in the gas quality and a normal fluctuation in the supply pressure as set out by Member States in their communication pursuant to Article 4(1);

• (c) it is used in accordance with its intended purpose or in a way which can be reasonably foreseen.

3. This Regulation does not apply to appliances specifically designed:

• (a) for use in industrial processes carried out on industrial premises;

• (b) for use on aircrafts and railways;

• (c) for research purposes for temporary use in laboratories. For the purposes of this paragraph, an appliance is considered to be 'specifically designed' when the design is only intended to address a specific need for a specific process or use.

4. Where, for appliances or fittings, the aspects covered by this Regulation are covered more specifically by other acts of Union harmonization legislation, this Regulation does not apply or ceases to apply to such appliances or fittings in respect of those aspects.

5. The rational use of energy essential requirement laid down in point 3.5 of Annex I to this Regulation does not apply to appliances covered by a measure adopted pursuant to Article 15 of Directive 2009/125/EC.

6. This Regulation shall not affect the obligation upon Member States to adopt measures with respect to the promotion of the use of energy from renewable sources and to the energy efficiency of buildings, in accordance with Directives 2009/28/EC, 2010/31/EU and 2012/27/EU. Such measures shall be compatible with the TFEU.

Reference: (EU 2016/426 "Gas Appliances Regulation" O.J. L81/99 31.03.2016, p.99;
Source of guidance document: NBGA-Open

Doc. Number	Rev. Number	Approved by NBGA-Open	Approved by WG-GA	Withdrawn
A3	1	26-03-2019	03-06-2021	--

C. Question

- Are regulators and/or connecting hoses used for connecting an appliance to the fuel source covered by the Regulation?

- Are other accessories affecting gas safety covered by the Regulation?

CI. Discussion

1. Where a regulator and / or a connecting hose used for connecting appliances to form a sub-assembly which is either designed to be incorporated into a CE-marked appliance or to be assembled to constitute a CE-marked appliance the sub-assembly is within the scope of the Regulation.

2. Where a regulator is separately marketed on its own and designed to be incorporated into a CE-marked appliance the regulator is within the scope of the Regulation.

*3. Where a regulator is separately marketed on its own and **not** designed to be incorporated into a CE-marked appliance the regulator is **not** within the scope of the Regulation.*

*4. Where a connecting hose is separately marketed on its own it is **not** a considered as a fitting and therefore **not** in the scope of the Regulation.*

5. The manufacturer of the appliance is responsible for all accessories needed to assemble the appliance as defined in the instruction manuals.

6. The manufacturer of an appliance placed on the market with/without regulator and/or connecting hose is responsible for the instructions to cover the safety aspects concerning installation of the appliance.

7.

CII. Conclusion

Regulators or sub-assemblies consisting of regulators and connecting hoses assembled to each other are only covered by the scope of the Regulation if they are designed to be incorporated in an appliance covered by the scope of the Regulation.

Other accessories affecting the gas safety such as, among others, flue dampers, flue systems and fanned flue systems are only covered by the scope of the Regulation if they are designed to be incorporated in an appliance covered by the scope of the Regulation.

CIII. Note:

It has to be considered that the fuel supply network in each Member State is subject to national legislation. Therefore, there are many different sizes and shaped connectors for connecting to the connector of the fuel supply outlet.

The use of the right connectors is very important for the safety of gas appliances, as inappropriate connectors may give rise to dangerous situations due to gas leaks. It results that the connectors have to be compatible with the characteristics of the gas supply network in each country.

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Reference: (EU 2016/426 "Gas Appliances Regulation" O.J. L81/99 31.03.2016, p.99;
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Doc. Number	Rev. Number	Approved by NBGA-Open	Approved by WG-GA	Withdrawn
A3	1	26-03-2019	03-06-2021	--

Gas Appliances Regulation ((EU) 2016 / 426)	
GUIDANCE B 1	**Approved by WG-GA**
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Guideline related to:

ANNEX	**I**	**Essential Requirements**
Section	**1**	**General Requirements**
Paragraph	**1.1**	
Subject	**Appliances and fittings covered by the Regulation**	

E.R. 1.1.

Appliances shall be so designed and constructed as to operate safely and present no danger to persons, domestic animals or property when normally used.

Question

For heating appliances with accessible flames or incandescent parts there is a potential fire and injury risk where clothing or drapery might accidentally brush against them.

How do the essential requirements address this hazard?

Discussion

It should be reasonably foreseen that persons come close to the appliance with accessible flames.

These appliances represent an increasingly important market, including also mobile appliances.

Essential Requirement 1.1 states that "appliances must be so designed and built as to operate safely and present no danger to persons, domestic animals or property when normally used".

Essential Requirement 1.2 states that "the manufacturer is under an obligation to analysis the risks in order to identify those which apply to his appliance of fitting. He shall then design and construct it taking into account its risk assessment".

Essential Requirement 1.3 states that "the manufacturer shall apply the principles set out below, in the following order:

a) Eliminate or reduce risks as far as possible;
b) Take the necessary protection measures in relation to risks that cannot be eliminated;
c) Inform users of the residual risks.

Essential Requirement 1.4 states that “When designing and constructing the appliance, and when drafting the instructions, the manufacturer shall envisage not only the intended use of the appliance, but also the reasonably foreseeable uses”

– In order to deal in an appropriate way with the risk of access to flames and ensure safety of these appliances, under normal conditions of use, the manufacturer must in the first place deal with this risk by eliminating by design; if this is not feasible then they must take appropriate protective measures (e.g. to fit a fireguard, known in some countries as a dress guard) and any residual risks should be dealt with in the form of warning the user and/or installer. The risk may also be appropriately dealt with by design and instructions for the installer to install the appliance in such a way that it would be safe by position.

– Though it is important that users both read and follow the user instructions provided with an appliance, it is unlikely that user instructions would effectively address the particular hazard addressed here. The hazard being of accidental contact with very hot surfaces or flames by people in the vicinity of the heating appliance.

It would be expected that where appropriate the user instructions would provide guidance to the user of the appliance as to how to provide any additional recommended protection for at risk users as described in various ISO Guides e.g. young children, the older person and persons with disabilities. Such recommendations may include the provision of additional fire guarding by the user. The Warnings shall be also on the appliance so that these have be seen be the by those ones coming nearer to the dangerous parts.

Conclusion

The hazard identified must be addressed as far as possible by design, followed by guarding and only then by use of warnings to warn of residual risk (Essential Requirement 1.3). A combination of design and instructions for the installer may be used to ensure that the product is installed in a safe position (Essential Requirements 1.3 and 1.4). It must be taken into account that it is not only the innate persons who can approach the danger points and be harmed there.

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Gas Appliances Regulation ((EU) 2016 / 426)	
GUIDANCE B 2	**Approved by WG-GA**
	Y

Guideline related to:

ANNEX	**I**	**Essential Requirements**
Section	**3**	**Design and Construction**
Paragraph	**3.1**	**General, E.R. 3.1.7 and 3.1.8**
Subject	**Gas Appliances incorporating electrical and/or electronic components**	

E.R. 3.1.7.

Appliances shall be designed and constructed as to obviate any gas related risks due to hazards of electrical origin, As far as relevant, the results of the conformity assessment in relation to the safety requirements of Directive 2014/53/EU of the European Parliament and of the Council or the safety objectives of Directive 2014/35/EU of the European Parliament and of the council shall be taken into account.

E.R. 3.1.8.

Appliances shall be designed and constructed as to obviate any gas related risks due to originating from electromagnetic phenomena, As far as relevant, the results of the conformity assessment in relation to the electromagnetic compatibility of directive 2014/53/EU or Directive 2014/30/EU of the European Parliament and of the Council shall be taken into account.

Question

For gas appliances incorporating electrical and/or electronic components, how are risks of an electrical nature and related to electromagnetic phenomena, with regards to gas safety, dealt with by the Regulation?

Discussion

Gas appliances incorporating electrical and/or electronic components can be sensitive to electromagnetic phenomena and present gas safety risks of an electrical nature. This may affect either the proper functioning of the appliance or the safety of the appliance.

Two related issues may be considered as being associated with gas appliances:

Reference: (EU 2016/426 "Gas Appliances Regulation" O.J. L81/99 31.03.2016, p.99
Source of guidance document: NBGA-Open

Doc. Number	Rev. Number	Approved by NBGA-Open	Approved by WG-GA	Withdrawn
B2	**1**	**05-10-2021**	**20-05-2022**	**--**

1. The proper functioning of the appliance in its environment and the disturbances caused by the appliance (EMC immunity, EMC emissions and Radio Equipment compliance (if applicable)) and the electrical safety of the products.
2. The safety of the appliance, with regards to gas safety, towards persons, domestic animals and property.

The aspects in 1 are considered under the Directives 2014/30/EU, 2014/35/EU and 2014/53/EU. These products, when they fall under the scope of these directives, must comply with the requirements in these directives when placed on the market and must be CE marked. The manufacturers declaration of conformity is the means to indicate compliance with the requirements of these directives. This aspect is not to be verified by the Notified Body for the purposes of the GAR.

The aspect in 2 must also be considered under the GAR and the Notified Body must consider any gas safety risks that apply as part of any conformity assessment process.

When issuing an EU Type Examination certificate for gas appliances containing electrical and/or electronic components, the Notified Body must consider the influence of electromagnetic phenomena and risks of an electrical nature on the gas safety of the appliance and ensure that the gas safety of the appliance is not degraded when used normally and subjected to such risks.

Conclusion

4. The GAR, LVD, EMC Directive and RED (if applicable) apply to gas appliances incorporating electrical and/or electronic components. The issues associated with the proper functioning and non-related gas safety of the appliance are considered under the appropriate directives, whilst the risks associated with the gas safety of the appliance are considered under the GAR.

5. The applicable requirements of EN 60335-2-102:2016 clause 19.11.4 can be considered as an adequate means to address the risks associated with electromagnetic phenomena for gas appliances with safety-related electrical or electronic systems and shows a possible way for the fulfilment of the state of the art which is required in the GAR.

6. Potential gas safety risks generated by incorporation or the functioning of such components and parts in gas appliances or fittings are to be assessed under the conformity assessment of the GAR by the Notified Body.

7. Appropriate documentation provided by the manufacturer may be used to avoid the duplication of testing.

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Gas Appliances Regulation ((EU) 2016 / 426)	
GUIDANCE B 3	**Approved by WG-GA** Y

Guideline related to:

Annex	**I**	**Essential Requirements**
Section	**1**	**General Requirements**
Paragraph	**1.6.1**	
Subject		**Boiler body / forced draught burner matching**

E.R. 1.6.1.

"The instructions for installation intended for the installer shall contain all the instructions for installation, adjustment and servicing required to ensure that those operations are correctly performed so that the appliance may be used safely.

The instructions for installation intended for the installer shall include also information on the technical specifications of the interface between the appliance and its installation environment allowing its correct connection to the gas supply network, the supply of auxiliary energy, the combustion air supply and the flue gas evacuation system.

Question

Boiler bodies are covered by the definition of heating bodies mentioned in the Regulation. How should the manufacturer(s) of the forced draught burner and boiler body provide the information referred to in the first paragraph of Essential Requirement 1.6.1 to ensure safe boiler body/burner matching?

Discussion

Forced draught burners and the boiler bodies to be equipped with such burners when placed on the market separately need to be matched safely.

Normally, a forced draught burner is fitted to the boiler body at the place of putting into service by the installer.

In order to make sure that the combination will be in conformity with the Essential Requirements, manufacturers of the forced draught burners and boiler bodies must specify adequate information to ensure the burner/boiler matching can be carried out safely.

The manufacturer of forced draught burners, who markets the burners separately, must:

Reference: (EU 2016/426 "Gas Appliances Regulation" O.J. L81/99 31.03.2016, p.99;
Source of guidance document: NBGA-Open

Doc. Number	Rev. Number	Approved by NBGA-Open	Approved by WG-GA	Withdrawn
B3	**1**	**05-10-2021**	**20-05-2022**	**--**

– assure that the burners are tested and certified on the basis of use of a test rig which simulates the boiler bodies, and

– either indicate in the instructions for installation the necessary technical information for matching the burners to the boiler bodies,

– or on the basis of the technical information, where appropriate, draw up a list of recommended combinations.

This matter is covered by the harmonised standard EN 676.

The manufacturer of boiler bodies has two options:

First option (restricted use of burners)

– to identify the specific forced draught burners which may be used with the boiler body; and – To list the identified burners in the instructions.

Second option (separate market for boiler bodies)

– to specify in the instructions the interface requirements for the forced draught burner.

Conclusion

Manufacturers of forced draught burners and boiler bodies shall provide sufficient instructions either specifying the boiler body and burner combinations, or provide sufficient interface information to allow pairs to be matched safely.

The Annex gives an example for detailed information on a procedure for ensuring safe boiler body / forced draught burner matching.

Encl.: Annex

- **ANNEX**

1 **General**

• The burner shall be suitable for combination with boiler bodies, which can be assured by fulfilling the requirements of harmonised standard EN 676.

• The boiler body shall be suitable for combination with a burner, which can be assured by fulfilling the requirements of EN 303-1.

• The combination of boiler body and forced draught burner shall fulfil the Essential Requirements of the GAR, which can be assured by testing at least one assembly (a boiler body with a forced draught burner) according EN 303-3.

2 **Options**

2.1 List

The manufacturers establish a list of recommended combinations in accordance with Essential Requirement 1.6.1 (first paragraph). This list shall be based either on tests or on criteria set out in the Guidance Sheet and this Annex to it.

The installer may select the appropriate combination of boiler body and burner by reference to the list.

2.2 Technical instructions

The technical instructions shall include the necessary information to permit the installer, responsible for the installation, and the commissioning of the finished appliance, to verify that when installed it does meet the Essential Requirements.

3 **Procedure**

The procedure mentioned hereafter will be part of the manufacturer's instruction for the installer.

3.1 Criteria for matching a boiler body / burner

The criteria mentioned hereafter do not apply to assemblies designed as units and tested as such. Such an assembly will be marketed as a complete boiler (unit).

3.1.1 The minimum dimensions of the combustion chamber shall not be smaller than the values specified in diagram 1.

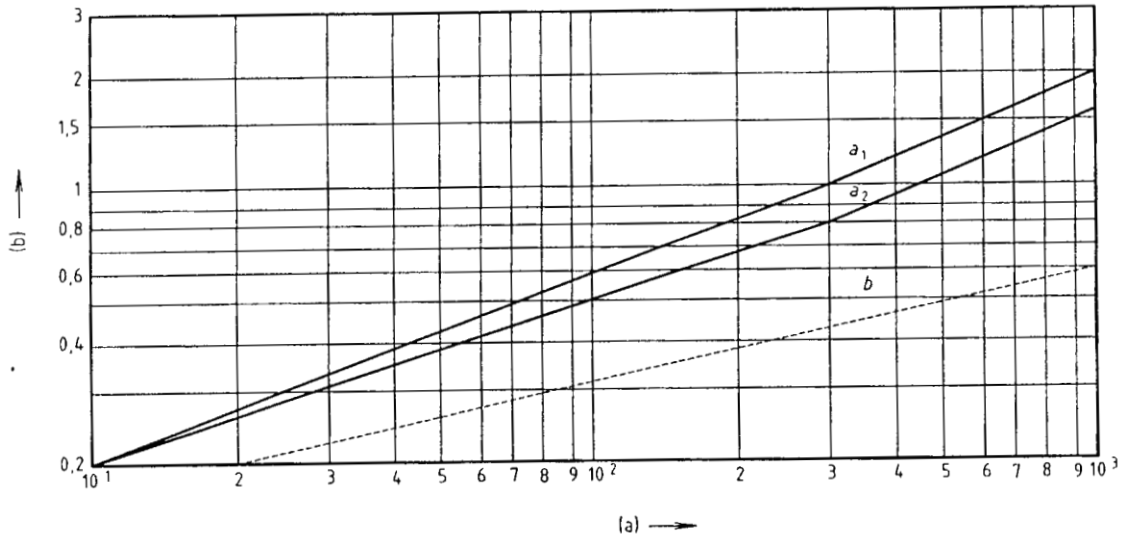


Diagram 1: Minimum dimensions of the combustion chamber

whereby (see EN 303-3:2004):

(a) = Nominal useful output P_n in kW

(b) = Diameter and length of the combustion chamber in m

the dimension "a" is the distance from the deflector plate of the burner up to the opposite wall of the combustion chamber.

- a_1 = Minimum length for combustion chamber with direct flame
- a_2 = Minimum length for combustion chamber with flame reversal

For a combustion chamber designed for reverse flame and with a heat input greater than 300 kW, the length "a" can be reduced by 20%.

For boilers with a heat input between 10 kW and 300 kW the reduction of "a" occurs proportionally to the heat input between 0% and 20%.

the dimension "b" is the diameter of the circular combustion chamber or the minimum sectional dimension in the case of a non-circular combustion chamber.

3.1.2 The resistance of the combustion chamber corresponding to the nominal heat input shall be in accordance with the working diagram of the burner, as defined in EN 676.

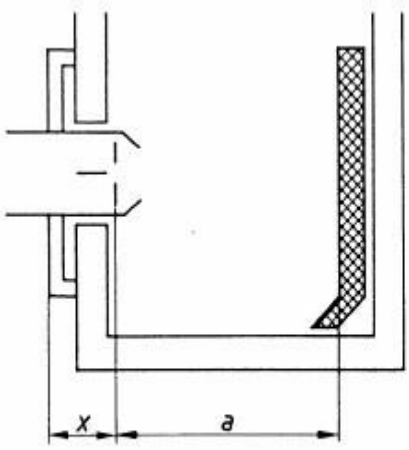
3.1.3 The operation mode of the burner (on/off, two stage or modulation) shall be in accordance with the instructions given by the boiler body manufacturer.

3.1.4 The minimum heat input of the burner shall not be set to a lower value than the minimum heat input, declared by the boiler body manufacturer.

3.2 Technical documentation

3.2.1 The boiler body manufacturer shall specify in accordance with EN 303-1 and EN 303-3 the following data:

- nominal heat input;
- the operation mode for which the boiler body has been designed (on-off, multistage, modulating). The minimum heat input, below which value the burner may not operate in case of boiler bodies intended to be fired by a multistage or modulating burner;
- the flow resistance of the combustion chamber ($\lambda = 1,2$) at nominal heat input;
- the type of combustion chamber (direct evacuation or reversed combustion);
- the length "a" of the combustion chamber, see figure 1;
- the diameter or, in case of a non-circular combustion chamber, the minimum sectional dimension;
- the burner penetration "*x*" and the geometry of the assembly flange, see figure 1;
- relevant warnings (operation).
- temperature of combustion products, CO_2 (or O_2) and CO values.



a: length of combustion chamber with or without fire brick

x: distance between burner flange and nozzle, given by the manufacturer

Figure 1 Burner - boiler assembly

3.2.2 The burner manufacturer shall specify in accordance with EN 676 the following data:

- maximum and minimum heat input;
- the working diagram;
- the dimensions of the burner head;
- the burner penetration (x) and the geometry of the assembly flange, see figure 1;
- the connection dimensions;
- relevant warnings (operation).

3.3 Test report

The installer shall draw up a test report containing checks and adjustments related to the boiler body and the burner specifications and the adjustments carried out.

3.3.1 The installer shall indicate:

- the address and name where the assembly is installed;
- the name and type of the certified boiler body to EN 303-1 / EN 303-3;
- the name and type of the certified burner to EN 676 / EN 303-3;
- the maximum and minimum heat input declared by the manufacturer for the boiler body and for the burner;

- the operation mode for which the boiler body has been designed (on-off, multistage, modulating);
- the flow resistance of the combustion chamber declared by the boiler body manufacturer;
- the type of combustion chamber (direct evacuation or reversed combustion);
- the length (a) of the combustion chamber as indicated in figure 1;
- the diameter or minimum sectional dimension in case of a non-circular combustion chamber;
- the burner penetration (x) into the combustion chamber as indicated in figure 1;

3.3.2 The installer shall make the following adjustments:

- the heat input, in accordance with the instructions of the manufacturer of the burner;
- the minimum heat input in case of multistage or modulating burners;
- the ignition rate of the burner in accordance with the instructions of the manufacturer of the burner;
- the combustion air

and shall calculate the global efficiency (Siegert formula).

After the adjustments the installer shall note:

- the heat input;
- the minimum heat input;
- the ignition rate;
- temperature of the combustion products as well as the CO2 (or O_2) and CO values These values shall be in accordance with those given by the manufacturer;
- the ambient temperature

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Gas Appliances Regulation ((EU) 2016 / 426)	
GUIDANCE B 6	**Approved by WG-GA** Y

Guideline related to:

ANNEX	**I**	**Essential Requirements**
Section	**3**	**Design and Construction**
Paragraph	**3.1**	**General, E.R. 3.1.10**
Subject	**Failure of safety, controlling or regulating devices**	

E.R. 3.1.10.

Appliances shall be so designed and constructed that failure of a safety, controlling or regulating device may not lead to an unsafe situation."

Question

In modern appliances it may occur that an electronic reset device is used to reset the appliance from volatile or non-volatile lock-out. Such a device could be, for example, an electronic room thermostat or a control board in the appliance itself. What are the necessary safety requirements for the use of such reset devices?

Discussion

Resetting an appliance from lock-out is a safety relevant action. Therefore preventative measures shall be taken against unintended resetting. Due to mains interruptions being relatively rare it is allowed to reset the appliance by interrupting the mains for a volatile lock-out situation. In case of non-volatile lock-out a manual reset on the appliance is required. Unintended reset action is not allowed at all (even in the case of tampering or misuse of the reset device).

If a simple reset device (a switch) is replaced by an electronic one, e.g. a room thermostat with a reset provision, an analysis has to be made of the failure modes of the signal output and input. If a burner control system, complying with the relevant standard, is used as a resetting device failures resulting in a static output signal are not deemed to be an issue. They can be compared with stuck-at failures of a conventional reset device.

However dynamic output signals resulting from internal faults, e.g. in case of a malfunctioning program-counter, cannot be excluded. Such a dynamic signal will continuously reset the appliance, which is not acceptable. An electronic reset device shall meet the requirements for resistance to internal failure behaviour.

It can be considered sufficient to apply a single fault criteria, as described in EN 60730-1 (CENELEC), when establishing the internal fault behaviour. The reset device shall be independent from the application.

No gas appliance shall be subjected to unintended resets, even under fault conditions.

Conclusion

Those electronic parts of the device, that are involved in a reset action shall meet the necessary safety requirements as laid down in the relevant requirements for the appliance or fitting. The application of the single fault criterion, e.g. as described in EN 60730-1:2016, can be considered as being sufficient.

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Reference: (EU 2016/426 "Gas Appliances Regulation" O.J. L81/99 31.03.2016, p.99
Source of guidance document: NBGA-Open

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B6	**1**	**26-03-2019**	**03-06-2021**	**--**

Gas Appliances Regulation ((EU) 2016 / 426)	
GUIDANCE B 8	**Approved by WG-GA** Y

Guideline related to:

ANNEX	**I**	**Essential Requirements**
Section	**3**	**Design and Construction**
Paragraph	**3.3 & 3.4.1**	**Ignition, Combustion**
Subject	**Ignition and combustion**	

Ignition: E.R. 3.3.

Appliances shall be so designed and constructed that, when normally used, ignition and re-ignition is smooth and cross-lighting is assured.

Combustion: E.R. 3.4.1

Appliances shall be so designed and constructed that, when normally used, the combustion process is stable and combustion products do not contain unacceptable concentrations of substances harmful to health.

Question

When testing gas appliances that have a flame, what consideration shall be given to external influences which may affect ignition and combustion?

Discussion

In these Essential Requirements reference is made to the term "normally used". Article 1 (2) of the Regulation defines what is intended by this term. For the application of these Essential Requirements the last two indents are particularly important:

(b) it is used with a normal variation in the gas quality and a normal fluctuation in the supply pressure, as set out by Member States in their communication pursuant to Article 4 (1)

(c) it is used in accordance with its intended purpose or in any way which can be reasonably foreseen.

This means that in response to the first indent above only the tests for ignition and combustion should be carried out with variations in the gas quality and pressure of the distribution gas as set out by Member States in their communication pursuant to Article 4 (1). For many years in the gas industry these variations have been simulated by the application of a system using limit gases and limit pressures, reflecting the gas supply conditions in the Member States.

Reference: (EU 2016/426 "Gas Appliances Regulation" O.J. L81/99 31.03.2016, p.99
Source of guidance document: NBGA-Open

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B8	**1**	**05-10-2021**	**20-05-2022**	**--**

The implication of the second indent above is that for those tests with the limit gases and pressures also tests have to be added in situations that can be reasonably foreseen. Such specific situations include:

a) Variations in the auxiliary energy, or

b) Variation in the chimney conditions, or

c) With room draughts.

However, manufacturers and notified bodies must assess on a case by case bases whether additional tests would be needed considering the normal variation in the gas quality and a normal fluctuation in the supply pressure, as set out by Member States in their communication pursuant to Article 4 (1) for each Member State of destination

Note

For gas appliances that do not have a flame (for example fuel cells) the test gases specified for: light back, lifting, incomplete combustion, sooting and overheating are unlikely to be appropriate for establishing the stability of the combustion process at reference conditions.

Conclusion

A) Reference conditions

- Ignition, cross-lighting and re-ignition (ER 3.3) with the relevant limits of gas quality(ies) and pressure(s) in accordance with the category(ies) chosen by the manufacturer,

and

- Combustion characteristics (ER 3.4.1) with the relevant limits of gas quality(ies) and pressure(s) in accordance with the category(ies) chosen by the manufacturer.

B) External influences

Under variation of draught conditions (chimney, room or wind) or with variations of auxiliary energy or other external influences on the appliance

- for the ignition, cross-lighting and re-ignition (ER 3.3) and

- for the combustion characteristics (ER 3.4.1)

with, for these conditions, the relevant gas quality(ies) and pressure(s) in accordance with the category(ies) chosen by the manufacturer.

The above interprets for gas appliances that have a flame the meaning of "normally used" as applied in the Essential Requirements following the definition given in Article 1 (2) of the Regulation.

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Gas Appliances Regulation ((EU) 2016 / 426)	
GUIDANCE B 9	**Approved by WG-GA** **Y**

Guideline related to:

ANNEX	**I**	**Essential Requirements**
Section	**3**	**Design and Construction**
Paragraph	**3.4.3**	
Subject	**Combustion, abnormal draught conditions.** **Do all appliances with a draught diverter need a TTB?**	

E.R. 3.4.3

Appliances connected to a flue for the dispersal of combustion products shall be so designed and constructed that in abnormal draught conditions there is no release of combustion products in a dangerous quantity into the indoor spaces or rooms concerned.

Question

A TTB is a safety device that closes the gas supply to the burner(s) in case of abnormal draft conditions in the flue resulting in a release of combustion products through the draft diverter into the room. *(TTB is a Dutch acronym for Thermische Terugslag Beveiliging. The acronym TTB is used in most language versions of GAR-harmonized standards for this device.)*

Does requirement E.R. 3.4.3 mean that all open appliances with a draught diverter need a TTB to be incorporated into the appliances or will there be conditions, where this TTB is not needed, since abnormal draught conditions will not result in a release of combustion products to an extend that it creates a dangerous situation?

Discussion

The essential requirement is, in case of open appliances with a draught diverter connected to a flue, referring to the event that a blockage of the flue or down draught in the flue, can result in a release of combustion products through the draught diverter into the indoor space or room concerned.

If these open appliances with a draught diverter are installed in an indoor space or room where the abnormal draught will have the result that the draught diverter will release combustion products in a dangerous quantity into the indoor space or room, the appliance must be fitted with a safety device to prevent this.

However, open appliances with a draught diverter might be installed in locations, where a blockage of the flue or down draught in the flue will not have the result that the draught diverter will release

combustion products in a dangerous quantity into the indoor spaces or rooms. In that case a TTB is not required.

The following types of installations are in most cases not considered to give rise to a dangerous quantity:

1. Boilers in boiler rooms, which are specifically designed to maintain the provision of an adequate level of controlled ventilation and to which it is not usual that persons, other than authorised persons, have access.

2. Overhead radiant heaters which are installed at such a height relative to the persons who may be exposed to combustion products that natural dilution ventilation would prevent the build-up of a dangerous quantity.

The assessment of the actual situation and establishment of the need for a TTB is to be done by a professional competent person.

Conclusion

Installation of appliances with an open flue in normal rooms in houses or flats will require a safety device incorporated into the appliances.

However, there will be examples of installations, where these safety devices will not be needed, since a dangerous situation will not occur.

The assessment of the actual situation and establishment of the need for a TTB is to be done by a professional competent person.

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Gas Appliances Regulation ((EU) 2016 / 426)	
GUIDANCE B 11	**Approved by WG-GA** Y

Guideline related to:

ANNEX	**I**	**Essential Requirements**
Section	**3**	**Design and Construction**
Paragraph	**3.5**	
Subject	**Rational use of energy, state of the art**	

E.R. 3.5

Appliances shall be so designed and constructed as to ensure rational use of energy, reflecting the state of the art and taking into account safety aspects.

Question

How can the manufacturer demonstrate compliance with ER 3.5.?

Discussion

The objective of the directive is to introduce a sound balance between rational use of energy on the one hand and safety aspects on the other hand. This requirement shall be applied with discernment, to take account of the state of the art. However, for products with an important energy consumption, requirements have been laid down by Community legislation:

- the Regulations implementing Directive 2009/125/EC for the respective product group.
- For other products, the state of the art has to be taken into consideration. Guidance on the state of the art can be found in the relevant harmonised European standards giving the presumption of conformity. Where no harmonised standards exist, other standards likely to reflect the state of the art can be used as a basis for assessment.

Conclusion

Gas appliances covered by regulations implementing Directive 2009/125/EC:

The rational use of energy essential requirement laid down in point 3.5 of Annex I to this Regulation (EU) 2016/426 does not apply to appliances covered by a measure adopted pursuant to Article 15 of Directive 2009/125/EC.

The following (non-exhaustive) list gives the relevant Regulation implementing Directive 2009/125/EC for the respective product group with the respective date of entry into force

- *Gas central heating appliances and combi appliances with heat input <- 400 kW*
  These appliances shall satisfy the requirements of the Regulation 813/2013.

- *Gas Water heaters with heat input <- 400 kW*
  These appliances shall satisfy the requirements of the Regulation 814/2013.

- *Gas domestic ovens and hobs*
  These appliances shall satisfy the requirements of the Regulation 66/2014.

- *Gas local space heaters*
  These appliances shall satisfy the requirements of the Regulation 2015/1188

- *Household tumble driers*
  These appliances shall satisfy the requirements of the Regulation 932/2012

All other appliances:

Guidance on the state of the art can be found in the relevant harmonised European standards giving the presumption of conformity. Where no harmonised standards exist, other standards likely to reflect the state of the art can be used as a basis for assessment

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Gas Appliances Regulation ((EU) 2016 / 426)	
GUIDANCE B 12	**Approved by WG-GA**
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Guideline related to:

ANNEX	**I**	**Essential Requirements**
Section	**3**	**Design and Construction**
Paragraph	**1.1, 3.1.10, 3.1.11, 3.1.13, 3.6.1, 3.6.3**	
Subject	**Remote operation of Gas appliances**	

GAR

1.1 Appliances shall be so designed and constructed as to operate safely and present no danger to persons, domestic animals or property, when normally used.

Fittings shall be so designed and constructed as to fulfil correctly their intended purpose when incorporated into an appliance or assembled to.

ANNEX I

3.1.10 Appliances shall be so designed and constructed that failure of a safety, controlling or regulating device may not lead to an unsafe situation.

3.1.11 If an appliance is equipped with safety and controlling devices, the functioning of the safety devices shall not be overruled by that of the controlling devices.

3.1.13 Levers and other controlling and setting devices shall be clearly marked and give appropriate instructions so as to prevent any error in operation/use. Their design shall be such as to preclude accidental operation.

3.6.1 Parts of appliances which are intended to be installed or placed in close proximity to surfaces shall not reach temperatures which present a danger.

3.6.3 The surface temperatures of external parts of appliances, with the exception of surfaces or parts which are associated with the transmission of heat, shall not under operating conditions present a danger to health and safety of persons exposed and in particular to children and elderly people, for whom an appropriate reaction time shall be taken into account.

Reference: (EU 2016/426 "Gas Appliances Regulation" O.J. L81/99 31.03.2016, p.99
Source of guidance document: NBGA-Open

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B12	**1**	**05-10-2021**	**22-05-2022**	**--**

Question

What measures should be taken when considering gas appliances designed to be operated remotely?

Discussion

Risks of fire can arise from remote operation due to the unexpected operation of the appliance (either due to appliance faults, interference from external sources or unexpected user behavior).

Certain types of gas appliance have always been operated remotely and unattended and, since there are many millions of these in use throughout the EU, it is a reasonable position to state that these appliances present an acceptable level of risk so far as their remote operation is concerned, because the temperature of the outer surfaces are not high enough to create a hazard of fire and/or burns.

Examples:

- Heating Boilers – fixed appliances that operate in response to timers and room thermostats
- Water heaters – fixed appliance that operate in response to demand for hot water
- Ovens – fixed appliances that may be programmed and cycle on and off as needed

Other types of gas appliance may present an increased level of risk as their remote operation is concerned, because the temperature of the outer surfaces (incl. naked flame) are high enough to create a hazard of fire and/or burns.

Examples:

- Fireplace – appliance with naked flame, remotely operated
- Fireplace – closed fronted, operated with an App

Gas hob – naked flame operated by a timer

Conclusion

Appliances provided with remote controls must, in any circumstances, meet the essential requirements of the GAR, specially clause 3.6.1, 3.6.3, 1.1, 3.1.10, 3.1.11 and 3.1.13

Testing the appliance with its dedicated controlling device in accordance with EN 13611:2016, clause 6.6, Class B can be considered as an adequate means to address the risks associated with gas appliances coming into operation unexpectedly due to failure of a single electronic component or single electrical fault.

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Gas Appliances Regulation ((EU) 2016 / 426)	
GUIDANCE B 13	**Approved by WG-GA**
	Y

Guideline related to:

ANNEX	**I**	**Essential Requirements**
Section	**1**	**Design and Construction**
Paragraph	**1.5**	
Subject	**Electronic distribution of instructions and manuals (through the internet or by CD/DVD)**	

E.R. 1.5

All appliances shall:

a) be accompanied by instructions for installation intended for the installer;

b) be accompanied by instructions for use and servicing, intended for the user;

c) bear appropriate warning notices, which shall also appear on the packaging.

Question

1. Is it allowed for the manufacturer to use internet for the distribution to the installer and/or user of the following documents:
    a. technical instructions, intended for the installer
    b. instructions for use and servicing, intended for the user?
2. Is it allowed for the manufacturer to make the above mentioned instructions available to the installer and/or user on a CD or DVD, delivered together with the appliance?

Discussion

The manufacturer has to market his appliances together with the instructions for installation, use and servicing in the various languages of the countries of destination. For logistics reasons it would be very convenient for the manufacturer not to be obliged to supply hard copies of these instructions with every appliance, but to make these instructions available through internet or to supply the appliances/fittings with a CD/DVD containing the several language versions of the instructions.

Reference: (EU 2016/426 "Gas Appliances Regulation" O.J. L81/99 31.03.2016, p.99
Source of guidance document: NBGA-Open

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B13	**1**	**26-03-2019**	**03-06-2021**	**--**

If the documents are available only by downloading them from internet, the appliance/fitting is not accompanied by these documents as is obligatory according to Annex I, par. 1.5.

It is assumed that the aim of the provision of Annex I, par.1.5 is to have the complete instructions available at the place of installation and use, thus ensuring as much as possible that all instructions will be taken into account.

A reading of the instructions from the screen of the PC, possibly not available at the place of installation/use, may lead to omissions. The manufacturer cannot be sure that every installer and user have at their disposal a PC with an internet connection and will download and print the instructions.

Moreover, finding the manual belonging to the appliance/fitting in the language(s) of the country of destination can be complex, especially when the type of appliance/fitting is a member out of a large family.

Making the instructions available on a CD/DVD, supplied together with the appliance, may formally comply with the provision of Annex I, par. 1.5, but cannot be considered to meet the aim of this provision. As stated above, the manufacturer cannot be sure that the installer/user has the means to download the instructions from the CD/DVD and whether or not he can or will print them out.

For fittings, marketed by the manufacturer directly to an appliance manufacturer for incorporation in appliances, this subject is dealt with in Annex I par. 1.7

Conclusion

According to the GAR Annex I, par. 1.5, the instructions for installation, use and servicing shall be provided with the appliance.

Distribution of the instructions for installation, use and servicing through internet or by a CD/DVD, without providing together with the appliance/fitting hard copies of these instructions in the appropriate language(s), is not complying with the provisions of Annex I, par. 1.5.

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Gas Appliances Regulation ((EU) 2016 / 426)	
GUIDANCE B 15	**Approved by WG-GA**
	Y

Guideline related to:

ANNEX	**I**	**Essential Requirements**
Section	**1**	**General**
Paragraph	**1.6.1**	
Subject	**Reference to national, regional and local regulations**	

E.R. 1.6.1

The instructions for installation intended for the installer shall contain all the instructions for installation, adjustment and servicing required to ensure that those operations are correctly performed so that the appliance may be used safely.

The instructions for installation intended for the installer shall include also information on the technical specifications of the interface between the appliance and its installation environment allowing its correct connection to the gas supply network, the supply of auxiliary energy, the combustion air supply and the flue gas evacuation system.

Question

In some harmonised European Standards, a reference to national regulations is mentioned and linked in the Annex ZA to the essential requirement 1.6.1. of GAR Annex I.

For example:

EN 30-1-1:2013, clause 8.3.2.2, the 6th paragraph 1st sentence states: These instructions shall also give precise indications for connecting the appliance to the gas and a reference to the installation regulations in force in the country in which the appliance is to be used.

EN 203-1:2014, clause 9.3.3 states:

The technical manual intended for the installer shall give all the necessary instructions for installation, adjustment and servicing. They refer to the installation regulations in force in the country in which the appliance is to be installed.

However, both EN 30-1-1:2013 and EN 203-1:2014 are harmonised but not cited in the Official Journal, giving no presumption of conformity.

Reference: (EU 2016/426 "Gas Appliances Regulation" O.J. L81/99 31.03.2016, p.99
Source of guidance document: NBGA-Open

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B15	**1**	**26-03-2019**	**03-06-2021**	**--**

The question arises whether this “reference” must be taken strictly into account in the technical instructions intended for the installer by specifying the applicable national regulations or whether it is sufficient that the instructions draw attention to the need to “take into account the national regulations” without specifying these regulations?

Discussion

The GAR constitutes the legal framework for the placing on the market and putting into service of gas appliances in the EU Member States. It aims to provide access to the EU market for appliances (and fittings) so far as the gas safety of these products is concerned. Consequently, gas appliances marketed in one country can freely move throughout the EU. The above is stipulated in Article 6.1 of the GAR as follows:

“Member States shall not, on grounds relating to the aspects covered by this Regulation, prohibit, restrict or impede the making available on the market and the putting into service of appliances which comply with this Regulation. “

The so-called installation issues fall within the competence of the Member States and are put in place by their installation and other relevant regulations. However, the Member States cannot impose in their regulations any such provisions which would have design related impacts to gas appliances as far as gas risks are concerned.

Consequently, it should be noted that the GAR deals with the gas safety of an appliance for the free circulation purposes on the EU market while the installation regulations of the Member States deal with the correct and safe incorporation of a gas appliance into the installation environment of the appliance.

Furthermore, the GAR in order to ensure that the special conditions at the place of installation of an appliance are appropriately taken into account requires that the instructions for the installer shall include the technical specifications of the interface between the appliance and its installation environment allowing its correct connection to the gas supply network, the supply of auxiliary energy, the combustion air supply and the flue gas evacuation system. It also stipulates in essential requirement 1.6.3. that the warning notices on the appliance and its packaging shall clearly state the type of gas to be used, the gas supply pressure, the appliance category and any restrictions on use, in particular the restriction whereby the appliance shall be installed only in areas where there is sufficient ventilation so as to ensure that the risks presented by it are minimised.

In essential requirement 1.6.2 it is stated: The manufacturers shall note in the instructions where additional care is needed or where it would be advisable that any of the above work be carried out by a professional. This shall be without prejudice to national requirements to that effect. The appliance or its data plate must also bear the CE marking together with indication on e.g. the appliance category.

It can be concluded that the GAR contains all the necessary provisions as far as gas safety of appliances (and fittings) is concerned for the purposes of the free movement of these appliances. It would not be consistent to refer to aspects related to special national installation conditions in the framework of a piece of European product harmonisation regulation, but only to draw the installers and users attention to the fact that the incorporation of appliances to their installation environment is subject to national regulations.

Member States remain fully competent to regulate the installation of gas appliances as far as the regulations do not have design related impacts. Member States are also competent to regulate e.g. the qualification requirements laid down for (gas) installers.

In cases where it may be expected that non-qualified users are expected to install or connect appliances to the gas supply or gas installation or to LPG cylinders or cartridges, the instructions accompanying appliances must pay special attention to provide clear instruction on how such installation or connections shall be performed. Furthermore, the installers and the users must be informed about the necessary ventilation conditions for such appliances, where relevant.

In executing the conformity assessment of a gas appliance a Notified Body is, according to its designation, responsible for the examination that the appliance meets the requirements of the GAR.

Conclusion

The technical instructions for the installer: The manufacturer must ensure that appliances are so designed and constructed as to operate safely and present no danger to persons, domestic animals or property, when normally used. The concept of "normal use" means that, amongst others, appliances are correctly installed and regularly serviced in accordance with the manufacturer's instructions. When drafting the instructions the manufacturer shall envisage not only the intended use of the appliance, but also the reasonably foreseeable uses.

The manufacturer may assume that adequate installation codes and qualification requirements for installers are in place in the country where the appliance is installed and that the installers are aware of these codes. A general reference to "national installation codes" is sufficient.

In cases where it is expected that the appliance may be installed by the consumer or any other non-competent person: the instructions should be clear to the consumer in describing how to install and/or connect and use the appliance safely.

In carrying out the conformity assessment of an appliance, a GAR Notified Body must thoroughly examine whether the appliance meets the applicable provisions of the GAR.

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Gas Appliances Regulation ((EU) 2016 / 426)	
GUIDANCE B 16	**Approved by WG -GA**
	Y

Guideline related to:

ANNEX	**I**	ESSENTIAL REQUIREMENTS
Article	**1** **2** **3**	GENERAL REQUIREMENTS MATERIALS DESIGN AND CONSTRUCTION
Paragraph	1.2 3.1.10 3.4	Risk assessment Failure of a safety, controlling or regulating device Combustion
Subject	**Use of plastic materials in the combustion circuit**	

ANNEX I ER 1.2

The manufacturer is under an obligation to analyze the risk in order to identify those which apply to his appliance or fitting. He shall then design and construct it taking into account the risk assessment

ANNEX I ER 2

Materials for appliances and fittings shall be appropriate for their intended purpose and shall withstand the mechanical, chemical and thermal conditions to which they foreseeably be subjected

ANNEX I ER 3.1.10

Appliances shall be so designed and constructed that failure of a safety, controlling or regulating device may not lead to an unsafe situation.

ANNEX I ER 3.4.1.

Appliances shall be so designed and constructed that, when normally used, the combustion process is stable and combustion products do not contain unacceptable concentrations of substances harmful to health.

ANNEX I ER 3.4.2

Appliances shall be so designed and constructed that, when normally used, there will be no accidental release of combustion products.

ANNEX I ER 3.4.3

Appliances connected to a flue for the dispersal of combustion products shall be so designed and constructed that in abnormal draught conditions there is no release of combustion products in a dangerous quantity into the indoor spaces or rooms concerned.

ANNEX I ER 3.4.4

Appliances shall be so designed and constructed that, when normally used, they do not cause a concentration of carbon monoxide or other substances harmful to health, such as they would be likely to present a danger to the health of persons and domestic animals exposed.

Reference: (EU) 2016/426 "Gas Appliances Regulation" O.J. L81/99 31.03.2016, p.99;
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B16	**-**	**19/04/2023**	**28/04/2023**	**--**

Definition:

The combustion circuit of the appliance is the circuit from the air inlet to the combustion products outlet of the appliance. The combustion circuit will include for example depending on the appliance type and construction, the air supply circuit, the gas/air mixture fan, the burner, the combustion chamber / heat exchanger and the combustion products circuit.

Question

1. If a standard developed to be used for type testing of gas appliances only contains requirements for metallic materials for the components of the combustion circuit and no requirements for plastic materials of the combustion circuit, does this mean that for use of plastic materials in the combustion circuit there are no requirements to be met to ensure compliance with ER 2, ER 3.1.10 and ER 3.4?
2. If there are requirements to be met for plastic materials, what are the acceptable verification aspects of a plastic combustion circuit (note the system that may consist of several products such as: ducts, bends, other parts and the belonging sealings), as a part of a gas appliance?

Discussion

In the past only metallic materials were used in the combustion circuit, as the flue gas temperatures were too high to use plastic materials. For that reason all standards had in the past only requirements for metallic materials used in the combustion circuit.

Nowadays condensing gas appliances may have sufficiently low flue gas temperatures to open up the possibility of using plastic materials in the combustion circuit. Many standards do not yet have requirements included for plastic materials and seals that are used in the combustion circuit.

It is important to note that if a standard does not contain requirements for plastic materials in the combustion circuit, that does not mean that there are no risks to be evaluated in case of using plastic materials in the combustion circuit.

Influencing elements in the process of degrading/aging plastic material could be (among others) the temperature, the humidity, pH and the foreseeable use and lifetime of the product. If the temperature control is no longer assured, safety risks may occur. Furthermore, the plastic combustion circuit can lead to an unsafe situation, as the material degrades because plastic loses its properties.

Using a standard developed for metallic materials to assess the compliance of plastic materials in the combustion circuit without further proving of the applicability should not be the case. If such a procedure is applied, there should be a risk assessment carried out showing the applicability of the test methods and requirements also for plastics materials of components.

Example:

An example is the plastic combustion product circuit for the exhaust of flue gasses from the heat exchanger to the outlet of a room sealed condensing appliance. This circuit might consist of several products such as a plastic condensation tray, ducts, bends, other parts and belonging sealings. Taking this example, the quality of

the materials used in this circuit can degrade due to the acid condensate and elevated temperature of the flue gasses.

Analysing the risk gives the following result:
When the plastic combustion products circuit inside a room sealed appliance breaks, a toxic amount (thousands ppm) of CO might be formed due to internal recirculation. In this situation there is a safety risk that is indicated in ER 3.4.
However some appliances are designed in such a way that in case of internal recirculation a safety system shuts down the appliance before a dangerous CO concentration can occur. For these designs there is no safety risk as indicated in ER 3.4.

If a standard developed to be used for type testing of gas appliances that does not contain requirements for plastic materials of the combustion circuit, it does not mean that there are no requirements to be met to ensure compliance with ER 2, ER 3.1.10 and ER 3.4. for use of plastic materials in the combustion circuit. A Risk analysis must be made to ensure compliance with ER 2, ER 3.1.10 and ER 3.4.

If the risk analyses reveals that a safety risk might occur if the combustion circuit breaks, one shall demonstrate that:

- The plastic and sealing material shall be appropriate for their intended purpose and shall withstand the mechanical, chemical and thermal conditions to which they foreseeably will be subjected;
- The plastic product is appropriate for its intended use. In this case according essential requirement 1.2, it has to be proven that the plastic products, being a part of the combustion circuit, are designed and constructed taking into account the risk.

The EN 15502-2-1 standard contains (State of Art) requirements along with test methods for both the combustion circuit components and the materials used in this circuit, both metals and plastics (also for sealings). According to this EN 15502-2-1standard in the case of plastics components both the material (plastic or for sealing) as the product itself (duct, etc.) shall be tested and shall fulfil the requirements.

If a standard for a gas appliance does not yet contain requirements for plastic materials in the combustion circuit, the requirements and test methods as described in the EN 15502-2-1 standard might be used to determine the quality of both the plastic or sealing material as well as the product itself (duct, etc).

Conclusion

1. With the developing technology, the flue temperatures have been seriously reduced. Condensing gas appliances may have sufficiently low flue gas temperatures to open up the possibility of using plastic materials in the combustion circuit. In addition to this, many standards do not yet have requirements included for plastic materials and seals that are used in the combustion circuit. So, this does not mean that manufacturers can choose the plastic materials that make up the combustion circuit from plastic material without any evaluation and risk assessment.
2. If there is no requirement to evaluate and test plastic materials in the standard of the manufactured appliance, the risks must be evaluated in detail by the manufacturer.
3. Plastic materials used in the combustion circuit may lose their properties depending on environmental conditions. (Humidity, temperature, pH...)
4. If there is no evaluation clause about the evaluation of plastic materials in the appliance standard, In my opinion, that plastic should not be used in the appliance. In the case of using plastic material, it must be proven that the essential requirements of the relevant regulation are met.

5. The EN 15502-2-1 standard contains (State of Art) requirements along with test methods for both the combustion circuit components and the materials used in this circuit, both metals and plastics (also for sealings). According to this EN 15502-2-1standard in the case of plastics components both the material (plastic or for sealing) as the product itself (duct, etc.) shall be tested and shall fulfil the requirements.
6. If a standard for a gas appliance does not yet contain requirements for plastic materials in the combustion circuit, the requirements and test methods as described in the EN 15502-2-1 standard might be used to determine the quality of both the plastic or sealing material as well as the product itself.

References

EN 15502-2-1:2022

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B16	**-**	**19/04/2023**	**28/04/2023**	**--**

Gas Appliances Regulation ((EU) 2016 / 426)	
GUIDANCE C 1	**Approved by WG-GA**
	Y

Guideline related to:

ANNEX	**III**	**Procedure for certification of conformity**
Section	**1**	**Module B: EU type-examination – production type**
Paragraph	**1.4.3 and 1.4.4**	
Subject	**Acceptance of the manufacturer's test results**	

ANNEX III - 1.4. The notified body shall:

....

1.4.3. carry out appropriate examinations and tests, or have them carried out, to check whether, where the manufacturer has chosen to apply the solutions in the relevant harmonised standards, these have been applied correctly;

1.4.4. carry out appropriate examinations and tests, or have them carried out, to check whether, where the solutions in the relevant harmonised standards have not been applied, the solutions adopted by the manufacturer applying other relevant technical specifications meet the corresponding essential requirements of this Regulation;

Question

Can the Notified Body accept, as the basis for certification, the results of testing carried out in a manufacturer's laboratory?

Discussion

The manufacturer's application for type-examination must include among other things the design documentation that must contain for instance test reports.

The Notified Body must check and certify that an appliance, representative of the production envisaged, meets the provisions of the Regulation which apply to it. As part of this work the design documentation is subject to direct assessment by the Notified Body.

Conclusion

Yes.

However, the Notified Body, in using the manufacturers test results, has to verify that all relevant criteria have been met.

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Reference: (EU 2016/426 "Gas Appliances Regulation" O.J. L81/99 31.03.2016, p.99
Source of guidance document: NBGA-Open

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C1	1	26-03-2019	03-06-2021	--

Gas Appliances Regulation ((EU) 2016 / 426)	
GUIDANCE C 2	**Approved by WG-GA**
	Y

Guideline related to:

ANNEX	**III**	**Procedure for certification of conformity**
Section	**2**	**Module C2: conformity to type based on internal production control plus supervised product checks at random intervals**
	5	**Module F: conformity to type based on product verification**
Paragraph	**2.3, 5.5.2 and 5.5.5**	
Subject	**On-site checks**	

ANNEX III

2.3. Product checks

A notified body, chosen by the manufacturer, shall carry out product checks or have them carried out at intervals of one year or less, in order to verify the quality of the internal checks on the appliance or the fitting, taking into account, inter alia, the technological complexity of the appliances or the fittings and the quantity of production. An adequate sample of the final appliances or fittings taken on site by the notified body before the placing on the market, shall be examined and appropriate tests as identified by the relevant parts of the harmonised standards, and/or equivalent tests set out in other relevant technical specifications, shall be carried out in order to check the conformity of the appliance or the fitting with the relevant requirements of this Regulation. Where a sample does not conform to the acceptable quality level, the notified body shall take appropriate measures. The acceptance sampling procedure to be applied is intended to determine whether the manufacturing process of the appliance or the fitting performs within acceptable limits, with a view to ensuring conformity of the appliance or the fitting. 31.3.2016 L 81/134 Official Journal of the European Union EN The manufacturer shall, under the responsibility of the notified body, affix the notified body's identification number during the manufacturing process.

5.5. Statistical verification of conformity

5.5.2. A random sample shall be taken from each lot in accordance with the requirements of point 5.5.3. All appliances or fittings in a sample shall be individually examined and appropriate tests set out in the relevant harmonised standard(s) and/or equivalent tests set out in other relevant technical specifications, shall be carried out in order to verify their conformity with the applicable requirements of this Regulation and to determine whether the lot is accepted or rejected. In the absence of such a harmonised standard, the notified body concerned shall decide on the appropriate tests to be carried out.

Reference: (EU 2016/426 "Gas Appliances Regulation" O.J. L81/99 31.03.2016, p.99
Source of guidance document: NBGA-Open

Doc. Number	Rev. Number	Approved by NBGA-Open	Approved by WG-GA	Withdrawn
C2	1	26-03-2019	03-06-2021	--

5.5.5. If a lot is rejected, the notified body or the competent authority shall take appropriate measures to prevent that lot being placed on the market. In the event of the frequent rejection of lots the notified body may suspend the statistical verification and take appropriate measures.

Question

What measures should the Notified Body take in case where tests to 2.3 or 5.5.2. of ANNEX III reveal non-conformity?

Discussion

When the Notified Body identifies a non-conformity in the meaning of point 2.3. or 5.5.2, it will enter into discussion with the manufacturer to solve the identified non-compliance. In case the non-conformity to the type persists, it can formally suspend the surveillance activities, thus impeding the manufacturer rom affixing the CE marking and from placing the product on the market. It will inform, in such a case, the notifying authority and other Notified Bodies (see Art 33). It will also draw the attention of the manufacturer to the potential consequences for the products already placed on the market.

The manufacturer (or the other relevant economic operator), as appropriate, in the light of the safety risks identified shall immediately inform the competent market surveillance authorities.

The Notified Body cannot oblige the manufacturer to have previously manufactured appliances removed (withdraw or recall) from the market. Such a measure is to the competence of the market surveillance authority only (see CHAPTER V) who will have been informed by the manufacturer (or the other economic operator) as mentioned above.

Conclusion

When an on-site check reveals non-conformity of one or more appliances or fittings, the Notified Body in charge of it should take the measures described above.

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Gas Appliances Regulation ((EU) 2016 / 426)	
GUIDANCE C 3	**Approved by WG-GA**
	Y

Guideline related to:

ANNEX	**III**	**Procedure for certification of conformity**
Section	**2**	**MODULE C2: CONFORMITY TO TYPE BASED ON INTERNAL PRODUCTION CONTROL PLUS SUPERVISED PRODUCT CHECKS AT RANDOM INTERVALS**
Paragraph	**2.3 Product checks**	
Subject	**On site checks surveillance**	

ANNEX III

2.3. Product checks

A notified body, chosen by the manufacturer, shall carry out product checks or have them carried out at intervals of one year or less, in order to verify the quality of the internal checks on the appliance or the fitting, taking into account, inter alia, the technological complexity of the appliances or the fittings and the quantity of production. An adequate sample of the final appliances or fittings taken on site by the notified body before the placing on the market, shall be examined and appropriate tests as identified by the relevant parts of the harmonised standards, and/or equivalent tests set out in other relevant technical specifications, shall be carried out in order to check the conformity of the appliance or the fitting with the relevant requirements of this Regulation. Where a sample does not conform to the acceptable quality level, the notified body shall take appropriate measures.

The acceptance sampling procedure to be applied is intended to determine whether the manufacturing process of the appliance or the fitting performs within acceptable limits, with a view to ensuring conformity of the appliance or the fitting.

The manufacturer shall, under the responsibility of the notified body, affix the notified body's identification number during the manufacturing process.

Question

How should on-site checks of gas appliances and fittings be organised in order to ensure compliance?

Discussion

Both the manufacturer and the Notified Body have obligations. The manufacturer shall assure access for the chosen Notified Body to the EU type-examination and related test report and design documentation

Reference: (EU 2016/426 "Gas Appliances Regulation" O.J. L81/99 31.03.2016, p.99
Source of guidance document: NBGA-Open

Doc. Number	Rev. Number	Approved by NBGA-Open	Approved by WG-GA	Withdrawn
C3	1	26-03-2019	03-06-2021	--

and must ensure the provision of facilities for the inspection of his products, produced and CE marked under the responsibility of the Notified Body.

The Notified Body may take account of the existence of a manufacturer's quality system with the view to reduce the extent of the inspection. Under these circumstances the Notified Body shall have access to the production line. It shall verify the tests and quality system elements performed by the manufacturer, to achieve conformity with the type.

The Notified Body can at all times, at least once a year, visit the warehouses of the manufacturer or the warehouse of his appointed representative to take one or more samples of the products registered with the Notified Body from a sufficiently representative quantity and on the basis of inspection sheets, test reports and check lists insofar as such exist, to compare whether the samples comply with the type as described in the EU type-examination certificate and with the Essential Requirements of the Gas Appliance Regulation. The manufacturer or his appointed representative shall provide the necessary support.

If the Notified Body is of the opinion that a product must be submitted to inspection test, and also that the inspection cannot be carried out with in-house test equipment, the products which he selects and marks (e.g. with a lead seal) shall be sent to a test laboratory specified by the Notified Body.

The amount of the verification work from the Notified Body shall be concentrated upon verification of critical points, which characterize the safety of the appliance and thereby fulfil the Essential Requirements of the Regulation.

The verification of critical points implies that test of the final products is carried out for principal controls.

In the Annex A are given the list of principal controls, which cover the majority of current gas appliances.

Nevertheless some special appliances may be subject to other requirements with regard to a different technology or design. In such a case the Notified Body shall determine the complementary test. Equally, for certain designs some of the following principal controls may not apply.

The manufacturer has to take all necessary measures to ensure that the manufacturing process results in conformity of appliances with the Essential Requirements of the Regulation. Production or product controls may be carried out, foremost at the end stage of the production and in an adequate way regarding the manufacturing methods and facilities.

The Notified Body must verify the correct result of the principal controls by assuring the documentation and by taking individual responsibilities for issuing a certificate of conformity as a result of the surveillance and considers the under mentioned principal controls as a basis for confirming the conformity of the gas appliance.

According to the procedures for certification of conformity (Annex III of GAR) the Notified Body may perform further appropriate examinations and determine whether these tests need to be performed in full or in part to ensure the conformity of the products with the type. In doing so it applies its own methods and procedures and may have informed the manufacturer thereof in advance.

Conclusion

The Notified Body may take account of all activities, initiated by the manufacturers to assure conformity with the EU type-examination certificate(s), but must assure that all relevant principal controls are carried out on the basis of the list, as the example given in the Annex.

Reference: (EU 2016/426 "Gas Appliances Regulation" O.J. L81/99 31.03.2016, p.99
Source of guidance document: NBGA-Open

Doc. Number	Rev. Number	Approved by NBGA-Open	Approved by WG-GA	Withdrawn
C3	1	26-03-2019	03-06-2021	--

ANNEX

List of principal controls (tests on the final Product)

1. Leakage rate of the components conveying gas (inside and outside)
2. Nominal flow rates and nominal heat input
3. Leakage rate of the components conveying water
4. Working appliance:
    - ignition
    - burners
    - auxiliary equipment and fittings
    - safety ignition devices and flame monitoring
5. Components (shut-off valves, thermostats,...)
6. Combustion:
    - flame stability
    - combustion quality
    - critical emission limits (CO, CO2)
    - tightness of the exhaust gas extraction system
    - tightness of the combustion circuit in type B/C appliances
    - exhaust gas monitor
    - atmosphere monitor
7. Efficiency
8. Safety and regulating systems (governors)
9. Surface temperatures
10. Electrical tests covered by the Low Voltage Directive
    - special electrical test may be required
    - recommendation for tests relating to (CENELEC EN 50106) • earthing continuity • dielectric strength

NOTE: *The manufacturer has to assure proof of the compliance with the safety objectives of electrical hazards laid down in the Low Voltage Directive (2014/35 EU).*

Examples of models for verification by the Notified Body

Type of Inspections	Requirements to Subcontractors	Continuous control during	End stage Control
1. Internal and External leakage rate			
Model 1		+ (100%)	
Model 2			+ (100 %)
2. Nominal Heat input			
Model 1	+ SPC		+ *(spot check)*
Model 2		+ (100%)	
Model 3		+ SPC	+ *(spot check)*
3. Leakage rate of water circuit			
Model 1	+ (100 %)		
Model 2		+ (100%)	
Model 3			+ (100 %)
4. Appliance operation			+ (100 %)
5. Components			
Model 1	+ SPL		+ *(spot check)*
Model 2		+ (100%)	
Model 3			+ (100 %)
6. Combustion			
6.1 Flame stability			+ (100 %)
6.2 Combustion quality			+ *(spot check)*
6.3 Soundness of combustion circuit			+ *(spot check)*
6.4 Safety components			+ (100 %)
7. Efficiency			+ *(spot check)*
8. Electrical Safety			
Model 1	+ SPC		+ *(spot check)*
Model 2		+ (100%)	
9. Surface temperatures			+ *(spot check)*

SPC = Statistical Process Control

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Reference: (EU 2016/426 "Gas Appliances Regulation" O.J. L81/99 31.03.2016, p.99
Source of guidance document: NBGA-Open

Doc. Number	Rev. Number	Approved by NBGA-Open	Approved by WG-GA	Withdrawn
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Gas Appliances Regulation ((EU) 2016 / 426)	
GUIDANCE C 4	**Approved by WG-GA** Y

Guideline related to:

ANNEX	**III**	**Procedure for certification of conformity**
Section	**3 and 4**	**MODULE D: CONFORMITY TO TYPE BASED ON QUALITY ASSURANCE OF THE PRODUCTION PROCESS; and MODULE E: CONFORMITY TO TYPE BASED ON PRODUCT QUALITY ASSURANCE.**
Paragraph	**3.3.3 and 4.3.3**	
Subject	**On site checks surveillance**	

ANNEX III

3.3. Quality system

3.3.3. The notified body shall assess the quality system to determine whether it satisfies the requirements referred to in point 3.3.2.

It shall presume conformity with those requirements in respect of the elements of the quality system that comply with the corresponding specifications of the relevant harmonised standard.

In addition to experience in quality management systems, the auditing team shall have at least one member with experience of evaluation in the relevant product field and the product technology concerned, and knowledge of the applicable requirements of this Regulation. The audit shall include an assessment visit to the manufacturer's premises. The auditing team shall review the technical documentation referred to in point 3.3.1(e), to verify the manufacturer's ability to identify the relevant requirements of this Regulation and to carry out the necessary examinations with a view to ensuring compliance of the appliance or the fitting with those requirements.

The decision shall be notified to the manufacturer. The notification shall contain the conclusions of the audit and the reasoned assessment decision.

And

4.3. Quality system

4.3.3. The notified body shall assess the quality system to determine whether it satisfies the requirements referred to in point 4.3.2.

It shall presume conformity with those requirements in respect of the elements of the quality system that comply with the corresponding specifications of the relevant harmonised standard.

In addition to experience in quality management systems, the auditing team shall have at least one member with experience of evaluation in the relevant product field and product technology concerned, and knowledge of the applicable requirements of this Regulation. The audit shall

Reference: (EU 2016/426 "Gas Appliances Regulation" O.J. L81/99 31.03.2016, p.99
Source of guidance document: NBGA-Open

Doc. Number	Rev. Number	Approved by NBGA-Open	Approved by WG-GA	Withdrawn
C4	1	26-03-2019	03-06-2021	--

include an assessment visit to the manufacturer's premises. The auditing team shall review the technical documentation referred to in point 4.3.1(e), in order to verify the manufacturer's ability to identify the relevant requirements of this Regulation and to carry out the necessary examinations with a view to ensuring compliance of the appliance or the fitting with those requirements.

The decision shall be notified to the manufacturer. The notification shall contain the conclusions of the audit and the reasoned assessment decision.

Question 1 (3.3.3.)

Is certification to EN ISO 9001 obligatory to meet the requirements of sections 3 and 4 of Annex III?.

Conclusion 1 (3.3.3.)

No.

Question 2 (4.3.3)

Can a manufacturer having a certificated EN ISO 9001 quality management system be considered satisfying ANNEX III paragraphs 3.3.3. and 4.3.3. of GAR?

Discussion 2 (4.3.3.)

A quality management system satisfying the requirements of EN ISO 9001 may satisfy the requirements of the factory production control system specified by the Regulation.

An EN ISO 9001 certificate issued by an assessment body recognised by the Notified Body may be taken into account by the Notified Body when undertaking the assessment of the factory production relating to the specific types of products detailed in the EC type-examination certificate

Conclusion 2 (4.3.3.)

No, but EN ISO 9001 may be used partly or to full extent depending on the stated scope of EN ISO 9001. The EN ISO certificate should include as a minimum, those product types for which the manufacturer seeks approval under GAR for the factory production control system.

However, technical aspects relating to type conformity and the specific factory product control procedures pertaining to the manufacture of the product type must be inspected and assessed by a Notified Body for compliance to the GAR

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Gas Appliances Regulation ((EU) 2016 / 426)	
GUIDANCE C 5	**Approved by WG-GA**
	Y

Guideline related to:

ANNEX	**III**	**Procedure for certification of conformity**
Section	**3 and 4**	**MODULE D: CONFORMITY TO TYPE BASED ON QUALITY ASSURANCE OF THE PRODUCTION PROCESS; and MODULE E: CONFORMITY TO TYPE BASED ON PRODUCT QUALITY ASSURANCE.**
Paragraph	**3.3.3 and 4.3.3**	
Subject	**Examination and evaluation of the quality system**	

ANNEX III

3.3. Quality system

3.3.3. The notified body shall assess the quality system to determine whether it satisfies the requirements referred to in point 3.3.2.

It shall presume conformity with those requirements in respect of the elements of the quality system that comply with the corresponding specifications of the relevant harmonised standard.

In addition to experience in quality management systems, the auditing team shall have at least one member with experience of evaluation in the relevant product field and the product technology concerned, and knowledge of the applicable requirements of this Regulation. The audit shall include an assessment visit to the manufacturer's premises. The auditing team shall review the technical documentation referred to in point 3.3.1(e), to verify the manufacturer's ability to identify the relevant requirements of this Regulation and to carry out the necessary examinations with a view to ensuring compliance of the appliance or the fitting with those requirements.

The decision shall be notified to the manufacturer. The notification shall contain the conclusions of the audit and the reasoned assessment decision.

And

4.3. Quality system

4.3.3. The notified body shall assess the quality system to determine whether it satisfies the requirements referred to in point 4.3.2.

It shall presume conformity with those requirements in respect of the elements of the quality system that comply with the corresponding specifications of the relevant harmonised standard.

Reference: (EU 2016/426 "Gas Appliances Regulation" O.J. L81/99 31.03.2016, p.99
Source of guidance document: NBGA-Open

Doc. Number	Rev. Number	Approved by NBGA-Open	Approved by WG-GA	Withdrawn
C5	1	26-03-2019	03-06-2021	--

In addition to experience in quality management systems, the auditing team shall have at least one member with experience of evaluation in the relevant product field and product technology concerned, and knowledge of the applicable requirements of this Regulation. The audit shall include an assessment visit to the manufacturer's premises. The auditing team shall review the technical documentation referred to in point 4.3.1(e), in order to verify the manufacturer's ability to identify the relevant requirements of this Regulation and to carry out the necessary examinations with a view to ensuring compliance of the appliance or the fitting with those requirements.

The decision shall be notified to the manufacturer. The notification shall contain the conclusions of the audit and the reasoned assessment decision.

Question

How should the examination and evaluation of the quality system for production of gas appliances and fittings be carried out?

Discussion

Both the manufacturer and the Notified Body have roles to play when preparing a quality system for a subsequent audit in application of the sections 3 and 4 of Annex III of the Gas Appliance Regulation.

The professional judgement of the Notified Body and the expertise of the manufacturer must be recognised; it should also be emphasised that it is the manufacturer who must decide which module to choose, and the responsibility of the Notified Body to evaluate whether or not the manufacturer's quality system meets the requirements of the Gas Appliances Regulation.

To determine if there are sufficient procedures and instructions in the quality assurance system, which on a continuous basis can assure compliance with the Essential Requirements of the Gas Appliance Regulation, it is necessary to work out quality plans.

The quality plans must include testing of appliances or fittings. In the material shown below, are given examples of tests, which often are necessary to assure conformity.

Nevertheless, manufacturers may expect to carry out additional tests on a sampling basis, e.g. EMC, Life Tests, Material Tests, etc. The matrix is therefore devised as a guide to the ongoing tests that are normally carried out on appliances/fittings to ensure continuous conformity with the Gas Appliances Regulation.

Quality plans for certification of gas appliances

						CENELEC EN 50106											
APPLIANCES	GAS SOUNDNESS	FLOW RATE (GAS)	BURNER IGNITION	BURNER AERATION	BURNER X LIGHTING	EARTH CONTINUTY	HIGH VOLTAGE	INSULATION RESISTANCE	FLAME SUPERVISION DEVICE	COMBUSTION	SURFARCE TEMPERATURES	THERMOSTAT	PRESSURE LIMIT SWITCHES	FAN OPERATION	COMBUSTION CIRCUIT SOUNDNESS	FLUE GAS SPILLAGE	THERMAL DOWN DRAUGHT
COOKER	100%	100%	100%	100%	100%	100%	100%	100%	100%	S	S	S	I/A	100%	N/A	N/A	N/A
C.H. BOILER	100%	100%	100%	100%	100%	100%	100%	100%	100%	S	S	S	100%	100%	S	S	S
ROOM HEATER	100%	100%	100%	100%	100%	100%	100%	100%	100%	S	S	S	100%	100%	S	S	S
RADIANT CONVECTOR HEATER	100%	100%	100%	100%	100%	100%	100%	100%	100%	S	S	S	100%	100%	S	S	S
WATER STORAGE HEATER	100%	100%	100%	100%	100%	100%	100%	100%	100%	S	S	S	100%	100%	S	S	S
GAS FIRE	100%	100%	100%	100%	100%	100%	100%	100%	100%	S	S	S	100%	100%	S	S	S
BACK BOILER	100%	100%	100%	100%	100%	100%	100%	100%	100%	S	S	S	100%	100%	S	S	S
OTHER APPLIANCES (if relevant)	100%	100%	100%	100%	100%	100%	100%	100%	100%	S	S	S	100%	100%	S	S	S

Doc. Number	Rev. Number	Approved by BGA-Open	Approved by WG-GA	Withdrawn
C5	1	26-03-2019	03-06-2021	--

Quality plans for the certification of fittings

CONTROLS	GAS SOUNDNESS	FUNCTIONAL SAFETY (*)	ELECTRICAL SAFETY
Gas valves/ cocks	100%	100%	100%
Electric. temperature controllers	N/A	100%	100%
Mechanical (gas) temperature controllers	100%	100%	100%
Air flow and Pressure Level controllers	N/A	100%	100%
Gas pressure switches	100%	100%	100%
Igniters/sensors		100%	100%
Safety electronics	N/A	100%	100%
Other appliances (if relevant)	100%	100%	100%

* These tests may relate to temperature limits and/or time

Key to matrix:

100 % = These tests are usually carried out on every appliance produced bearing the CE Mark

S = These tests are usually carried out on a regular statistical basis, daily, weekly, etc. at the manufacturer's discretion.

N/A = This indicates that the particular tests are not applicable to the appliance.

I/A = This indicates that the tests are usually carried out if the appliance is fitted with the component referenced.

Note

In Annex is given a list of terminology, which can be helpful in understanding the text of Annex III sections 3 and 4 in the Gas Appliance Regulation.

Conclusion

The Notified Body must ensure that sufficient tests form part of the manufacturer's quality assurance system, based on a quality plan as the example given in the above shown matrix.

Other similar approaches are equally applicable.

ANNEX

Hints of terminology

The following terms, together with related definitions and considerations, can be helpful in understanding the Essential Requirements of Gas Appliances Regulation, as defined in Annex III section 3 and 4.

'Quality system' is the organizational structure, responsibilities, procedures, processes, resources for implementing quality management in this context to ensure that CE marked products continue to meet the requirements of the Regulation.

'Quality plan' in the context of the Regulation, are those specific testing, inspection, examination, and product audit programs unique to gas burning products which will ensure the continuing conformity of the product with the safety requirements.

'Quality records', and charts pertaining to design data as appropriate for EU testing, inspection, survey, audit or review or related results, providing supporting evidence of continuing conformity with the safety requirements. Records must form part of the quality plan and be compatible with the requirements of the Regulation, and any agreements between Notified Bodies.

'Safety audit plans' are the manufacturers means of defining the specific activities and responsibilities for persons auditing the company's quality system in an organized way, recording the results and taking appropriate action to ensure that the system continues to maintain the product with the safety requirements of the Regulation.

'Purchasing' of products, components, and sub-contracted services used in the manufacturer of products carrying the CE marks must be procured from sub-contractors selected on their ability to meet the defined specification, and the capability performance.

In the context records of sub-contractors performance is an important factor and also the manufacturers system for corrective action, should the sub-contractor fail to meet the manufacturers specification.

'Special processes': There will be processes within a company where the results cannot be verified by subsequent inspection and testing, and therefore appropriate tests must be specified.

'Final inspection and testing' must be included in the Quality Plans and include tests that will ensure that the product meets the safety requirements of the Regulation. Such tests must be recorded, and available to Notified Bodies during assessment of the manufacturer's premises (Factory).

'Inspection and measuring and test equipment' used in the manufacturers verification of the product in relation to the safety requirements must be identified and calibrated, where appropriate, on a regular and formal basis and records retained.

'Inspection test status' is the method of identifying the test status of the product and can include, stamps, tags, labels, routing cards, test software, location, etc.

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Gas Appliances Regulation ((EU) 2016 / 426)	
GUIDANCE C 6	**Approved by WG -GA** Y

Guideline related to:

CHAPTER	**III**	**CONFORMITY OF APPLIANCES AND FITTINGS**
Article	***13***	**Presumption of conformity of appliances and fittings**
Paragraph	**-**	
Subject	**Application of uncertainty of measurement to conformity assessment activities in the gas technical sector when using harmonised standards**	

Article 13 Presumption of conformity of appliances and fittings

Appliances and fittings which are in conformity with harmonised standards or parts thereof the references of which have been published in the *Official Journal of the European Union* shall be presumed to be in conformity with the essential requirements set out in Annex I covered by those standards or parts thereof.

Question

- Is it required to correct the measured result of a test with the uncertainty of measurement of that test for conformity assessment based on the requirements indicated in harmonised standards?

Discussion

Many labs are accredited using the national version of the ISO/IEC 17025. Clause 5.4.6.2; and Clause 5.10.3.1 item c give guidance on this point. These clauses give room for sectoral interpretation. ILAC document G8:03/2009 ”Guidelines on the Reporting of Compliance with Specification” in Clause 2.7 suggests a solution that can also be applied in sectoral decisions on compliance with standards. For some sectors guidance on this interpretation exists already for long time. The gas sector has a well-established tradition on this subject but this tradition has not been formalized so far.

For the gas sector the requirements in standards are set in such a way, that no correction of the measured result is required, provided that the “state of the art” test methods are used.

The motivation for this is similar to the motivation given:

- IECEx OD 012 for the sector using IECEx standards, Or
- IEC Guide 115 for conformity assessment activities in the electrotechnical sector.

Conclusion

It is not required to correct the measured result of a test with the uncertainty of measurement of that test for conformity assessment based on the requirements indicated in harmonized standards used in the gas sector.

See Annex I for further clarification on this conclusion.

Reference: (EU 2016/426 “Gas Appliances Regulation” O.J. L81/99 31.03.2016, p.99;
Source of guidance document: NBGA-Open

Doc. Number	Rev. Number	Approved by NBGA-Open	Approved by WG-GA	Withdrawn
C6	**-**	**08-10-2019**	**03-06-2021**	**--**

References:

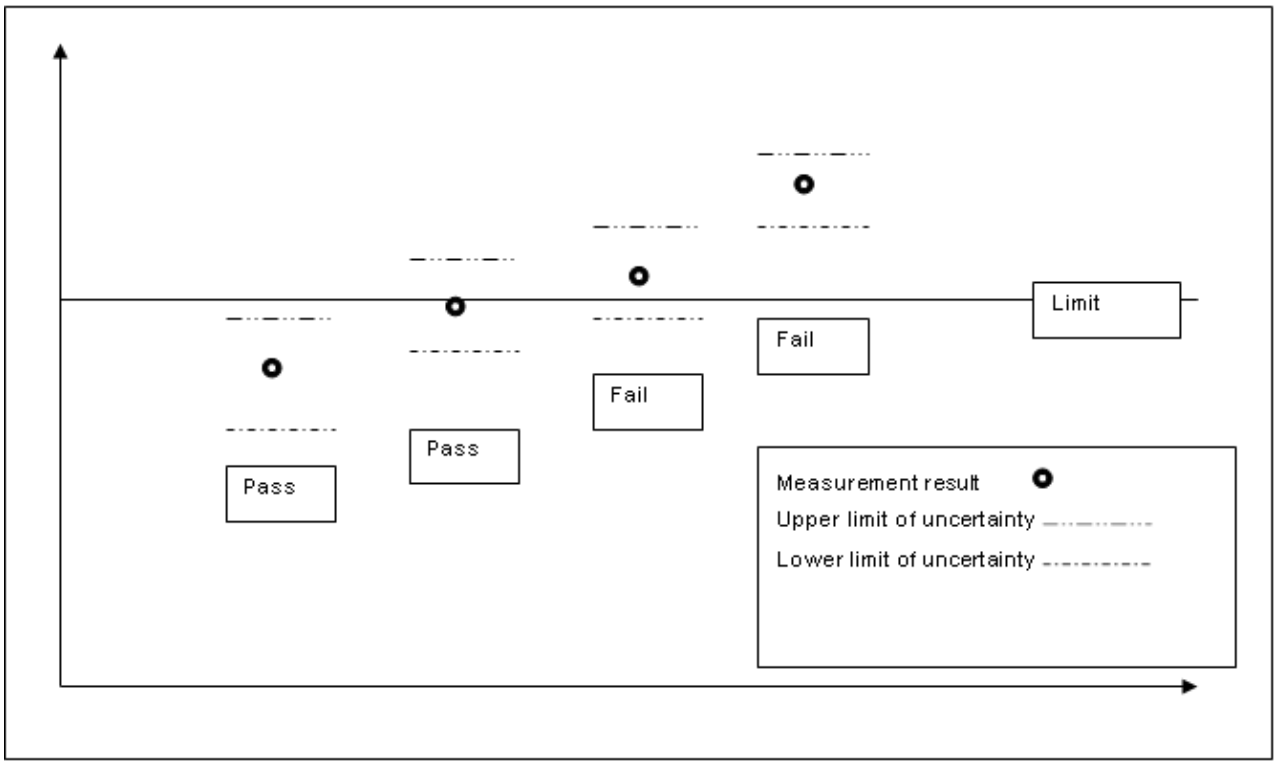
1. IECEx OD 012 2009 (E) Edition 2 2009-03 “ExTAG Guide for Application of Uncertainty of Measurement to conformity for laboratory tests carried out under the IECEx System”

Available at: http://www.iecex.com/publications/operational-od/ search for OD 012

2. IEC GUIDE 115 ED. 1.0 B:2007; “Application of uncertainty of measurement to conformity assessment activities in the electrotechnical sector”

3. ILAC G8:03/2009 ”Guidelines on the Reporting of Compliance with Specification”

ANNEX I: Clarification on the conclusion



Gas Appliances Regulation ((EU) 2016 / 426)	
GUIDANCE C7	**Approved by WG-GA**
	Y

Guideline related to:

ANNEX	**III**	**Conformity Assessment Procedures for Appliances and Fittings**
Section	**2-5**	**Module C2, D, E, F conformity to type**
Paragraph	2.3, 3.3.3, 4.3.3, 4.4.3, 4.4.4, 5.3.	
Subject	EC Surveillance during Extra-ordinary circumstances with travelling restrictions	

ANNEX III

2.3. Product checks. A notified body, chosen by the manufacturer, shall carry out product checks or have them carried out at intervals of one year or less, in order to verify the quality of the internal checks on the appliance or the fitting, taking into account, inter alia, the technological complexity of the appliances or the fittings and the quantity of production. An adequate sample of the final appliances or fittings taken on site by the notified body before the placing on the market, shall be examined and appropriate tests as identified by the relevant parts of the harmonised standards, and/or equivalent tests set out in other relevant technical specifications, shall be carried out in order to check the conformity of the appliance or the fitting with the relevant requirements of this Regulation. Where a sample does not conform to the acceptable quality level, the notified body shall take appropriate measures. The acceptance sampling procedure to be applied is intended to determine whether the manufacturing process of the appliance or the fitting performs within acceptable limits, with a view to ensuring conformity of the appliance or the fitting.

3.3.3. The notified body shall assess the quality system to determine whether it satisfies the requirements referred to in point 3.3.2. It shall presume conformity with those requirements in respect of the elements of the quality system that comply with the corresponding specifications of the relevant harmonised standard. In addition to experience in quality management systems, the auditing team shall have at least one member with experience of evaluation in the relevant product field and the product technology concerned, and knowledge of the applicable requirements of this Regulation. The audit shall include an assessment visit to the manufacturer's premises. The auditing team shall review the technical documentation referred to in point 3.3.1(e), to verify the manufacturer's ability to identify the relevant requirements of this Regulation and to carry out the necessary examinations with a view to ensuring compliance of the appliance or the fitting with those requirements….

4.3.3. The notified body shall assess the quality system to determine whether it satisfies the requirements referred to in point 4.3.2. It shall presume conformity with those requirements in respect of the elements of the quality system that comply with the corresponding specifications of the relevant harmonised standard. In addition to experience in quality management systems, the auditing team shall have at least one member with experience of evaluation in the relevant product field and product technology concerned, and knowledge of the applicable requirements

Reference: (EU 2016/426 "Gas Appliances Regulation" O.J. L81/99 31.03.2016, p.99
Source of guidance document: NBGA-Open

Doc. Number	Rev. Number	Approved by NBGA-Open	Approved by WG-GA	Withdrawn
C7	-	05-10-2021	20-05-2022	--

of this Regulation. The audit shall include an assessment visit to the manufacturer's premises. The auditing team shall review the technical documentation referred to in point 4.3.1(e), in order to verify the manufacturer's ability to identify the relevant requirements of this Regulation and to carry out the necessary examinations with a view to ensuring compliance of the appliance or the fitting with those requirements….

4.4.3. The notified body shall carry out periodic audits at least once every two years to make sure that the manufacturer maintains and applies the quality system and shall provide the manufacturer with an audit report.

4.4.4. In addition, the notified body may pay unexpected visits to the manufacturer. During such visits the notified body may, if necessary, carry out product tests, or have them carried out, in order to verify that the quality system is functioning correctly. The notified body shall provide the manufacturer with a visit report and, if tests have been carried out, with a test report.

5.3. Verification. A notified body chosen by the manufacturer shall carry out appropriate examinations and tests, or have them carried out, in order to check the conformity of the appliances or fittings with the approved type described in the EU type-examination certificate and with the appropriate requirements of this Regulation….

Description of situation:

Due to Extraordinary Circumstances like travel restriction, it is sometimes impossible to perform On-going Surveillance and Follow-up at the Manufacturing Site as originally scheduled. A solution would be postponing the scheduled audits or a remote EC Surveillance inspection and audit by means of information and communication technology (ICT) based on IAF MD 4:2018, Issue 2.

Question

What is authorised to do in such circumstances in order to act as a Notified Body?

Discussion

1. Scheduled surveillance audits – Postponed for up to 6 months

The scheduled surveillance audits of organizations holding a GAR Production Surveillance Certificate in accordance with module C2, D or E may be postponed for a maximum period not exceeding 6 months on the strict provisions of:

1. That there are no outstanding nonconformances; and
2. That the Notified Body is not aware of any complaints or concerns that could give rise to the Notified Body questioning the on-going compliance of the organization covered by the GAR Production Surveillance Certificate in accordance with module C2, D and/or E, with the requirements of Regulation (EU) No. 2016/426 (supported by the relevant requirements of the applied Quality Management Standard, if any used).

2. Scheduled surveillance audits

Where clause 1 is not met or for periods beyond 6 months or for the processing of scope extensions, that normally require a site visit, the following provisions apply:

1. The use of video communication may be considered for closing out issues raised during a previous site audit visit associated with the scope of certification.
2. Video communication may be used to gather the objective evidence required to demonstrate a manufacturer's compliance with the relevant requirements to enable the surveillance or re-assessment factory audit to be conducted as required by Regulation (EU) No. 2016/426. The Notified Body shall determine the applicability and use of this method.
3. Video Communication may be used to gather the objective evidence required to demonstrate a manufacturer's compliance with the relevant requirements of Regulation (EU) No. 2016/426 when processing an application for an "up issue" of the certification scope. The Notified Body shall determine the applicability and use of this method.
4. The Notified Body may require the organization / manufacturer to provide results of the organization's previously conducted internal audit for the Notified Body to review and gather sufficient evidence that the relevant requirements of Regulation (EU) No. 2016/426 continue to be met. The Notified Body may also require the organization / manufacturer to conduct an internal audit under the instruction of the Notified Body. Organizations / manufacturers may also be audited by other third-party gas appliances auditing companies for the purpose of national certification schemes. These audit results should also be assessed where they exist.

The main point to stress is that even during situations arising from Extraordinary Circumstances, including Events, it is not acceptable for a Notified Bodies to simply do nothing as they are responsible to exercise some level of surveillance over the organisations to which they have issued a GAR Production Surveillance Certificate in accordance with module C2, D or E.

Conclusion

For Notified Bodies that have issued a GAR Production Surveillance Certificate in accordance with module C2, D or E to organizations (e.g. manufacturers) located in countries / regions / areas impacted by Extraordinary Circumstances, where travel to that area is restricted, the requirements of 1.1 and 1.2 shall apply.

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Gas Appliances Regulation (EU) 2016 / 426	
GUIDANCE C8	**Approved by WG-GA** **Y**

Guideline related to:

ANNEX	**III**	**Conformity assessment procedures for appliances and fittings**
Section	**1**	**Module B: EU Type-Examination — Production Type**
Paragraph	**1.6**	
Subject	**Indication of gas group, type of gas and the appliance category for H2NG appliances.**	

1.6 Where the appliance or the fitting type meets the requirements of this Regulation, the notified body shall issue an EU type-examination certificate to the manufacturer. The certificate shall contain the name and address of the manufacturer, the conclusions of the examination, the conditions (if any) for its validity, the necessary data for identification of the approved type, such as the ***type of gas****, appliance category and* ***gas supply pressure****, and, if relevant, descriptions of its functioning. The certificate may have one or more annexes attached.*

Question

Currently the EN 437:2021 does not give any indications regarding blending of hydrogen and natural gas (H2NG). Therefore, how to mention in the EU Type examination certificate, according to GAR, the suitability of gas appliances for burning H2NG, pending to include H2NG in the new revision of the EN 437 ?

Discussion

GAR Regulation applies to appliances (and related fittings) burning gaseous fuels. Article 2(6) of GAR states *"gaseous fuel" means any fuel which is in gaseous state at temperature of 15°C under an absolute pressure of 1 bar*. Therefore, also the blending of hydrogen and natural gas (H2NG) is included in GAR Regulation, even if H2NG is still not mentioned in EN 437:2021.

Currently the H2NG topic is discussed within CEN/TC 238 WG1 for the revision of EN 437 and an Ad Hoc group has been created, also open to experts of CEN/TC 109 who is working on the new standard CEN/TS 15502-3-1, related to appliances type ACCF and PGAR burning blending of natural gas and hydrogen up to 20%.

Therefore, in order to be aligned with the guidance of the above-mentioned working groups, between the various options on how to indicate H2NG in EU Type Examination Certificate, seems convenient to adopt the same suffix ***Y20***, according to the last draft of the FprCEN-TS 15502-3-1. Consequently, for instance, a second family gas blending (until 20% H2) category would be named ($\mathbf{I_{2\_Y20}}$).

Reference: EU 2016/426 "Gas Appliances Regulation" O.J. L81/99 31.03.2016, p.99
Source of guidance document: NBGA-Open

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C8	--	10-10-2023	26-04-2024	--

Conclusion

The suitability of gas appliances for burning H2NG, pending to include H2NG in the new revision of the EN 437, should be mentioned in the EU Type Examination Certificate like the following:

Gas groups:

Group	mbar
H	20
E	20
N	20 - 25

Group	mbar
HY20	20
EY20	20
NY20	20 - 25

The above gas groups can be combined according to the standard EN437:2021 and national situation of countries.

Note : Suffix "Y20" means that the appliances are suitable for the use of natural gas of the indicated gas group, mixed with hydrogen resulting in a gas mixture containing up to 20% of Hydrogen gas (H_2) when the appliance is set for the reference gas G20.

N.B. It is intended that the above-mentioned gas groups could be listed differently

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