EGAC Guide for Accreditation of Gas Appliances Product C.B

PB10Pd

Prepared by: Product Certification Body Manager
Mohamad Alfiky

Reviewed & Authorized by: EGAC Accreditation Director
Mohamed Osman

Table of Modification

Mod. No./Date	Proposed by	Page No.	Modification in brief (old/new, added, cancelled)
Annual Doc. Revision Jan 2021	Quality Manager	All Pages	Annual revision for this document, Conducted by Mohamed AlFiky PdCBs Acc. Manager. And no changes needed.

1. General

This guide is based on regulation (EU) 2016/426 on appliances burning gaseous fuels and repealing Directive 2009/142/EC (GAR**)** and covers mainly the essential requirements described in annex I of the GAR and conformity assessment procedures described in annex III of the GAR. The Regulation applies to appliances and fittings burning gaseous fuels. Item directly related to matters of the European Union has been adapted to the situation in Egypt.So EU type examination has been replaced by type examination, Notified body (NB) by CAB, and CE marking replaced by quality mark.

The subject of this guide is to enable experts of an accreditation body to perform an accreditation audit of a Conformity Assessment Body (CAB). The accreditation body has to evaluate the ability of a CAB, to perform conformity assessment of products of a manufacturer by means of

- The evaluation of the documents, prepared by the CAB (regulations, procedures, certification schemes….) foreseen for conformity assessment and their implementation,
- Witnessing complete conformity assessment(s) of a CAB, included visit(s) at manufacturer(s) premises.

2. Requirements to the Accreditation body

An accreditation body shall provide accreditation services in accordance with accepted established principles of quality system management and the internationally agreed requirements and recommendations for the accreditation activities mentioned in ISO/IEC17011 and in accordance with the requirements of both the International Accreditation Forum (IAF) & the International Laboratory Accreditation Cooperation (ILAC**).**

The accreditation body has to prepare procedures and instructions dealing with the accreditation audit for the CAB. Beside others, information has to be given about the amountof conformity assessments to be witnessed and the amount of mandays per witnessed conformity assessments.

2.1 Amount of conformity assessments to be witnessed

As described in item 7 the conformity assessment consists of of 3 main parts:

a) Evaluation of the technical documentation of the manufacturer
b) Clarification of the result of the evaluation between manufacturer and CAB
c) Conformity assessment(s) which consists of the type examination together with one of the modules C2, D, E, F or only of module G.

For these modules/ module combinations the accreditation body shall define the amount of witnessed conformity assessments and the amount of mandays per the CAB's conformity assessment..

The amount of witnessed assessments depend on the modules/ module combinations applied by the CAB for accreditation.The modules are detailled described in item 6.1 and in annex III.

1. Module B- Type examination

A complete type examination has to be witnessed. In case the type examinatıon has been performed by a dıfferent CAB only the type examination certificate has to be controlled. For the same product, the type examination performed, is valid for all the modules C2, D ,E,and F.

2. Module C2 and F

On the baseof the witnessed type examination a conformity assessments acc .to module C2 and another acc. to F has to be witnessed.

3. Module D and E

On the base of the witnessed type examination a conformity assessments acc .to module D and another acc. to E has to be witnessed.

In case a CAB asks for accreditation for both modules together, it is enough to witness the conformity assessment of one of the modules. For the other module the control of the documents, prepared by the CAB and used for conformity assessment is sufficient.

4. Module G

A conformity assessment acc. to modüle G has to be witnessed.

2.2 Amount of man days per witnessed conformity assessments

The amount of mandays per assessment depend on the complexity of the appliance,

- Amount of pieces produced within a period defined,
- Amount of product checks performed during manufacture by the manufacturer per a defined period,
- Used solution for compliance with the essential requirements (Egyptian standard or other solutions totally or partly).

The amount of man days per conformity assessment is already defined by the CAB in its regulation for and will be approved by the accreditation body.. Therefore the amount of man days for witnessing should cover one complete conformity assessment.

3. Basic requirements to the Conformity assessment body

A conformity assessment body shall

- Be established under the national law of a State and have legal personality.
- Be a third-party body independent of the organisation or the appliance or the fitting it assesses
- Not be the designer, manufacturer, supplier, installer, purchaser, owner, user or maintainer of the appliances or the fittings which they assess, nor the representative of any of those parties..
- Not be directly involved in the design, manufacture or construction, the marketing, installation, use or maintenance of those appliances or fittings, or represent the parties engaged in those activities
- Not be engaged in consultancy services.
- Ensure that the activities of their subsidiaries or subcontractors do not affect the confidentiality, objectivity or impartiality of their conformity assessment activities.

- Be free from all pressures and inducements, particularly financial, which might influence their judgment
- Be capable of carrying out all the conformity assessment tasks assigned to it.

For each conformity assessment procedure and each kind or category of appliances or fittings in relation to which a conformity assessment body has been designated, It shall have:

a) Personnel with technical knowledge and sufficient and appropriate experience
b) Descriptions of procedures in accordance with which conformity assessment is carried out
c) Procedures for the performance of activities which take due account of the size of an undertaking, the sector in which it operates, its structure, the degree of complexity of the appliance or fitting technology in question and the mass or serial nature of the production process.

The personnel shall have the following:

a) Sound technical and vocational training covering all the conformity assessment activities
b) Satisfactory knowledge of the requirements of the assessments
c) Appropriate knowledge and understanding of the essential requirements of the applicable Egyptian Standards;
d) The ability to draw up certificates, records and reports

The impartiality, shall be guaranteed.

4. Essential Requirements of GAR

The Essential Requirements are compulsory. Within these requirements three main chapters are existing:

4.1 General Requirements

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

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

All appliances shall be accompanied by instructions for installation, for use and servicing, and bear appropriate warning notices, which shall also appear on the packaging.

4.2 Materials

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

4.3 Design and Construction

4.3.1 General items

Appliances shall be so designed and constructed that, when normally used, no instability, distortion, breakage or wear likely to impair their safety may occur. Main items are:

- Condensation.
- Risk of explosion in the event of a fire of external origin.
- Water and inappropriate air penetration into the gas.

- Gas-related risks due to hazards of electrical origin.or originating from electromagnetic phenomena.
- Failure of a safety, controlling or regulating device.
- Functioning of safety and controlling devices.
- Parts of appliances set or adjusted at the stage of manufacture.
- Levers and other controlling and setting devices.

4.3.2 Unburned gas release

4.3.3 Ignition

4.3.4 Combustion

4.3.5 Rational use of energy

4.3.6 Temperature

5. Presumption of conformity of appliances and fittings

To fulfil the essential requirements Egyptian standards can be applied.

Appliances and fittings which are in conformity with Egyptian Standards shall be presumed to be in conformity with the essential requirements. The relations between the essential requirements of the GAR and the solutions, described in the Egyptian standard concerned, are listed in the annex ZA of any Egyptian Standard.

6. Requirement in the Gas Appliance Regulation 426/EU for conformity assessment of appliances and fittings

Before an appliance or a fitting is placed on the market, the manufacturer shall submit it to a conformity assessment procedure called module. For all conformity assessment procedures a CAB shall be involved. It is the choice of the manufacturer, which module or module combinations he wants to be applied.

6.1 Conformity assessment procedures

6.1.1 GAR describes 6 different procedures -modules- for conformity assessment of appliances and fittings

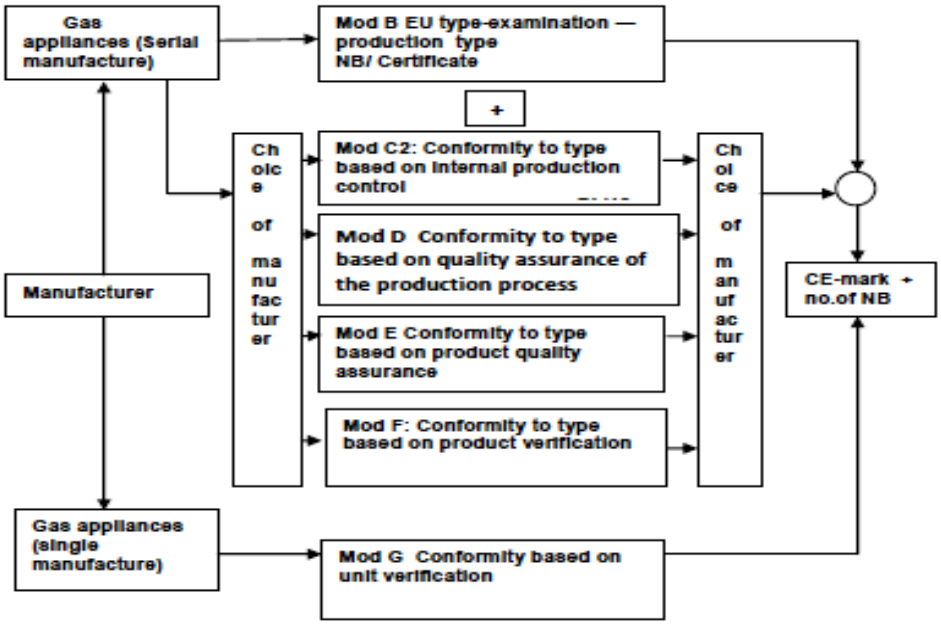
1. MODULE B: EU TYPE-EXAMINATION — PRODUCTION TYPE,
2. MODULE C2: CONFORMITY TO TYPE BASED ON INTERNAL PRODUCTION CONTROL PLUS SUPERVISED PRODUCT CHECKS AT RANDOM INTERVALS,
3. MODULE D: CONFORMITY TO TYPE BASED ON QUALITY ASSURANCE OF THE PRODUCTION PROCESS,
4. MODULE E: CONFORMITY TO TYPE BASED ON PRODUCT QUALITY ASSURANCE,
5. MODULE F: CONFORMITY TO TYPE BASED ON PRODUCT VERIFICATION,
6. MODULE G: CONFORMITY BASED ON UNIT VERIFICATION.

For the conformity assessment the single application of the modules B, C2, D, E, and F is not possible. Module B-type examination - has to be always used in combination with the other modules.

Only module G-unit verification- can be used as a single module.

Conformity assessment schemes acc. to GAR

Remark for Egypt:
EU type examination to be replaced by Type examination NB (Notified body) to be replaced by Designated Body CE mark to be cancelled or to be replaced by an Egyptian quality mark.



7. Activities of CAB within different modules

The assessment consists of 3 main parts:

a) Evaluation of the technical documentation of the manufacturer
b) Clarification of the result of the evaluation between manufacturer and CAB
c) Conformity assessment(s) which consists of the type examination together with one of the modules C2, D, E, or F or only of module G.

As already mentioned, for the assessment of the CAB by the accreditation body these items have to be witnessed and evaluated by the experts of the accreditation body.

Module B is valid for all module combination. Therefore only one type examination has to be performed.

7.1 Module B TYPE-EXAMINATION — PRODUCTION TYPE

Type-examination is the part of a conformity assessment procedure in which a CAB examines the technical design of an appliance or a fitting and verifies and attests that the technical design of the appliance or the fitting meets the requirements of GAR. An assessment of the adequacy of the technical design through examination of the technical documentation plus examination of a representative specimen, of the complete appliance or fitting (production type) has to be carried out.

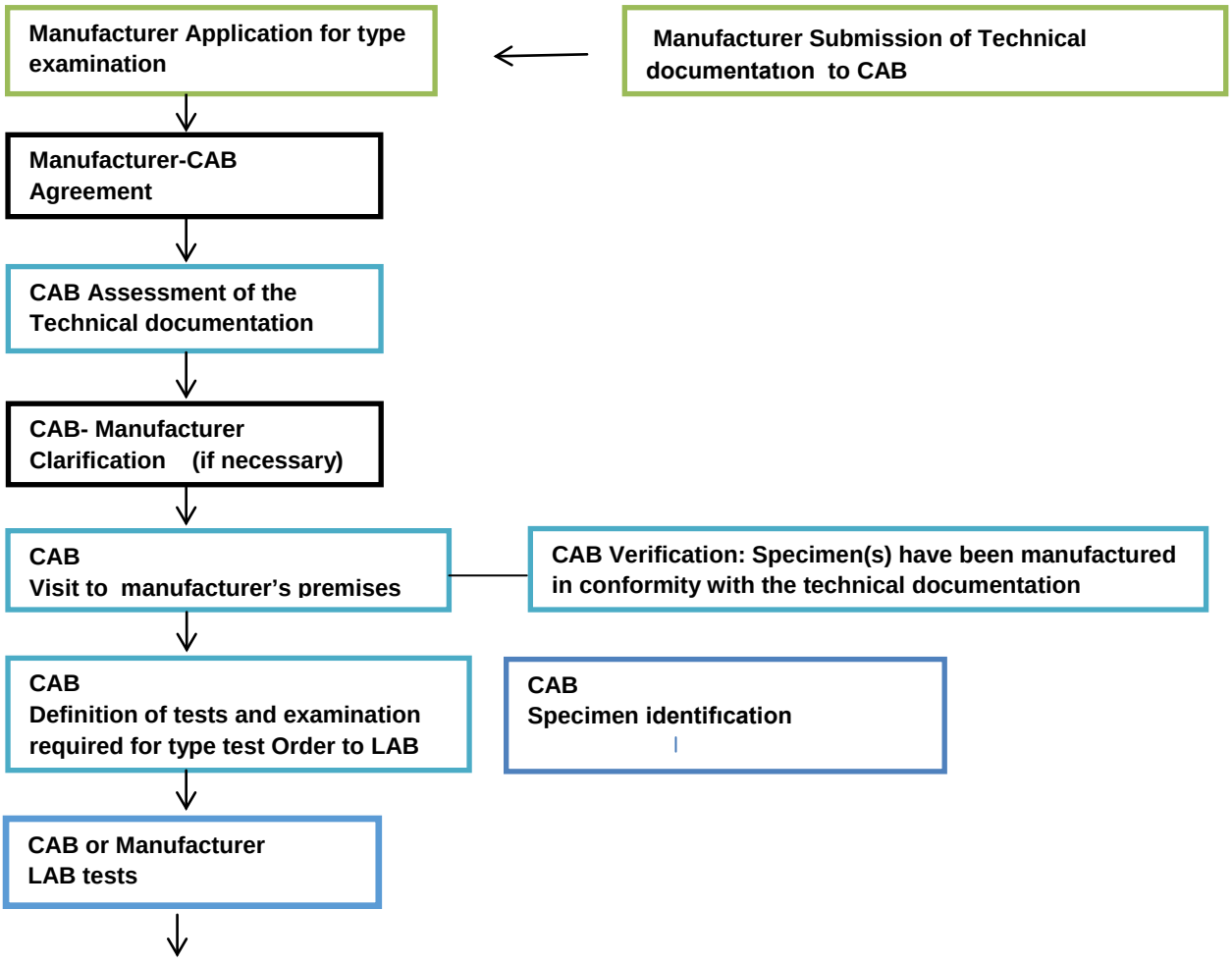
The following flow-chart shows the main activities öf manufacturer and CAB. It starts with the agreement between manufacturer and CAB about certification and ends with the issuing of the type examination certificate by the CAB.In between there is the control of the Technical documentation, visit on manufacturer's premises and taking a specimen by the CAB and the functıon tests with the specimen for ignition, combustion, flame stability, etc. in a lab. Visual inspection is also included.A detailed description for module B is given in annex I.

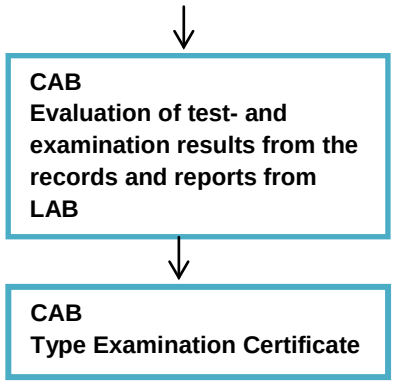
One type examination is valid for all modüle combinations.

7.2 MODULE C2: conformıty to type based on ınternal productıon control plus supervısed product checks at random ıntervals

Conformity assessment of appliances or fittings acc.to the module C2 is based on product checks of the final product at least once per year. The CAB has to prepare a schedule for the amount of product checks per year, the location of the checks and foreseen tests with the final product. A detailed description for module C2 is given in annex II.

Flow chart for Type examination





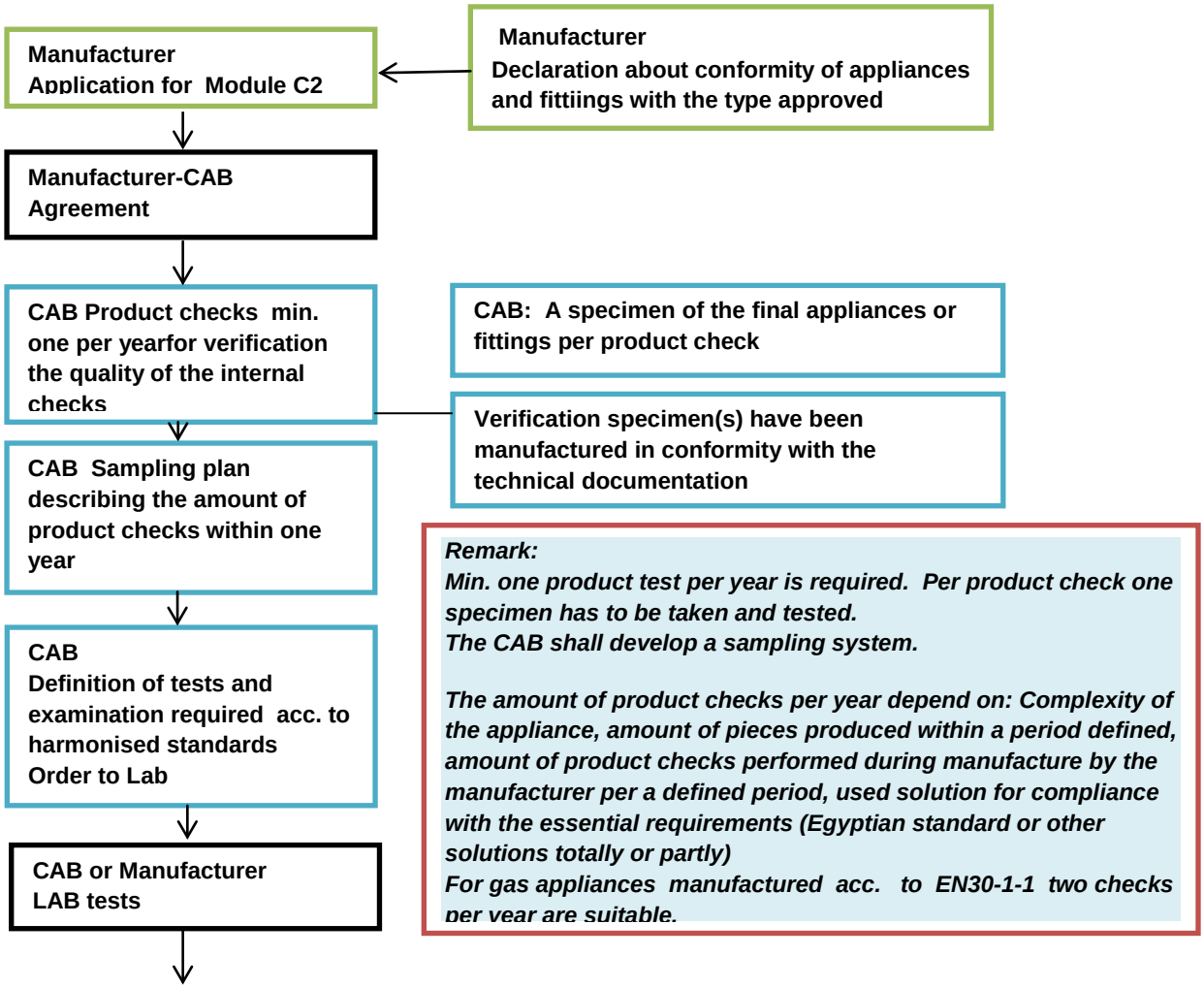
Remark:

The single tests acc. to GAR have to be performed one time. One specimen is enough if all tests required can be performed with one specimen. If not the amount of specimen can be increased. For gas appliances manufactured acc. to EN30-1-1 normally one specimen is enough.
One type examinationis valid for all module combinations.

Main items to be witnessed by Accredtaion body:

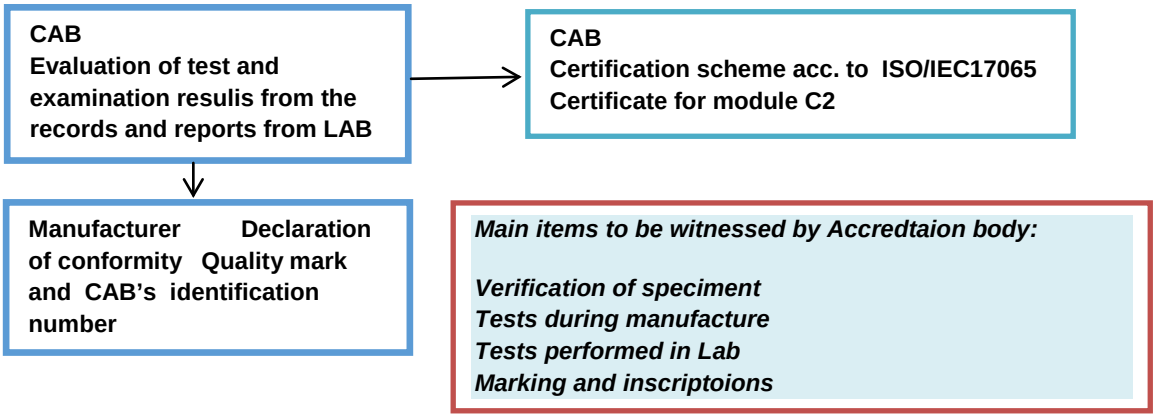
Evaluation of Technical documentation
Verification of speciment
Tests performed in Lab

Flow chart for module C2



Remark:
Min. one product test per year is required. Per product check one specimen has to be taken and tested.
The CAB shall develop a sampling system.

The amount of product checks per year depend on: Complexity of the appliance, amount of pieces produced within a period defined, amount of product checks performed during manufacture by the manufacturer per a defined period, used solution for compliance with the essential requirements (Egyptian standard or other solutions totally or partly)
For gas appliances manufactured acc. to EN30-1-1 two checks per year are suitable.



8. Others

8.1 Requirements to Technical Assessors of Accreditation Body

- **Duties and responsibilities**
  - Witnessing conformity assessments of CAB
  - Witnessing Lab tests / Control of test results / Witnessing Lab qualifications
  - Evaluation of documents of CABs prepared for conformity assessment
  - A technical assessor may also conduct assessment of the management system, if deemed competent to do so.
  - Assistance of the Lead auditor
- **Qualifications-**
  - Mech./ technical engineer
  - Technical background about products to be assessed
  - Working experience in the field of manufacturing of gas appliances min. 2 years or testing of gas appliances in lab for min 1year
  - Knowledge about technical standards / GAR of gas appliances or fittings
  - Knowledge in conformity/accreditation activities (ISO/IEC17065/ ISO/IEC 17025)
  - Knowledge in management system auditing
  - English language: Writing, speaking good
  - Ability to work in team
  - Skills in negotiation
  - Work experience in a conformity assessment body or accreditation body

8.2 Criteria for the evaluation of a sampling system acc. to module C2 –product checks at random intervals

The following criteria should be taken into consideration for evaluation of the amount of product check CAB's sampling system. CAB has to define the amount of product checks within max. one year:

- Amount of appliances / fittings (same product) manufactured per a defined period (max. one year)
- Amount of locations manufacturing appliances or fittings
- Complexity of the product type
- Manufacture of one product type or more than one product type

- Manufacture acc. to Egyptian standard only or other solutions replacing the standard partly / totally are applied.
- Amount of product checks performed by the manufacturer during manufacture and amount of tests performed per specimens
- Kind and amount of tests performed acc. to the Egyptian Standard will be performed at one appliance or fitting
- Increase of specimen in case of failure
- Increase of the amount of product checks within one year period in case of failure

8.3 Qualification for witnessing Lab tests

Technical assessors foreseen for witnessing Lab tests required acc. to GAR and EN 30-1-1 shall have at least half year experience in a Lab performing similar or same tests. If an assessment of a Lab on the base of ISI/IEC17025has to be witnessed, min. a one year experience in an adequate Lab is required**.**

9. ANNEXES

ANNEX I ACTIVITIES acc. to MODULE B TYPE EXAMINATION
ANNEX II ACTIVITIES acc. to MODULE C2
ANNEX III COMPARISON of MODULES

ANNEX I

ACTIVITIES ACCORDING TO MODULE B TYPE EXAMINATION

Module type	Respons. organisation	Obligations	Explanations
Type examination Essential requirements of annex ZA of the Egyptian standard shall be fulfilled	CAB	Assessment of technical design by examination of - the technical documentation - a specimen of the complete appliance	
	Manufacturer	Application to a single CAB: - Name address of manufacturer/ representative - Declaration: The same application has not been lodged with any other notified body - Technical documentation - Specimens representative of the production	Technical documentation Description of the appliance or the fitting: - Design and manufacturing drawings and schemes of components - Harmonised standards applied relevant technical specifications applied. - Results of design calculations examinations carried out, - Test reports - Instructions for installation and use - EU declaration of conformity of the fitting incorporated into an appliance
	CAB	For the appliance or the fitting: Examination of the technical documentation to assess the adequacy of the technical design of the appliance or the fitting.	- Type-examination certificate and its annexes: Contain all relevant information to allow the conformity of manufactured appliances or fittings with the examined type to be evaluated Maximum validity period of ten years - Visual inspection On final product and/or necessary at partly assembled appliances or fittings. - Identification of fittings assembled in the appliance - Control of marking and inscriptions on appliance and package - Language of the warnings and inscriptions - Name plate - Warnings - edges - Damages performed bay handling - Instructions - Control handles with inscriptions - Examinations and tests in Lab 1. Condensation 2. Penetration of water and air 3. Normal fluctuation of auxiliary energy 4. Abnormal fluctuation of auxiliary energy 5. Hazards of electrical origin 6. Failure of a safety device: - flame supervision device - regulator - thermostat - cooling fan - remote control 7. Un-burnt gas release Risk of gas leakage Risk of accumulation in the Appliance Risk of accumulation in the space 8. Ignition - Ignition - Re-ignition
		For the specimen(s): -Agreement with the manufacturer on a location where the examinations and tests will be carried out -Visual inspection -Verification that the specimen(s) have been manufactured in conformity with the technical documentation and designed in accordance with the relevant harmonised standards, and if applicable with other relevant technical specifications; - Appropriate examinations and tests, or have them carried out -Evaluation report -Type-examination certificate	

Module type	Respons. organisation	Obligations	Explanations
			- Cross-lighting 9. Combustion Flame stability Concentration of harmful substances in the combustio products ……..

ANNEX II

ACTIVITIES acc. to MODULE C2

Module type	Respons organisation	Obligations	Explanations
MODULE C2: CONFORMITY TO TYPE BASED ON INTERNAL PRODUCTION CONTROL PLUS SUPERVISED PRODUCT CHECKS AT RANDOM INTERVALS	CAB	Carry out product checks or have them carried out at intervals of one year or less Examination of the technical documentation (see type examination) Adequate sample of the final appliances or fittings Examination and appropriate tests as identified by the relevant parts of the harmonised standards shall be carried out Visual inspection Certificate for module C2: Not required acc.to GAR; required acc. to ISO/IEC 17065	Examination and appropriate tests see type examination Technical documentation see type examination Visual inspection see type examination
	Manufacturer	Declaration The same application has not been lodged with any other notified body The appliances or the fittings concerned are in conformity with the type described in the Type-examination certificate and satisfy the requirements. The manufacturing process and has to ensure conformity of the manufactured appliances or fittings with the type described in the Type-examination certificate Under the responsibility of the notified body, affix the CAB's identification number during the manufacturing process. The manufacturer shall affix the quality marking to each individual appliance or fitting Written -Declaration of conformity for each appliance or fitting model	Quality marking and Declaration of conformity The Declaration of conformity shall identify the appliance or fitting model for which it has been drawn up. Content: 1.Appliance or fitting /appliance or fitting model (product, type, batch or serial number) 2. Name and address of the manufacturer: 3.This declaration of conformity is issued under the sole responsibility of the manufacturer. 4. Object of the declaration (identification of the appliance or fitting allowing traceability; where necessary for the identification of the appliance or the fitting, an image may be included): description of the appliance or the fitting. 5.The object of the declaration described in point 4 is in conformity with Egyiptian Regulation (Directive 426/EU GAR) 6.References to the relevant Egyptian standards used or references to the other technical specifications 7. The CAB… (name, address, number) … performed … (description of intervention) … and issued the certificate(s): … (details, including its date, and, where appropriate, information on the duration and conditions of its validity). 8. In the case of fittings, instructions on how the fitting should be incorporated into an appliance or assembled to constitute an appliance in order to assist compliance with the essential requirements applicable to finished appliances. 8. In the case of fittings, instructions on how the fitting should be incorporated into an appliance 9. Additional information: Signed for and on behalf of: … (place and date of issue): (name, function) (signature)

ANNEX III

COMPARISON of MODULES

	Module B	Module C2	Module D	Module E	Module F	Module G
Explanation	A CAB examines the technical design and verifies and attests that the technical design of the appliance or the fitting meets the requirements of GAR	Conformity to type based on internal production control plus supervised product checks at random intervals	Conformity to type based on quality assurance of the production process	Conformity to type based on product quality assurance	Conformity to type based on product verification	Conformity based on unit verification
Manufacturing		Manufacturing process ensure conformity of the manufactured appliances or fittings with the type described in the type-examination certificate.	The manufacturer shall operate an approved quality system for production, final product inspection and testing of the appliances or fittings, and shall be subject to surveillance	The manufacturer shall operate an approved quality system for final product inspection and testing of the appliances or fittings and shall be subject to surveillance	Manufacturing process ensure conformity of the manufactured appliances or fittings with the type described in the type-examination certificate.	The manufacturer shall establish the technical documentation Manufacturing process shall ensure conformity of the manufactured appliances or fittings with therequirements of GAR
Product checks		A CAB , 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	-		-	
Quality system			Assessment of his quality system for the appliances or fittings concerned. The application shall include: all relevant information for the appliance or the fitting approved under module B	Assessment of his quality system for the appliances or fittings concerned. all relevant information for the product category envisaged	;	
			The quality system shsall contain among others the corresponding manufacturing, quality control and quality assurance techniques, processes and systematic actions that will be used; the examinations and tests that will be carried out before, during andaftermanufacture, and the frequency with which they will be carried out;	The quality system shsall contain among others the quality records, such as inspection reports and test data, calibration data, qualification reports on the personnel concerned, etc. the examinations and tests that will be carried out after manufacture;		

	Module B	Module C2	Module D	Module E	Module F	Module G
			TheCAB shall assess the quality system. The audit shall include an assessment visit to the manufacturer's premises.	The CAB shall assess the quality system The audit shall include an assessment visit to the manufacturer's premises.		
			Surveillance under the responsibility of the CAB The CAB shall carry out periodic audits at least once every two years In addition, CAB may pay unexpected visits to the manufacturer.	Surveillance under the responsibility of the CAB The CAB shall carry out periodic audits at least once every two years to make . In addition, the CAB may pay unexpected visits to the manufacturer..		
Quality marking and Declaration of conformity		The manufacturer shall affix the Quality marking to each individual appliance or fitting The manufacturer shall draw up a written Declaration of conformity for each appliance or fitting model.	The manufacturer shall affix the Quality marking and, the identification number of the CAB to each individual appliance or fitting The manufacturer shall draw up a written Declaration of conformity for each appliance or fitting model	The manufacturer shall affix the Quality marking and, the identification number of the CAB to each individual appliance or fitting The manufacturer shall draw up a written Declaration of conformity for each appliance or fitting model	The manufacturer shall affix the Quality marking and, the identification number of the CAB to each individual appliance or fitting The manufacturer shall draw up a written Declaration of conformity fitting model	The manufacturer shall affix the Quality marking and, the identification number of the CAB to each individual appliance or fitting The manufacturer shall draw up a written Declaration of conformity fitting model
Verification	Examination of a specimen, representative of the production envisaged, of the complete appliance or fitting (production type).				A CAB shall carry out examinations and tests, or have them carried out, to check the conformity of the appliances or fittings with the approved type. Verification cby examination and testing of every appliance or fitting or statistical verification of conformity	A CAB shall carry out appropriate examinations and tests, to check theconformity of the appliances or fittings with the applicable requirements of GAR

Annex III: Comparison of the information of the items " Explanation, Manufacturing, Product checks, Quality system, Quality marking and Declaration of conformity, Verification" within the modules. Further information (If applicable) to the items are the same for the modules concerned. (Blue : Main differences. Red: Tests and examination to be performed)