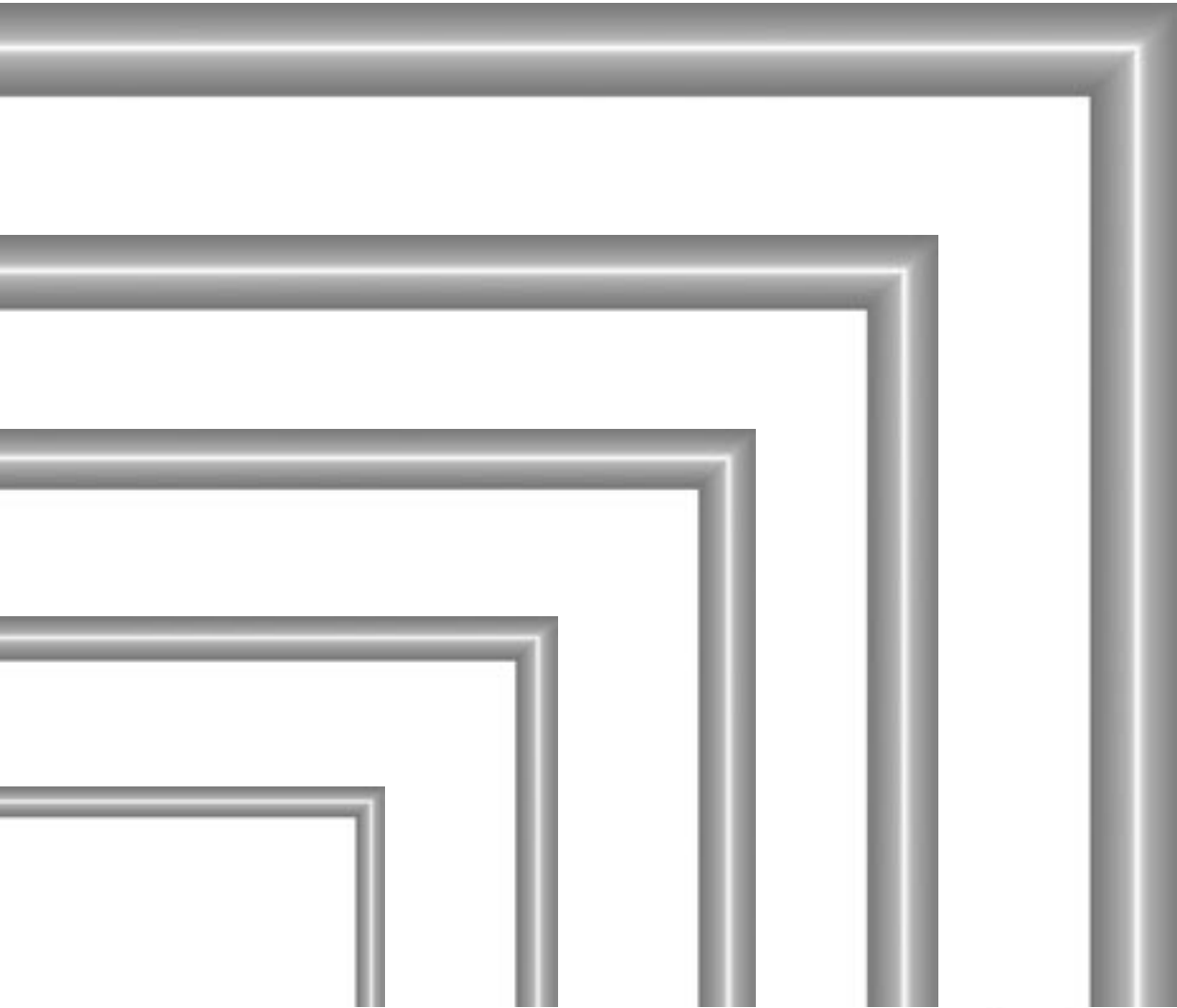


# CE Approval of Gas Equipment

**Guidelines for Manufacturers and Suppliers**



# CE Approval of Gas Equipment

## Guidelines for Manufacturers and Suppliers

These guidelines for CE approval of gas equipment have been drawn up by DGP in order to give a clear outline of the institution's working procedures.

The guidelines include approval of mass produced gas appliances and equipment for domestic and commercial use.

It is DGP's hope that, on the basis of these guidelines, the gas equipment manufacturer will be able to make the necessary decisions and adapt his procedures to ensure that the application for approval by DGP proceeds to the satisfaction of everyone involved.



Danmarks Gasmateriel Prøvning

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# CE APPROVAL

## The free movement of goods

As part of the EU's Single Market, the Gas Appliance Directive, which came into force on January 1<sup>st</sup> 1992, is intended to ensure the free movement of goods in all EU countries, as well as in Norway, Sweden, Finland and Austria from January 1<sup>st</sup> 1994, inclusive.

The free movement of goods encompasses the marketing, retailing and commissioning of gas equipment that is CE-marked being available for sale without hindrance across national borders. Any barriers in the form of nonconforming technical specifications, market agreements and special preferences for specific products on the part of heating and plumbing fitters and gas suppliers are forbidden.

The member states must safeguard this free mobility.

However, CE approval of a gas appliance will not automatically ensure that marketing is possible in all the above-mentioned countries.

The use of CE marked appliances is thus conditional on the following:

- Appliances must be designed to operate with the gas qualities and connection pressures in use in the country of destination. This is symbolized by appliance categories, and whether or not an appliance is fitted with a governor.
- Appliances must comply with national installation requirements, including special requirements regarding safety equipment (flame supervision and ventilation safeguards).
- Appliances must be supplied with marking as well as service and installation instructions in the national language.

## Terms for CE approval

Notified Bodies are appointed to carry out CE approval of gas appliances and their controls.

The following procedures must be followed before gas appliances and their controls can be marketed with a CE mark or with a gas controls certificate.

A: Type examination of the product:

- either** the gas equipment must meet the requirements of a harmonized EN standard
- or** directly on the basis of the Gas Appliance Directive's essential safety requirements.

This is for the manufacturer to choose.

In addition to the requirements of the Gas Appliance Directive, covering the gas engineering hazards related to the product, it must be ensured that any other risks associated with the product are addressed where other EU directives have been adopted for such risks.

A CE mark on a product must thus guarantee that all relevant EU directives have been met.

B: Approval and ongoing inspection of production on the basis of:  
**either** random sampling of production  
**or** a quality system for production and final inspection (EN 29002)  
**or** a quality system for final inspection alone (EN 29003).  
This is for the manufacturer to choose.

The terms governing this approval are intended to ensure that all manufactured products comply with the type examination certificate for the Gas Appliance Directive and with other relevant directives.

The manufacturer can apply for CE approval for a product to one and only one of the Notified Bodies appointed in the EU countries and may choose to divide the work between two Notified Bodies, making one Notified Body responsible for type examination and the other for approval of production.

If DGP is asked to carry out both the type examination and the approval of production, both procedures will be started simultaneously.

A licence for CE marking a specific product is valid for the lifetime of a product providing no changes are made to the product or production.

## **DGP's function as a Notified Body**

The Danish government has appointed DGP the Danish Notified Body (ID no. 0048) to implement the Gas Appliance Directive.

This function forms a natural extension of DGP's half-century of working in this field.

DGP has set up a network of collaboration partners in Denmark with a view to being able to offer type examination and approval of production on all gas appliances for domestic use as well as small commercials.

For the purpose of evaluating the terms for other relevant directives, DGP collaborates with the ministries concerned and the Notified Bodies in charge of these fields; its capacity in the laboratory field has also been extended by means of cooperation with other accredited gas technical laboratories.

For approval of production on the basis of quality systems, DGP has set up a partnership with internationally accredited certification bodies that are able to act as subcontractors to DGP.

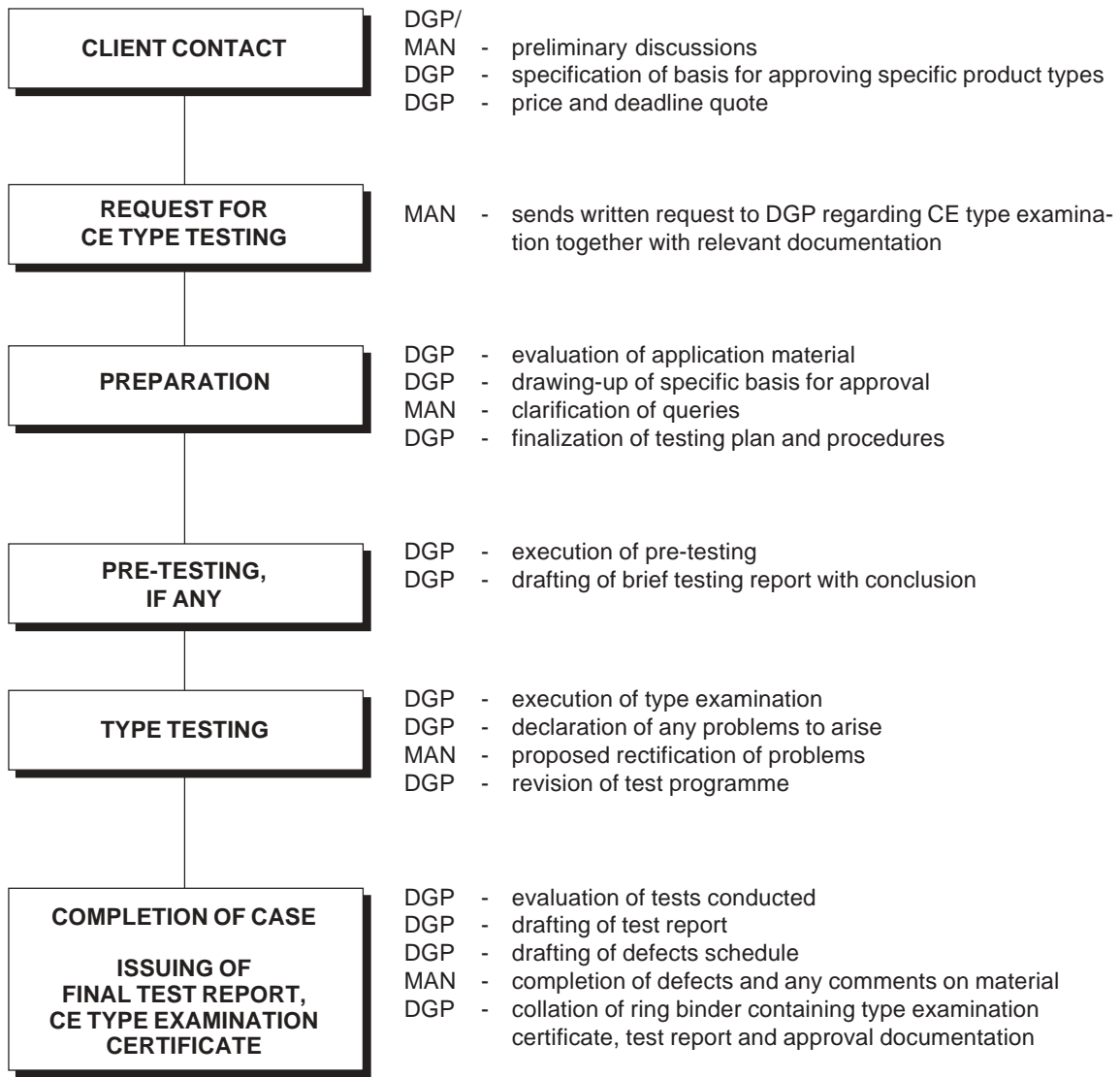
Furthermore, DGP is involved in ongoing cooperation with the Notified Bodies of the other countries in the gas field, which has provided detailed information concerning supply conditions and installation practice in these countries.

# CE TYPE EXAMINATION

## General procedures

DGP's procedure for handling applications in connection with CE type examination consists of a series of systematically structured activities in close co-operation with the manufacturer (MAN).

In the flow chart below, these activities are shown from initial client contact through to issuing of the CE type examination certificate.



## Client contact

DGP generally encourages the manufacturer to hold an introductory meeting regarding the opportunities for obtaining CE approval and the associated terms.

In the course of this preliminary contact, DGP can provide details of the relevant requirements and highlight the decisions the manufacturer will initially have to make in order to proceed in the most efficient manner.

This contact will provide information to form the basis for a quote from DGP for price and work-planning.

The preparatory meeting may take place at either DGP or the manufacturer's premises.

## General basis of approval for each type of appliance

For each type of appliance, the overall terms for obtaining a CE type examination certificate are classified in accordance with or by the documentation required.

This documentation is termed the basis for approval and generally comprises the following elements:

### **Test reports**

Test reports, including documenting compliance with the Gas Appliance Directive.

### **Manufacturer's declarations**

Declarations from the manufacturer regarding construction materials used and their suitability for the chemical, thermal and mechanical stress to which they will be exposed.

Compliance with the requirements of the Low Voltage Directive is also important, as these requirements have been incorporated directly in the Gas Appliance Directive.

### **Other approvals**

Certificates of approval for subcomponents used from acknowledged certification authorities (Notified Bodies or equivalent).

### **Marking of appliance and packaging**

Data plate, warning notices on the equipment and marking of packaging as per the requirements of the Gas Appliance Directive, formulated in the national languages.

### **Instructions for installation and use**

Instructions for installation and use for the individual countries in the national languages.

## **Drawings**

Relevant drawings for product identification, in the form of assembly and detail drawings of crucial importance to the design.

As mentioned, during initial contact with the client, DGP can define a more specific basis of approval for each type of appliance.

## Price and deadline quote

After discussing the basis for the test programme, DGP can draw up a specific quote for obtaining a CE type examination certificate for the relevant product types. DGP's offer will be conditional on no technical problems arising, on no repeated testing being required and on all necessary technical material being made available to the manufacturer at the appropriate time.

## Request for CE type examination

A request for CE type examination will be regarded as a contract with DGP regarding the specified assignments.

## Material to be sent to DGP

For formal reasons, a request for CE type examination must be accompanied by a written declaration to the effect that no request has been submitted to any other Notified Bodies.

If the request is submitted by an agent, that agent must be domiciled in the EU.

A request from the manufacturer must further contain:

- a) Details of the countries, categories of appliance and inlet pressure for which type examination is required.
- b) A clear description of the products and their installation, including ventilation system and application. In the event of a request to test series of products, the correlation and homogeneity of such products must be described.
- c) Information as to whether type examination is to be conducted directly on the basis of the essential safety requirements of the Gas Appliance Directive or solely on the basis of a harmonized EN standard.
- d) Information as to whether DGP is to be of assistance with any special installation requirements in the countries of destination stated.
- e) Technical data for the products with respect to installation and adjustment as well as a description of the component configuration.
- f) Relevant drawings and, where possible, draft instructions for installation and use and a draft data plate.
- g) Other material required in the approval documentation, where the material is available at the time of application.

## Additional services

In addition to applying for CE marking, the manufacturer can apply for verification of special quality characteristics related to products.

This might involve:

- NO<sub>x</sub> emission from combustion tests
- Special energy tests, and
- Special tests for evaluating the lifetime and durability of the product.

## Preparation

### Finalization of specific basis for approval

Following an evaluation of the material forwarded by the manufacturer, the definitive and specific basis for approval is finalized.

In the event of further comments and queries, DGP will call for an early meeting with the manufacturer in order to clearly define a course of action.

### Test schedule

Once the approval basis for a product has been finalized, DGP will define a test schedule.

The test schedule is worked out with an eye to conducting the tests in the shortest possible time and in a logical sequence.

In this context, the manufacturer's special requirements can be incorporated into the test schedule.

The test schedule is among others prepared according to the following criteria:

- a) For appliances in a series, selecting one or more basic models whose overall testing can constitute the basis for approving a whole range. When choosing the basic models, account is taken of the design philosophy of, for example, the flue system.
- b) Taking a basic model as the starting point to draw up a list of adjustments corresponding to the different gas families and varying designs and connection pressures applying in the various countries of destination.
- c) Delining the sequence of tests on the basic model so as to minimize the time spent on necessary conversions and the technical correlation between the tests, assigning some order of priority to the tests for verifying compliance with the manufacturer's data.
- d) Arranging the tests on the basic model so as also to find the extreme parameters as quickly as possible.
- e) Then conducting tests on other basic models as well as supplementary tests on other variations of the basic models and/or other model types.

## Testing

Well ahead of the scheduled testing deadline, DGP calls the appliances in for type examination,

### Test start

When tests at the laboratory start, the equipment is set in accordance with the manufacturer's instructions. If the manufacturer so wishes, DGP is happy to have a representative present to assist in the startup phase and help clarify any queries arising.

### Procedure in the event of problems

If, during testing, DGP ascertains

**that** the measured values are not in line with the manufacturer's declarations, or

**that** the acceptance criteria for the individual tests do not meet the specifications for the design in hand,  
the manufacturer is contacted immediately

At the same time, an evaluation is made to see whether the tests can continue, either in part or in full, possibly with a different sequence of tests.

For up to 3 weeks after testing stops, the manufacturer is guaranteed high priority for resumption of testing.

In the event of design modifications during actual testing, the test plan and procedures are re-evaluated.

## Compilation of test report and CE type examination certificate

Once tests have been carried out, DGP collates the results of the tests and evaluates the compliance of the approval documentation as a whole.

If certain declarations or certificates of approval are missing, these are requested from the manufacturer.

Similarly, the manufacturer is informed of any corrections to the installation and maintenance instructions and to the product marking.

Once pre-testing or total type testing is completed, DGP compiles a test report.

The test report is in either Danish or English and is completed so as to illustrate how the product complies with the Gas Appliance Directive or a specific standard. The actual test report also includes the most important measured values.

As required by the Gas Appliance Directive, DGP issues the formal CE type examination certificate in both Danish and English as well.

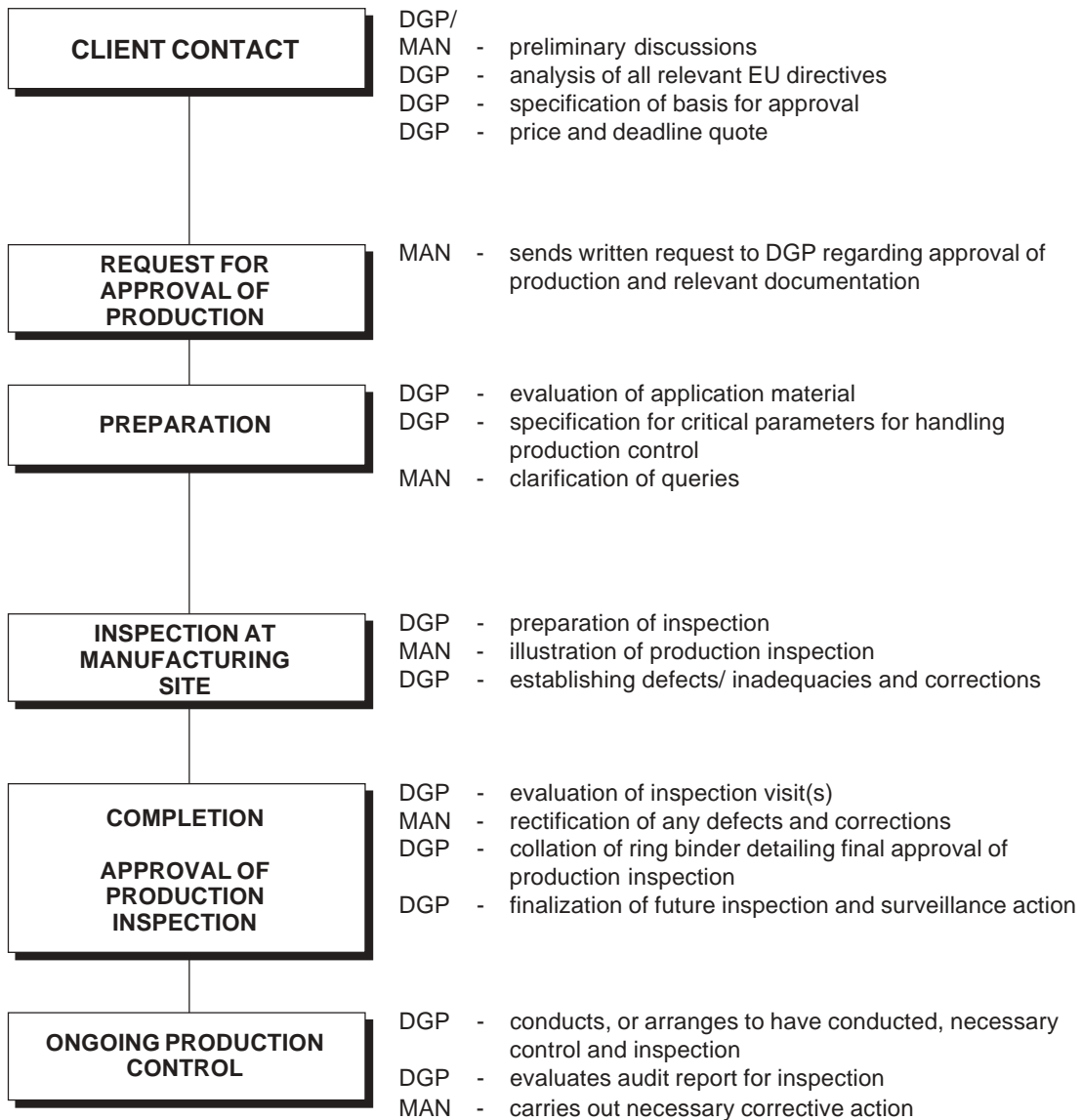
Finally a ring binder is sent to the manufacturer with the entire approval documentation, including the CE type examination certificate.

# APPROVAL AND INSPECTION OF PRODUCTION

## General procedures

If the manufacturer wishes DGP to attend to the related inspection of the manufacturer's production, DGP conducts a series of systematic activities as a forerunner to approval of production and stipulation of subsequent routine inspection and control.

The following flow chart shows these activities:



## Client contact

DGP generally encourages the manufacturer to hold an introductory meeting regarding the terms and alternative methods for obtaining approval for the production of products that either have or will attain a CE type examination certificate.

In the course of this preliminary contact, DGP can provide details of the relevant requirements and highlight the decisions the manufacturer will initially have to make in order to proceed in the most efficient manner.

This contact will provide information to form the basis for a quote from DGP for price and work-planning.

The preparatory meeting may take place at either DGP or the manufacturer's premises.

## Analysis and evaluation of all relevant directives

For approval of production, DGP analyses the relevant standards for the products concerned, their installation and application.

In addition to the Gas Appliance Directive (including the Low Voltage Directive), this evaluation applies to:

- the Construction Products Directive and
- the Directive for Simple Pressure Vessels.

If the manufacturer so wishes, DGP will also evaluate the effect of other relevant directives.

- the Machinery Directive
- the EMC Directive, and
- the Efficiency Directive for Gas and Oil-fired Boilers

The result of DGP's analysis may involve delegating these tasks to relevant organizations, depending on the manufacturer's wishes, for example DEMKO (the Danish Board for Testing and Approval of Electrical Equipment) and TELECOM.

Details of the EU directives for which the product has been approved are included in the installation guidelines.

## Specification of approval basis for production

The manufacturer can choose between four modules for verification of production and control. Whether the manufacturer uses the random sample modules or the quality system modules, approval of production must be based on an overall documentation basis generally made up of the following elements:

### **Internal procedures and instructions**

Internal procedures and instructions, documenting that production of the products in question will conform with the issued CE type examination certificate and with the Gas Appliance Directive.

### **Declarations from subcontractors**

Subcontractors' declarations regarding their internal production control and utilization of quality management assurance in production.

### **Compliance with other directives**

Where other directives stipulate requirements of products and production, requirements supplementary to the approval basis are drawn up.

### Financial quote

Based on the factors described above and the qualifying statements agreed with the manufacturer, DGP can work out a quote for the costs connected with approval of production.

This quote assumes that the manufacturer will draw up the requisite instructions and procedures at the proper time and to the correct extent.

## Request for approval of production

A request for the approval of production will be taken as a contract for the approval of production and control of the products covered by the CE type examination and subsequent ongoing production control.

If the manufacturer has obtained the approval, by an accredited certification body for a quality system, DGP can entrust continued compliance with product quality to systematic verification by that body.

### Material to be sent to DGP

When applying for approval of production and choice of production control module, the following material must be submitted:

- description of production control currently in use, possibly including a flow chart;
- procedures and instructions used in connection with inspection of product quality, including whether such procedures and instructions form a direct part of the manufacturer's quality system; and
- a certificate, if any, from an accredited certification body on the factory's quality system, setting out clearly its scope, and a copy of the most recent audit report.

## Preparation

On receipt of the manufacturer's request, DGP draws up the themes for approval and evaluates the material forwarded, as seen in relation to the product and the safety factors associated with it.

### Specification of critical parameters

DGP's evaluation results in a suggested list for the manufacturer of critical production parameters that have to be addressed as part of production control.

These criteria contain control function specifications regarding:

- the purchase of subcomponents
- the production process for subcomponents
- assembly and installation of appliance
- final testing, and
- random-sample control of special properties.

The manufacturer has to compose and design the production control to match his particular requirements.

In accordance with the random sampling module, start-up can also be timed to synchronize with plans for subsequent implementation of a quality system in accordance with the ISO 9000 series.

## Inspection at the manufacturing site

The purpose of DGP's inspection at the manufacturing site is to verify the actual use of the procedures and instructions drawn up.

In accordance with the agreement with the manufacturer, DGP performs an inspection at the manufacturing site.

During this inspection, the following are discussed:

- the manufacturer's plan for present and subsequent use of quality systems
- DGP's comments on the material submitted concerning production control
- inspection of actual production control at the factory
- evaluation of the inspection undertaken, and
- future monitoring of production control.

After DGP's inspection, an overall audit report is drawn up in Danish or English, set out in such a way as to examine both the general quality management activities and the procedures and instructions determining the specific product quality.

At the conclusion of the meeting, the outstanding points are agreed.

## Completion

Once DGP is able to accept the documented material for production control, a list is drawn up, clearly indicating the scope of procedures and instructions, with DGP giving notification of approval of production at the same time.

The material is sent to the manufacturer.

If the manufacturer has obtained a certificate for approval of a quality system in accordance with the ISO 9000 series and providing all product quality procedures and instructions are included in that quality system, DGP will send only the certificate and a review of the significant procedures and instructions for the relevant product.

DGP is bound to point out that if the manufacturer does not have an approved quality system but is working to achieve it, DGP's documented basis for production control can constitute the basic material for future quality assurance procedures and instructions for product quality.

## Production control

Under the terms of the Gas Appliance Directive, the continued use of the CE mark is subject to production control being monitored by DGP.

If the manufacturer has an approved quality system from a certification body that collaborates with DGP, routine monitoring can be organized in combination with the ongoing verification and quality control system of that certification body.

Where the manufacturer does not have an approved quality system, DGP must superintend production itself. This is done through regular visits to the manufacturing site, where inter alia spot samples are taken for later evaluation.

The degree of routine inspection is fixed on the basis of the product's complexity, quality assurance routines already introduced, etc.

Inspections are conducted a minimum of once or twice a year.

# USE OF THE CE MARK

Where DGP's approval of production control is granted for the specific products, DGP grants the manufacturer permission to use the CE mark on the products.

## Notification to other countries

In connection with DGP's issuance of the CE type examination certificate and approval of production control, DGP must notify its approval to all EU countries affected, as well as to Norway, Sweden, Finland and Austria.

Notifications for the appliances are given with clear indication of the countries of destination.

Based on the procedural model in Denmark, this notification is designed to allow a database to be constructed in the countries concerned, listing all equipment approved for the relevant countries.

## Procedures regarding modifications

Experience shows that products will regularly undergo minor design modifications, and it is the manufacturer's responsibility to ensure that DGP is notified of all such modifications, DGP being responsible for the CE type examination certificate.

DGP has a flexible procedure for processing these modifications, which can be classified as follows:

- a) Modifications of no relevance to CE certification. These modifications are processed solely by including any corrections to design drawings in the approval documentation.
- b) Minor modifications to the design, the importance of which in gas engineering terms can be assessed without testing. These modifications are accepted by DGP and corrections made to the approval documentation.
- c) Modifications in the design necessitating supplementary tests. Modification cases are processed by DGP in accordance with the guidelines described in Chapter 2. These modifications are documented in a supplementary test report and the necessary modifications made to the CE type examination certificate, which is given a revised number.

Extensions to a CE type examination certificate to include new countries of destination for whose gas supply structure the product has already been tested may be implemented immediately by submitting the layout for the data plate together with installation instructions in the language of the country.

## Disputes arising with regard to the free movement

In the event of the manufacturer ascertaining on any markets of destination any form of obstacle to the marketing, sale or use of CE marked products owing to distrust of the certification and/or in citation of special national requirements, DGP may be of assistance to the manufacturer in solving such problems.

In the case of such reports, DGP's procedure entails:

- carefully documenting the nature of the dispute
- DGP contacting the Notified Body in charge and possibly the authorities in the country of destination to point out in a proper and courteous way the nature of the problem, which is in violation of the Gas Appliance Directive, and
- DGP at the same time requesting the person in charge in the country of destination to contact the persons wrongfully causing the dispute.

DGP has the experience to show that the above successful procedure resolves the dispute by far the majority of cases.

If, after reaching a deadlock, there should prove to be a need for a complaints procedure vis-à-vis the authority of the country of destination and the EU Commission, DGP can also be of assistance.



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