



# NF Mark LPG Equipment

## NF Gaz solution

As hereafter illustrated (drawings from CFBP), NF-Gaz mark applies to every equipment for butane or propane gas installation from outlet valve of the container (excluded) up to gas appliances inlet.

It also applies to specific equipment for camping or caravans.

## Pressure levels

Pressure	Butane	Propane
Appliances supply	28 mbar (112 mbar*)	37 mbar (148 mbar*)
Medium pressure in house piping	0,5 bar	1,5 bar
Pressure limiting device	-	1,75 bar

\* Non domestic appliances

## Medium pressure in-house piping

### Cylinder supply

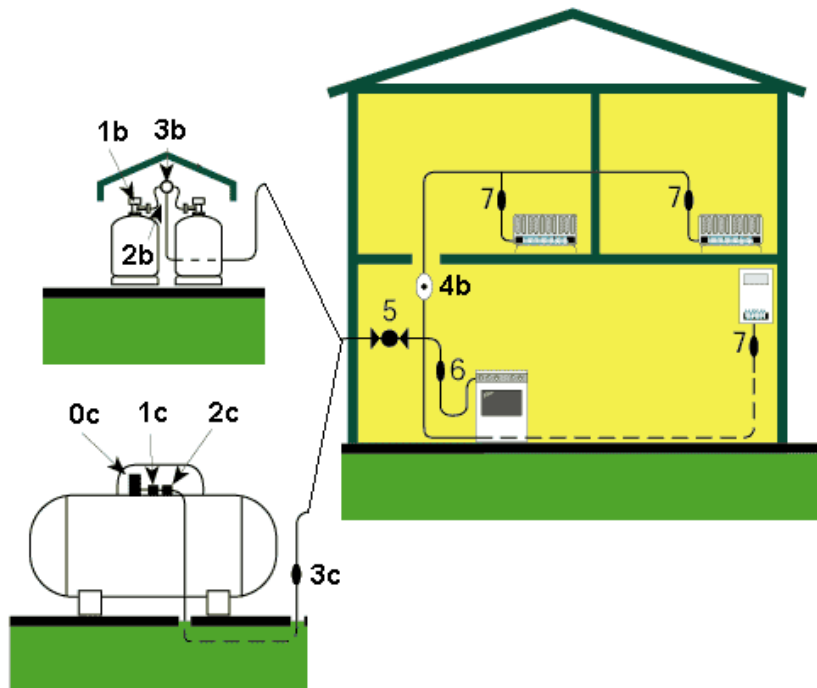
- 1b Main shut-off (non NF cylinder valve)
- 2b High pressure hose assembly for gaseous phase
- 3b Automatic changeover device with incorporated first stage regulator and pressure limiting device
- 4b Indicator normal reserve (optional)

### Tank supply

- 0c Main shut-off (non NF tank valve)
- 1c High pressure regulator
- 2c Pressure limiting device (mandatory for propane)
- 3c Isolating joint, mandatory in case of piping made of two different metallic material (non NF)

### In-house installation

- 5 Valve MOP 5-20 (optional 2<sup>nd</sup> shut-off device)
- 6 Regulator with excess flow safety device 1,3 kg/h class I
- 7 Regulator with excess flow safety device 2,6 - 4 or 5 kg/h class II



## Appliances connection

For tubes, hoses assemblies and other gas connectors: see information sheet NF-Gaz Connecting fittings.

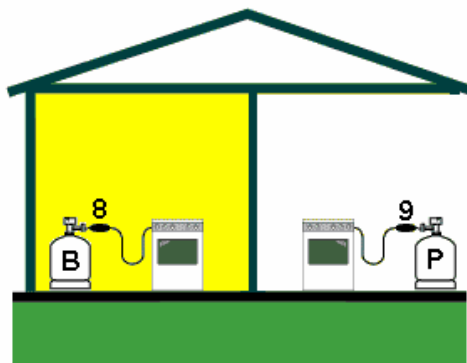
### Butane

- 8 Regulator with safety device 28 mbar

### Propane

- 9 Regulator with safety device 37 mbar

## Low pressure in-house piping



## How to recognize them?

Any NF Gaz certified LPG equipment is marked directly on the equipment and its package with:

- the NF logo followed by Gaz word,
- applied standard reference,
- type of gas and pressure.





# NF Mark Gas connecting fittings

## How to recognize them?

Any NF Gaz certified fitting and its package is marked with the NF logo followed by Gaz word and the type of gas.

Tubes and hose assemblies whose life time is limited are marked « A remplaceur avant ... ».

Markings of LPG fittings are orange coloured.

Markings of fittings design for network gases are coloured other than orange (black or blue).

Installation instructions according to NF P 45-204 are given in the manual.

## Which one shall be used?

NF Gaz mark applies to all connecting fittings for gas appliances.

Depending on appliance type and installation design, an appliance can be connected to gas supply (valve or regulator) either through a rigid pipe, or a hose assembly, or a tube according to table 1.

## Hose assemblies

A hose assembly is a hose equipped with two mechanical union to be connected at the outlet of the gas valve or of the pressure regulator and to the inlet of the gas appliance. Its length is from 0,5 m up to 2 m.

Hose assemblies designed for network gases are symmetrical with two identical nipples. Hose assemblies designed for LPG (butane or propane) are asymmetrical with two nipples whose shape and colour are different. Nevertheless it is not possible to mislead them because they are identified by different markings and colour codes.

It also exists hose assemblies designed for specific uses as gas connection of heating appliances, professional cooking appliances, heating appliances for animal breeding premises, industrial application.

## Tubes

NF D36-102 tubes for network gases must be fitted on G1/2 NF D 36-111 teat ends.

XP D36-110 LPG tubes must be fitted on a G1/2 NF D 36-109 teat end at the gas appliance side and on M20x150 (NF M 88-773 type) at the pressure regulator side.

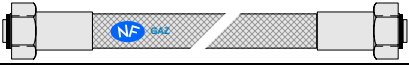



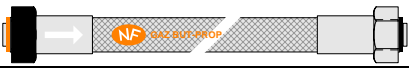


From 1/07/96, use of tubes is restricted by regulations (see table 1). They are sold with a length less than 2 m, under individual package with 2 securing clips and an installation manual. Therefore teat ends are forbidden to be separately sold and can be supplied only in conjunction with a gas appliance or a butane regulator. NF securing clips are separately sold for second installation.

## Other gas connecting fittings

NF Gaz mark also applies to other connecting fittings, as:

- NF D 36-126 tubes specifically designed for connecting Bunsen burners.
- Quick coupling s according to NF D 36-124 (domestic and commercial use) and NF D 36-128 (industrial uses).
- Sealing materials.

Table 1 : Connection of domestic gas appliances (according to NF P 45-204)

Type of gas	Type of gas connection	Life time	Heating, hot water production appliances, fireplaces	Mobile heaters (P<4,25 kW)	Cooking appliances		
					Built in	Free standing	
						Existing installation	New installation <sup>2</sup>
Gas from network	Rigid connection	-	yes	no	yes	yes <sup>3</sup>	yes <sup>3</sup>
	NF D 36121 metallic hose assemblies 	No limit	yes <sup>4</sup>	yes	yes	yes	yes
	NF D 36103 Reinforced rubber hose assemblies 	10 years	no	yes	yes	yes	yes
	NF D 36100 Non reinforced rubber hose assemblies 	5 years	no	yes	yes	yes	yes
	NF D 36102 rubber tubes and clips 	5 years	no	no	no	yes <sup>5</sup>	no
LPG from containers	Rigid connection	-	yes	no	yes	yes <sup>3</sup>	yes <sup>3</sup>
	NF D 36125 metallic hose assemblies 	No limit	yes <sup>4</sup>	yes	yes	yes	yes
	NF D 36112 Reinforced rubber hose assemblies 	10 years	no	yes	yes	yes	yes
	NF D 36110 rubber tubes and clips 	5 years	no	Butane yes <sup>5</sup> Propane no	Butane yes <sup>5</sup> Propane no	yes <sup>5</sup>	Butane yes <sup>5</sup> Propane no

<sup>1</sup> or modified with change of appliance-end valve

<sup>2</sup> or modified without change of appliance-end valve

<sup>3</sup> fixed to the floor or weighty

<sup>4</sup> or NF D 36 123

<sup>5</sup> it is recommended to use a hose assembly if possible





# ATG Mark

## Alloys and fluxes for soldering, brazing and braze welding

### Why to buy NF fittings?

NF 136 Mark ensures quality and safety of fittings for polyethylene networks for supply of gas, potable and irrigation water, industrial application.

Certification procedure is managed by CERTIGAZ, a certification body specialised for gas equipment, on behalf AFAQ AFNOR Certification.

CERTIGAZ use a network of accredited testing laboratories and its team of specialised auditors.

For NF 136 Mark certification, PE fittings are regularly tested by accredited testing laboratories and manufacturing premises are audited at least every year according to NF 136 certification rules (available at [www.certigaz.fr](http://www.certigaz.fr)).

### How to recognize NF ROB-GAZ valves?

- Check that ATG logo is put on the the package,
- Ask the manufacturer a copy of their ATG certificate,
- Read the list of certified products at [www.certigaz.fr](http://www.certigaz.fr) or [www.marque-nf.com](http://www.marque-nf.com).

### Regulation of gas installations in buildings

The "arrêté du 15 juillet 1980 modifié rendant obligatoires des spécifications techniques relatives à la réalisation et à la mise en œuvre des canalisations de gaz à l'intérieur des bâtiments d'habitation et de leur dépendance" requires conformity of alloys and flux used for assembly of gas pipes to specifications ATG B521 et B524. It recognizes ATG Mark as a proof of conformity of products to gas regulation.

Installation rules are given by "arrêté du 2 août 1977 modifié relatif aux règles de sécurité des installations de gaz" and by standard NF P 45-204.

### Regulation of distribution networks

According to article 6 of « arrêté du 13 juillet 2000 portant règlement de sécurité de la distribution de gaz combustible par canalisations », the network operator is responsible for choosing equipment and material used in the network.

Welding, brazing, soldering and braze welding processes are described in AFG specification RSDG 3.

### A sign of conformity

ATG Mark gives a proof of conformity to regulation of soldering and brazing products for gas installations (arrêté du 2 août 1977).

It is also widely accepted and prescribed by main buyers of those products (network operators, GSB/GSG, grocers...).

### Which product must be used ?

Soldering and brazing products are classified depending on the material of pipes (steel or copper) and type of assembly process :

- Soft soldering (melting temperature lower 450°C);
- Hard brazing (melting temperature over 450°C);
- Braze welding.

They must conform to hereunder listed ATG specifications :

- ATG B. 521-11 : Alloys and fluxes for braze welding of steel pipes
- ATG B. 521-12 : Alloys and fluxes for hard brazing of steel pipes
- ATG B. 524-3 : Alloys and fluxes for hard brazing of copper pipes
- ATG B. 524-4 : Alloys and fluxes for soft soldering of copper pipes
- ATG B. 524-7 : Alloys and fluxes for braze welding of copper pipes

**It is forbidden to use of soft soldering for collective parts of household gas installation or in open to public premises.**

Soft soldering is only possible for installations inside the house, at a pressure up to 400 mbar for individual dwellings, at a pressure up to 50 mbar for collective dwelling and for identical repair.

For all assembly modes, it also exists restriction for use according to diameter of pipes which differ according to the type of installation (household, commercial, industrial).

**Remember :** Collective parts of gas installations in living dwellings and installations at a pressure above 400 mbar in open to public premises must be realised by operators duly qualified for the related assembly mode and pipe material.

### Products characteristics are controlled

Main characteristics certified by ATG Mark are :

- Chemical analysis
- Standard grip resistance (for braze welding products)
- Braze ability
- Mechanical resistance of assembly
- Marking and packaging

Tests and verifications made for first delivery of the ATG Mark but also permanently during manufacture and regularly by sampling allow to ensure the conformity of products to applicable specifications according to certification rules drafted with contribution of all interested parties (manufacturers, customers, authorities, laboratories) in order to satisfy permanently market needs.

**Nota :** Only couples of alloys and fluxes are certified. Their respective package must refer to same ATG registration number. Never use a brazing or soldering alloy with a different flux than the prescribed by the manufacturer.





# NF Mark Polyethylene fittings

## Why to buy NF PE fittings?

NF 136 Mark ensures quality and safety of fittings for polyethylene networks of gas, potable and irrigation water, industrial application.

Certification procedure is managed by CERTIGAZ, a certification body specialised for gas equipment, on behalf AFAQ AFNOR Certification.

CERTIGAZ use a network of accredited testing laboratories and its team of specialised auditors.

For NF 136 Mark certification, PE fittings are regularly tested by accredited testing laboratories and manufacturing premises are audited at least every year according to NF 136 certification rules (available at [www.certigaz.fr](http://www.certigaz.fr)).

## How to recognize NF PE fittings?

- Check that NF logo is put on the fittings or its package,
- Ask the manufacturer a copy of their NF certificate,
- Read the list of certified products at [www.certigaz.fr](http://www.certigaz.fr) or [www.marque-nf.com](http://www.marque-nf.com).

## Regulation of gas installations in buildings

The « arrêté du 4 mars 1996 modifié portant codification des règles de conformité des matériels à gaz aux normes françaises les concernant » lists the standards made mandatory according to article 4 of « arrêté du 2 août 1977 modifié relatif aux règles techniques et de sécurité applicables aux installations de gaz combustible et d'hydrocarbures liquéfiés situés à l'intérieur des bâtiments d'habitation ou de leurs dépendances ». It recognizes NF mark as a proof of conformity to regulation related to gas equipment.

Installation rules are given by « arrêté du 2 août 1977 modifié relatif aux règles de sécurité des installations de gaz » and by standard NF P 45-204.

## Regulation of distribution networks

According to article 6 of « arrêté du 13 juillet 2000 portant règlement de sécurité de la distribution de gaz combustible par canalisations », the network operator is responsible for choosing equipment and material used in the network.

## A sign of conformity

NF Mark 136 gives a proof of conformity to regulation of gas installations (arrêté du 2 août 1977).

It is also widely accepted by french and foreign network operators who are very involved in NF Mark 136 Committee.

## The different types of PE fittings

NF Mark 136 classifies fittings for PE networks according to their family (kind of fitting) and application group (fluid carried by the network) as described in table hereunder.

Family	Fitting	Standard <sup>1</sup>	
		Group <sup>2</sup> 1 (gas)	Groups <sup>2</sup> 2, 3, 4 (water)
A1	Electrofusion PE sockets	NF EN 1555-3	NF EN 12201-3
A2	Electrofusion saddles	NF EN 1555-3	NF EN 12201-3
A3	PE couplings with spigot ends	NF EN 1555-3	NF EN 12201-3
B1	Metal mechanical fittings	NF EN 1555-3	NF EN 12201-3
B2	Plastic mechanical fittings	NF EN 1555-3	NF EN 12201-3
B3	Other types of assembly	NF EN 1555-3	NF EN 12201-3
C	PE Cocks for PE networks <sup>3</sup>	NF EN 1555-4	NF EN 12201-4

<sup>1</sup> Main standards for products; a complete list is given in annex 0 of NF136 certification rule available at [www.certigaz.fr](http://www.certigaz.fr).

<sup>2</sup> Group 1 : gas - Group 2 : potable water - Group 3 : irrigation water - Group 4 : industrial applications

<sup>3</sup> copper alloys valves used upstream gas meters and fitted with a PE fitting are in the scope of NF ROB-GAZ mark.

## Characteristics are controlled

Main characteristics certified by NF 136 Mark are :

- Material (PE 80, PE 100 ...)
- Dimensions (DN of fitting, PE pipe diameter, ...)
- Markings
- Weld ability
- Mechanical resistance of assembly
- Technical characteristics (pressure loss, cooling time, ...)

Tests and verifications made for first delivery of the NF mark but also permanently during manufacture and regularly by sampling allow to ensure the conformity fittings to applicable standards and to additional specifications drafted with contribution of all interested parties (manufacturers, customers, authorities, laboratories) in order to satisfy permanently market needs.



PE cock

## Why to buy NF ROB-GAZ marked valves?

NF ROB-GAZ mark give a proof of conformity to regulation of gas installations (arrêté du 2 août 1977); so it guarantees quality and safety of valves for gas installations.

Certification procedure is managed by CERTIGAZ, a certification body specialised for gas equipment, on behalf AFAQ AFNOR Certification.

CERTIGAZ use a network of accredited testing laboratories and its team of specialised auditors.

For NF ROB-GAZ certification, valves are regularly tested by accredited testing laboratories (CETIAT, CSTB, GDF, LPGL) and manufacturing premises are audited at least every year according to NF ROB-GAZ certification rules (available at [www.certigaz.fr](http://www.certigaz.fr)).

## How to recognize NF ROB-GAZ valves?

- Check that NF logo is put on the valve or its package,
- Ask the manufacturer a copy of their NF ROB-GAZ certificate,
- Read the list of certified products at [www.certigaz.fr](http://www.certigaz.fr) or [www.marque-NF.com](http://www.marque-NF.com).

## Regulation of gas installations in buildings

The « arrêté du 4 mars 1996 modifié portant codification des règles de conformité des matériels à gaz aux normes françaises les concernant » lists the standards made mandatory according to article 4 of « arrêté du 2 août 1977 modifié relatif aux règles techniques et de sécurité applicables aux installations de gaz combustible et d'hydrocarbures liquéfiés situés à l'intérieur des bâtiments d'habitation ou de leurs dépendances ». It recognizes NF mark as a proof of conformity to regulation related to gas equipment.

Installation rules are given by « arrêté du 2 août 1977 modifié relatif aux règles de sécurité des installations de gaz » and by standard NF P 45-204.

## Regulation of distribution networks

According to article 6 of « arrêté du 13 juillet 2000 portant règlement de sécurité de la distribution de gaz combustible par canalisations », the network operator is responsible for choosing equipment and material used in the network.

## Valves for gas installations in buildings

Those valves are used inside buildings as shut-off valves or for controlling appliances.

They conform to EN 331 and to standards listed in table herewith.

Valves for controlling household cooking appliances must be fitted with a safety device which automatically shut off gas supply when the hose is cut or unplugged.



Designation	Standard	MOP
Low pressure valves	XP E 29-135	0,5
Safety valve (with automatic shut off device)	XP E 29-140	0,2
Medium pressure valves	XP E 29-141	5

## Valves for use upstream the meter

Those valves conform to EN 331, to SROB100-NF technical specification and to standards listed in table hereafter. They are accepted by gas network operators who use NF ROB-GAZ mark as a quality sign.

Designed to be used upstream gas meters (temperature class -20°C), they can be fitted with various accessories or optional, such as external or internal blocking systems, test orifices, handling mean, plinth, automatic blocking system.

Test orifices must conform to SROB101-NF technical specification and can grant an accessory NF ROB-GAZ approval.

Type	Designation	Standard	MOP
E	Valve ¼ , MPB, JSC/JSC	XP E 29-141	5
E1	Valve ¼ , MPB, PE/JSC	XP E 29-141	5
EA	Valve ¼ , MPB, JSC/JSC	XP E 29-141	5
E1A	Safety valve ¼ , MPB, PE/JSC	XP E 29-141	5
D	Meter valve, JPC/JPC	XP E 29-135	0,5
C	Valve, JPG/JPG	XP E 29-135	0,5
M	Valve with copper pipes for brazing	XP E 29-135	0,5

JSC : spheroconic joint NF E 29 536

PE : NF 136 metal plastic joint

JPC : meter flange joint NF E 29-532

JPG : gas flange joint NF E 29-532

Cu : copper pipes for brazing



## Other valves

### Metallic butterfly valves

Those valves exist with very large diameter ranges and can be used both downstream and upstream the meter for specific application as pressure regulating stations for boiler rooms or commercial buildings.



### Automatic safety valves for kitchen pipes

Automatic safety valves for kitchen pipes conforming to NF E 29-134 are fitted with a safety device which shut off gas supply in case of low supply pressure.

They conform to requirements of article 13.3 of "arrêté du 2 août 1977 modifié". (cf. Regulation).



### Push-button valves

Those so-called push button-valves MPB, JSC/JSC (type F) or PE/JSC (type F1) must conform to XP E 29-142 based on EN 331.

Originally designed for use upstream the meter, they are no more prescribed by network operators but remain used for replacement or for some particular applications such as in open to public premises (ERP).

