

# Product liability for Door hinges

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## 1. INTRODUCTION

This document is intended for the operators in the sector of window and door manufacture and particularly for **Dealers, Designers of profiles and windows and doors, Manufacturers, Installers and Maintenance firms.**

The obligations and liability limits of FAPIM S.p.A. relative to hinges for doors produced and traded by them are established hereunder.

The general rules that have to be respected by the operators that handle the product during the different stages from its production to its final installation and up to its following use are also established.

It is understood that FAPIM S.p.A. is subject to the law obligations relative to the legal liability as producer of hinges.

## 2. DESCRIPTION OF THE PRODUCT AND ITS APPLICATION

The product dealt with in this document is the door hinge. The type of use of the door on which hinges are assembled varies according to its application:

- residential building door;
- commercial building door without door-check;
- commercial building door with door-check.

According to the type of use expected, Section 2.2 of the present document explains the corresponding percentage limits of the performance as related to the declared capacity.

The hinges treated in this document must be used only for the application on doors with a vertical rotating axis. For other applications, see the following Section 5.3.

The hinges are to be used on internal /external doors manufactured with aluminium, aluminium-wood, aluminium-PVC and stainless steel profiles and are to be installed in residential, public or private environments.

The above mentioned doors must have a function of shielding only and should not meet special technical requirements such as housebreaking resistance, thermal insulation, impermeability, acoustic insulation and should not be installed in environments with atmosphere at high aggressive corroding content or high humidity rate.

The hinges are formed by various components available from FAPIM S.p.A. The pattern of the door (number of hinges, their position, etc.) is being stated by the door designer.

In the case of wind or air draught (pressure or depression) of such an extent that the door sash is moved from its opening position, doors should be maintained in their closing position.

The resistance against the wind pressure with the door in its closing position depends on the performance of the profiles used for building the door itself, not only by the number of hinges installed on the door and the expected number of closing points.

More generally speaking, the door hinges herewith dealt with have been designed and built to meet the typical requirements and needs of residential buildings, public buildings, with and without door-checks. Any possible construction with different purposes shall be agreed upon from time to time.

### 2.1 Document with the instructions for the assembly and maintenance

Our instruction sheets give you the necessary and sufficient details for the application of every type of hinge (number of hinges, their positioning, maximum capacity).

The data there given refer to doors with a size of 2000 x 1000 mm (height x width).

For different sizes of the door, we give the necessary technical indications for the number of hinges to be applied and their positioning.

If hinges are to be lubricated, our document gives the necessary instructions for the lubricants to be used and the lubrication frequency and the relative methods to be respected.

### 2.2 Types of hinges

#### 2.2.1 Supporting hinges

These are universal hinges, i.e. they can be applied on almost every type of profile.

Their assembly is carried out by leaning the hinge against the profile and using proper screws that are fastened to proper counter-plates introduced in the profile. Also see the enclosed drawing as an example.

For their application, it is necessary to carry out a preliminary processing on the profiles (see the instruction sheet).

Regarding the performance of the supporting hinges - [Loira+](#), Florence - it is important to know the minimum thickness of the profile used for building the door; section 5.3 clarifies this item.

### 2.2.2 Clamping hinges

These are hinges the application of which is only possible on profiles with special grooves. In this case hinges are shaped so as to be hooked to the groove excavated in the profile and are fastened to the profile by means of screws and counter-plates designed to this purpose. Also see the enclosed drawing as an example.

It is moreover important that the tolerances of the profile grooves fall within limits well defined by the producer of the profiles themselves, as a non-perfect consistency may lead to clearances between hinge and profiles that may affect the good working of the final door.

The clamping hinges - [Velox Top](#), Venice, Venice Top, [Venice Plus](#), Venice Baby, [Monza](#) - do not need any processing on the profile where they are applied. Their application only requires the use of proper counter-plates or [specific screws](#) that are necessary to fasten the hinge to the profile.

For applying clamping hinges, it is important to know the minimum thickness of the profile used for building the door; § 5.3 clarifies this item.

## 3. MISUSE

An incorrect use of doors occurs when:

- obstacles are present near the frame and the sash, so that the correct operation of the sash itself is hindered;
- doors are moved and slammed without control (for example by wind or vandalic acts) against the protrusion of the wall on the side of hinges (clamping movement in the opening position), so that the hinges, the structure or other components of the door, can be damaged, deformed or, to the maximum extent, even broken;
- extra loads are applied to the door (for example if a person hangs from the open sash);
- during the closing position of the sash, if an unrelated body is located between the sash and the frame, so that the closing stage is hindered. The consequent damage occurring to the door and specially to the hinges, will be corresponding to the applied strength and to the lever arm ratio;
- some mechanisms are applied that at the stroke end determine a stroke in the opening position, thus causing more or less relevant contrasts, depending on the lever arm.

## 4. LIABILITY

The hinges installed on a door must obviously be the same and exclusively produced by FAPIM S.p.A. Their assembly must be conforming to the technical instructions delivered together with the product.

No liability is accepted in the following cases:

- if non original hinges or non-original hinges components are used on the doors, or if some component has been modified or adjusted during the assembly stage of the door;
- if the components or the door have not been assembled correctly;
- if the capacity limits have not been respected (maximum weights and sizes) indicated on the technical documentation supplied with the product or, however, made available;
- if, in the case of doors installed in commercial buildings, the additional capacity limits have not been observed (these limits are indicated under Section 5.4 and also written in the special instruction sheets);
- if the door was built with profiles that do not comply with the requirements requested by Fapim S.p.A. (see, for example, Section 5.3) or if the profiles are not corresponding to the necessary sizes for the assembly of the product, both shape-wise and tolerance-wise;
- if the assembly instructions have not been followed and particularly if the hinges have not been duly lubricated (where this is requested on the instruction sheet) and adjusted;
- if the periodical maintenance has not been carried out;
- more generally, in the case of misuse.

## 5. PRODUCT PERFORMANCES

The performances of door hinges are being defined in the technical documentation supplied in the product packaging.

Dealers, planners, constructors, installers and maintenance firms have to request this documentation if they do not have it.

The instructions given in this documentation have to be absolutely followed. Any possible variation or modification shall be authorized by FAPIM S.p.A at their occurring.

### 5.1 Maximum weights of the sash

The maximum weight of the sash that can be applied to a couple of hinges is being established on each instruction sheet, in consideration of the sizes of the door. The established limits shall not absolutely be exceeded.

### 5.2 Maximum sizes of the sash

Similarly as for the maximum weight, the maximum admitted sizes are established in the instruction sheet.

These indications are compulsory and shall not be exceeded.

### 5.3 Characteristics of the profiles used for doors

In the following sections we supply indications about the minimum technical characteristics of the door profiles to be used with hinges by Fapim S.p.A.

The supplied indications take into consideration the most common profiles to be found on the market and are of general rule: they shall however always be respected by the door constructor.

Any construction made with profiles with lower characteristics shall only be possible after receiving the authorization of the technical department of FAPIM S.p.A.

Even in the case of special applications, the constructor shall request the proper written authorization from the technical department of FAPIM S.p.A.

If this authorization is given, it shall be applicable only for that special construction and shall be requested again for any future construction.

The maximum sizes and weight as indicated in the instruction sheet are only guaranteed if the profiles used for the construction of the door have a sufficient mechanical resistance.

#### 5.3.1 Applications with supporting hinges

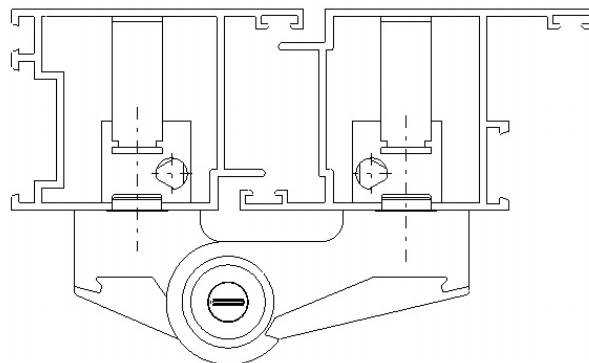
The thickness of the profile in the fastening area to the external frame **shall not be lower than 1.8 mm for aluminium profiles and 1.5 mm for iron profiles.**

Each reduction equal to 0.1 mm in the thickness of the profile involves a corresponding decrease of the capacity of the hinge equal to 10%.

The thickness of the profile where hinges are leant shall be higher than (or equal to) 1.5 mm for aluminium profiles and not lower than 1.2 mm for iron profiles.

If spacers are applied, please consider a capacity decrease equal to 10%.

Further technical directions are shown in the instruction sheet of the hinge in question.

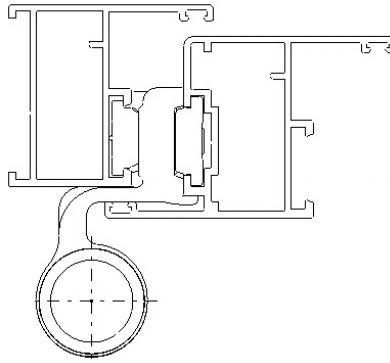


#### 5.3.2 Application with clamping hinges

The constructor shall make sure that the sizes of the grooves on which the hinge is assembled enable the correct hooking and fastening of the same.

Besides checking the correspondence between the hinge and groove of the profile, it is absolutely necessary for the constructor to make sure that the tolerances of the profile are such as to permit the correct application of the selected hinge.

Further technical directions are shown in the instruction sheet of the hinge in question.



#### 5.4 Limits for doors installed in commercial buildings

If doors are installed in commercial buildings such as schools, hospitals, hotels, sports centres and other buildings with a similar use type, the following indications shall apply.

##### 5.4.1 Residential building door

For these applications, we suggest you follow the directions of the instruction sheets of the hinges used in the construction of the door.

##### 5.4.2 Commercial building door without door-check

This application involves a heavier employment in comparison with the normal use in residential buildings, as the opening and closing operations happen in a less "controlled" way and the components are therefore subject to a higher and unexpected stress.

The heavier employment also takes into account the higher frequency of the door opening.

For this reason, when hinges are used in the construction of doors that are part of commercial buildings and without the application of the door-check, it is necessary to provide for a capacity reduction, as indicated in the instruction sheet, in comparison with the standard applications also supplied in the instruction sheet of the used hinge.

##### 5.4.3 Commercial building door with door-check

This application involves a heavier employment in comparison with the normal use in residential buildings, as the opening and closing operations happen in a less "controlled" way and the components are therefore subject to a higher and unexpected stress (see also previous Section 3).

Also the use of a door-check device involves a higher stress on the door and, finally, on the hinges.

The heavier employment also takes into account both the higher frequency of the door opening and the presence of the door-check: specially in the closing stage of the sash, the door-check works in a way that it is necessary to apply further strengths to the hinges, in order to ensure the door closing.

For this reason, when hinges are used in the construction of doors that are part of commercial buildings and with the application of the door-check, it is necessary to provide for a capacity reduction, as indicated in the instruction sheet, in comparison with the standard applications also supplied in the instruction sheet of the used hinge.

##### 5.4.4 Further notes on the applications

The door hinges made by Fapim S.p.A. are not suitable for their application on fire stop doors or smoke control door.

They can be used, on the contrary, for anti-theft applications (in this case please apply for specific information at the Fapim S.p.A Technical Department).

Our hinges have been planned and manufactured in order to be used in environments with "standard" atmospherical conditions, and therefore not in environments particularly aggressive and / or dangerous for the human being.

Admitted temperature range: -40 °C ÷ +50 °C

## 6. INSTALLATION

The constructor is requested to follow all the instructions of assembly and installation and particularly:

- The fastening screws of the hinges shall be fastened with a torque the value of which is indicated in the relative instruction sheet;

- It is important that after the laying of the door, you check the diagonals of the frame and of the sash and the exact perpendicular position of the door;
- In the building yard you absolutely have to avoid that concrete dust or other nature dust settles on hinges, as this might jeopardize their correct working;
- Before delivering your door to the purchaser, it is necessary for the constructor to make sure that during the building the door has not been damaged due to a possible incorrect use;
- If any faults or malfunction are noticed, the constructor shall signal this immediately;
- It is absolutely necessary for the final user to be minutely trained about the possibility of adjustment of the hinge, about the risks arising from improper use, about the need of carrying out periodical checks, maintenances and lubrications.

## 7. MAINTENANCE OF THE PRODUCT

In order to guarantee the correct working of your hinges for a long period, the following operations shall be carried out at least every six months:

- Clean hinges and remove dirt. Use neutral detergents only. The use of other acid or alkaline-basis products may damage the anti-corrosion layers.
- Check all components, with particular care to fastening and wear. You have to specially control if hinges have been damaged and / or deformed by a violent impact.
- Adjust your hinges, wherever possible, at the indicated points, in order to re-establish the correct working of the sash.
- Wherever provided for, lubricate your hinges as indicated in your assembly instruction sheet, using the lubricant there mentioned.

The adjustment of hinges, the substitution of their components and the assembly or disassembly of the door shall be exclusively carried out by competent and qualified staff.

## 8. PROTECTION AGAINST CORROSION AND PRESERVATION OF THE SURFACE FINISH

Our hinges are manufactured in a way so that their components are protected against corrosion from atmospheric agents by means of a proper surface finish, and they are therefore not attacked in a normally air-conditioned room, when no condensate can form or a condensate forms but rapidly dries.

In order to constantly preserve the surface quality of your door in general and your hinge in particular, and also in order to avoid deterioration from corrosion, it is absolutely necessary to observe the following points:

- Your door in general and your hinges in particular shall be sufficiently ventilated, especially during the building stage, in order for them not to be exposed to condensate or humidity.
- Your hinges shall be kept free from deposits and dirt of the building materials (dust, concrete, plaster and so on).
- Your hinges shall not be used in particularly aggressive environments.
- Aggressive vapours (for example formic acid, acetic acid or ammonia) in connection with condensate formations may cause corrosion of the door. If aggressions of such vapours occur, adequately ventilate the environment.
- Your door and your hinges in particular, shall not come into contact with sealing materials containing acids, acetic acids or the above mentioned substances, because both the direct contact and the evaporation may cause their corrosion.
- Your hinge can only be cleaned with diluted neutral PH detergents. In no way you can use aggressive and acid detergents.

## 9. OBLIGATION OF TRAINING AND INFORMATION

FAPIM S.p.A. make the technical documentation available as a support to the product, in order to enable dealers, designers, planners, constructors and installers to obtain the necessary information for a correct installation of door hinges and their following maintenance.

- Dealers are requested to observe the product information supplied by Fapim and forward it to constructors and / or designers.
- Designers are requested to obtain and respect the product information supplied by dealers or FAPIM S.p.A directly.

- Manufacturers and installers are requested to obtain and respect the product information. They are also requested to train their final users regarding the employment methods and regarding the need of maintenance of the door (cleaning, and possible lubrication).

## 10. CLAIMS

If any malfunction is found on your hinges, this shall be immediately signalled to the department in charge, using the relative form supplied to this purpose. No claims will be taken into consideration if they are not presented as above explained.

After a first check of the received information, FAPIM S.p.A. shall communicate the correcting intervention or the need of a deeper investigation.

The expenses for possible interventions or on-the-spot inspections, the expenses for re-establishing the door working condition, shall be honoured by FAPIM S.p.A. only if the malfunction is caused by manufacturing faults of the used product.

If it is clearly visible that the item or the component has a fault that is easily to be seen before installing it on the door and notwithstanding this, the element is assembled on the door anyway, FAPIM S.p.A. shall only supply the faulty element free of charge or issue a credit-note for the amount relative to the claimed components.

In any case FAPIM S.p.A. shall not be responsible for any profit loss of their customer as for the claims and the rules contained in this section.

If it is stated that the problem is caused by the faults of other components of the door, or by the non-observance of the instructions of assembly, maintenance etc. supplied with the product, the expenses born for the intervention shall be charged to the party that requested the on-the-spot inspection. In particular, the customer shall pay a hourly cost and stay and travel costs according to a detailed expenses list.

## 11. ATTACHEMENTS

- M-SRCL-HD0 –Form for claim information
- M-SRCL-HD1 – Expertise report for doors