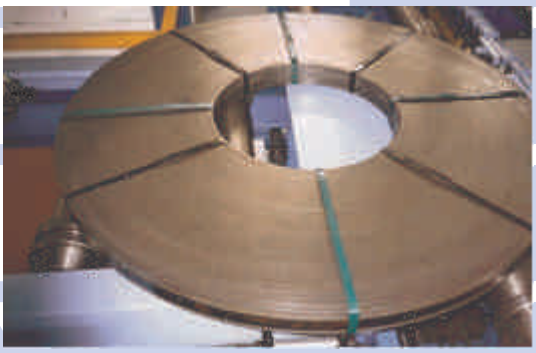

NORPA

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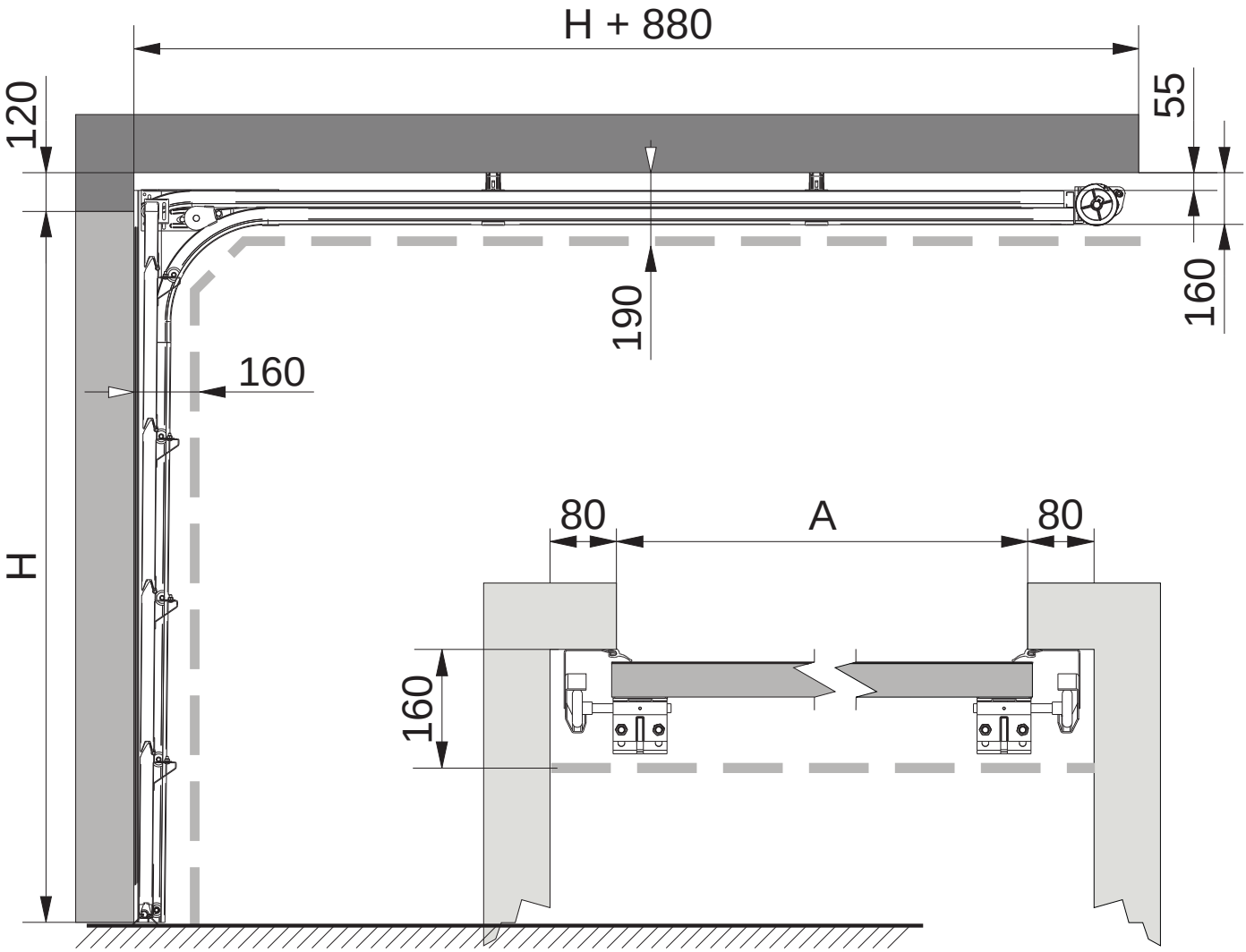
TECHNICAL INFORMATION

RAW MATERIALS

RESIDENTIAL SECTIONAL DOOR

PRN-120



Limite máximo de invasión de la puerta incluidos accesorios

Maximum limit of space occupied by the door including Accessories

A	H	G	**Superficie Máx.** *Surface Max*
5.000mm.	2.400mm.	X	10m²

Volver a índice

TECHNICAL INFORMATION
RAW MATERIALS
RESIDENTIAL SECTIONAL DOOR

CONTENTS

1.- PRESENTATION

The Norpa residential sectional door fabricated with the sandwich panel is one of our best options for the proper closing and functioning of the Garage which enhances both thermal and acoustic insulation. Norpa, S.L. has elaborately prepared this drawing out from the efforts of all the concerned departments to achieve a product of the highest quality in terms of performance, not only offering protection at different temperatures, but also against various noise levels, and offers the best guarantees in terms of quality, safety, performance and durability .

2.- CONSTRUCTION CHARACTERSTICS

Norpa, S.L. provides its residential door with all the components necessary for a safe and easy installation on site.

Roll formed panel, machined and assembled ready for quick and easy placement of the different hardware that will enable its assembly.

Rolling Guides perfectly assembled, machined and ready for a mooring site / pre-steel frames and reception of the panels

PERIMETER SEALS: High quality EPDM side, bottom and top seals that will make it possible to seal the door tightly are included in the closure profiles and their corresponding panels.. The side seals are supplied in the box with the hardware taking into consideration the simplicity of its assembly and also to avoid possible damage that might suffer in the process of packing and transportation.

SPRINGS: Norpa, S.L. administers all of its residential sectional doors with two springs obtaining thus, an equitable distribution of balance and pressure while the doors travel up and down. It should be borne in mind that there are exceptions to the cases in which the width of the gate limits us to the presence of a single pier or on the contrary, in the doors of more than 5000mm wide we are required placement of up to four springs.
In its standard version for this model sectional door, the springs are always of identical size and are calculated for a minimum of 20,000 cycles.

3.- CONSTRUCTION VARIANTS

Norpa, S.L. offers all possible options and solutions to problems that may be made when deciding on the purchase of a sectional door or installation for this type of enclosure:

WIDE RANGE OF WINDOWS with different shapes, sizes, finishes and decorations, entirely adequate and conforming to the panel model is used in its preparation.

PEDESTRIAN incorporate gateway implemented into the panel that makes up the sectional door. Can be found in its centred or displaced versions both with and without lower bottom socket (suitable for the disabled, prams, etc ...) can be manufactured to the left and right hand,

If the customer is looking for colours different to the standard sectional doors, Norpa, SL has a painting section that allows the coating of polyurethane paint of high performance of all its panels within the broad spectrum of RAL colour card, and stock of lacquered aluminium and steel in the same colours to match the final colour of the door.

4.- RAW MATERIAL

A.- SANDWICH PANEL

Monolithic isotropic sandwich panel constructed with an external base of galvanized steel sheet DX53D MAC Z-200 and pre-painted stucco embossed wood or 0.43 mm thick in accordance with the standards UNI EN 10327/10143 (*sheets and strips of low carbon steel for cold-formed, galvanized-coated, continuous hot dip. It is also possible the standard thickness of the coating-alloy iron-zinc (ZF) - from 100 to 600µ in different finishes: normal star (N), minimum star (M), finished regular (A), improved finish (B) and finished higher (C)),* with rigid polyurethane foam insulation and structural function (*the rigid polyurethane is one of the most efficient thermal insulation materials and durable. Its low thermal conductivity given by the closed cell structure gives it an excellent energy efficiency*) of density 38 kg / m³ with tolerance ± 2 kg / m³ and a galvanized steel sheet inner DX51D Z-200 MAC pre-painted and embossed stucco thickness of 0.37 mm conforming to standards UNI EN 10327/10143.

The panels are manufactured with residential *fingersafe* board and are available in thicknesses of 40mm and 500mm or 610mm high. *Fingersafe* system meets the European standards EN1604 norms for safety.

Both the upper and the lower panel are further strengthened from the interior, with reinforcements of galvanized steel DX51D Z-200 MAC 1.5mm thick and 30mm in width to allow effective clamping of the screws that attach to the intermediate and side hinges and avoid further drilling of these areas, which may weaken the panel.

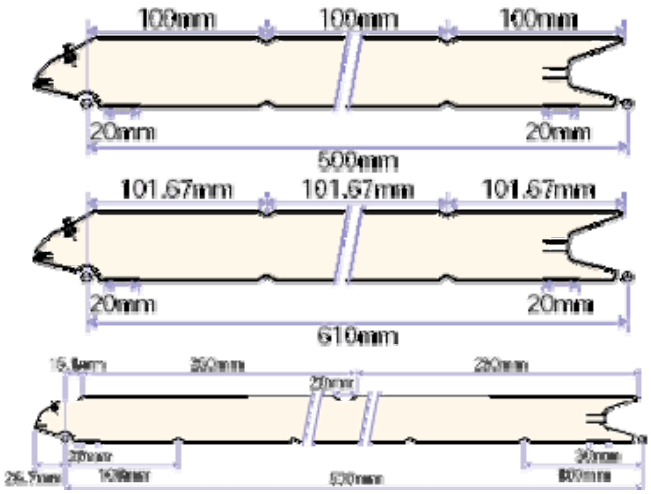
The format of the sandwich panel is variable in terms of its length(upto 13300mm), with their standard widths (500mm and 610mm) and the thickness of 40mm and 80mm (cold Storages of 0º).

Weight of panel with 40mm internal reinforcement:
- 500mm in width: 11 kg / m², 5.5 kg / ml
- 610mm width: 10.5 kg / m², 6.4 kg / ml

Table of tolerances panel with 40mm internal reinforcement:
- 500mm in width: thickness ± 2, ± 5 lengths off squad ± 3 ± 3% weight, deformation of the panel ± 3mm in height and 0.2% of the width (length), tolerance curve of outer 2mm maximum symmetry final ± 1% of the width of the panel (long), hollow 5mm maximum outgoing and incoming maximum 10mm, flat panel without visible defect when the panel is placed upright and seen from 1500mm in an arc of ± 60 ° from the perpendicular
- Format of 610mm in width: thickness ± 2, ± 5 lengths off squad ± 3 ± 3% weight, deformation of the panel ± 3mm in height and 0.2% of the width (length), tolerance curve of outer 2mm maximum symmetry final ± 1% of the width of the panel (long), hollow 5mm maximum outgoing and incoming maximum 10mm, flat panel without visible defect when the panel is placed upright and seen from 1500mm in an arc of ± 60 ° from the perpendicular

The RAL 9010 white gloss finish of the inner face of 25µ, smooth and paint of heat-hardened polyester is embossed in *stucco* during the manufacturing process of the panel. The paint finish of heat-hardened polyester of 25µ for the exterior is embossed with wood grain finish during the manufacturing process of the panel except in imitation wood (paint is substituted by a film of polyolefin / polyvinyl chloride semi-rigid 140µ (± 7%) decorated using rotogravure printing, embossed in wood finish or smooth), smooth poly grain (where the paint uses 35µ-10µ-primer it has better resistance to corrosion / UV and formability and is laminated without embossing)

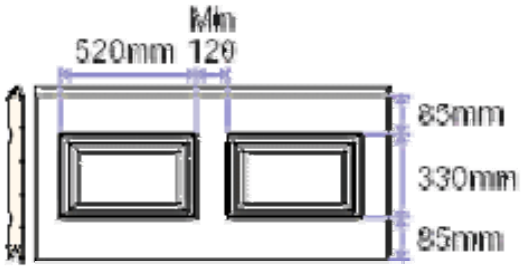
Colour Chart (RAL card and imitation wood) in sandwich panel residential model (finger proof) All Interior Side with RAL 9010.
500mm finished embossed wood exterior / interior stucco embossed:
- RAL 9010 White RAL 8014 Brown
- RAL 6009 Green RAL 7016 Anthracite
    - Imitation Wood- Oak Walnut Mahogany



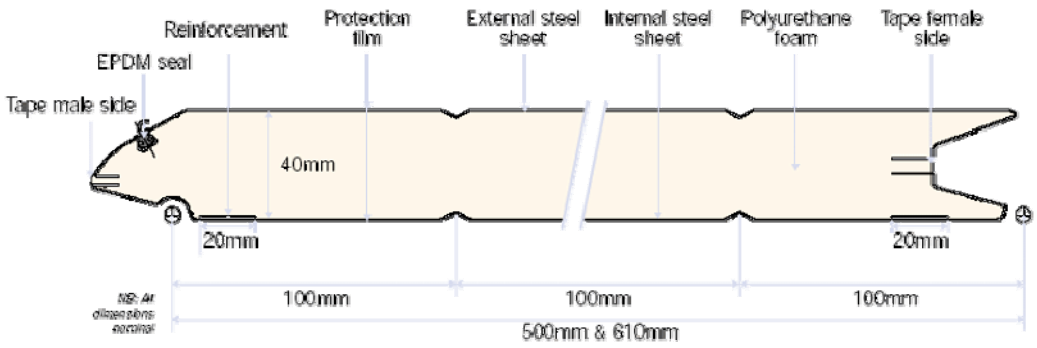
Colour Chart (RAL card and imitation wood) in sandwich panel residential model (finger proof) All Interior Side with RAL 9010.
610mm finished embossed wood exterior / interior stucco embossed:
- RAL 9010 White RAL 8014 Brown

Colour Chart (RAL card and imitation wood) in sandwich panel residential model (finger proof) with CASSETTE All Interior Side with RAL 9010.

- RAL 9010 White RAL
  - Imitation Wood- Oak Walnut

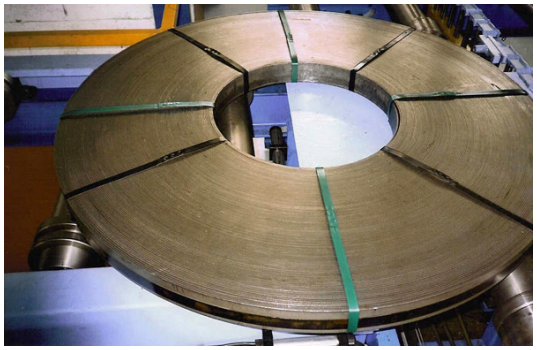


Colour Chart (RAL card and imitation wood) in sandwich panel residential model (finger proof) All Interior Side with RAL 9010.
610mm- RAL 9010 White RAL
- Imitation Wood- Oak Walnut



B.- GUIDE SYSTEMS OF STEEL

Guides consist of galvanized steel bends, half bends, guides and vertical profiles, horizontal profiles, joining pieces and end pieces shaped, bent and assembled by factory production process (profiling, bending, and riveting with robot and manual) with steel coils in thickness between 1, 1.5 and 2mm (based on model and target profile) in material finish DX51D Z-200 MAC / MB as standards EN10327 and EN10326.

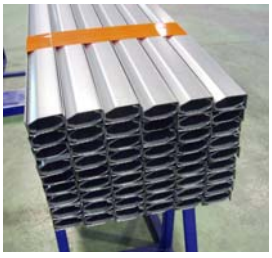


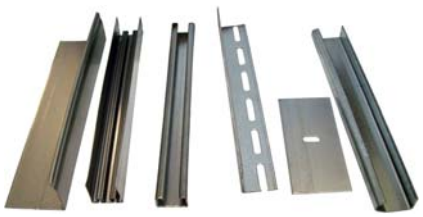
This galvanized steel cold-rolling and deep drawing is composed of a steel substrate on which a coating of zinc through a process of continuous galvanizing by hot dip immersion

The hot-dip galvanized steel provides excellent corrosion resistance and good forming ability in addition, the process model used for coating thickness of zinc deposit permits that can reach 275 g / m² (total both sides)

CHEMICAL ANALYSIS

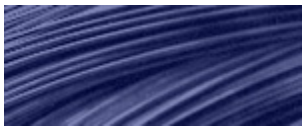
	C (%)	Mn (%)	P (%)	S (%)	Si (%)	Al (%)	Nb (%)	Ti (%)
DX51D +Z EN 10327	≤ 0,120	≤ 0,60	≤ 0,100	≤ 0,045	≤ 0,50	-	-	≤ 0,300
DX52D +Z EN 10327	≤ 0,120	≤ 0,60	≤ 0,100	≤ 0,045	≤ 0,50	-	-	≤ 0,300





C.- TORSION SPRINGS

Torsion springs made of wire Phosphate colour black (C spring wire DIN 17223C - classification of material: 1.1002) in diameters from 5mm to 10mm based on the rules 18204 DGT, DGT 18205, BS 4637, BS 4638, BS 5216, DIN 17223 ASTM A 417M, ASTM A 227M and ASTM A 228M.



The wire springs Phosphated conforms to the standards EN10088-3, ISO 6931 and EN 10270-3. Respecting the rules of Montreal regarding the CFC and complies with European regulations on heavy metals. ISO TS 16949, ISO 9001 version 2000 and ISO 14001.

D.- SAFETY SYSTEMS

All the safety systems used in our doors are patented and meet European standards for safety: Council Directive 89/106/EEC of 21 December 1988 on the approximation of laws, regulations and administrative provisions of Member States on Construction Products Norpa, S.L. uses the following safety systems:
- Safety anti-burst residential docks with TÜV approval Fv Tor 7 / 127. Peak torque 53Nm/Spring.

Safety anti-burst system for residential docks click approval
TÜV approved. Maximum load 92.5 kg per device.

All security systems are made of galvanized steel DX51D Z-275 MAC / MB of between 2 and 5mm thick in addition to the molten steel sprockets and meet ISO 9001 VISION 2000 and IQ NET, in addition to TÜV approval and the CE mark.

E.- STEEL CABLES

Norpa residential sectional doors are raised by the action of a loop with a steel cable (towing) of Ø3mm or Ø4mm around elevated drums . This is zinc-plated steel wire, its maximum force is 1770 N / mm ² and is a type 7X19 +0. The weight per meter is 0.034 kgs for Ø3mm and 0.05 kgs in the Ø4mm. The type of roll is a SZ crossing right.

TECHNICAL CHARACTERISTICS DEFINING THE STEEL CABLES

CONSTRUCTION
The cable is constructed in the following way:
•1-Central wire, 2-Strand, 3-Wire, 4-Cable, 5-Core

MASS OF STEEL CABLE PROVIDED
•Mass per unit of Length: Indicates the approximate weight per metre of the cable. Possible lubrication, type of grease and possible existence of coating and/or filling, will give variations in the mass per unit of length.

ROLLING:
•Taking into account the direction of the wires in the strand and the strands in the cable:
•sZ crossed right. The strands are rolled to the right and the wires in each strand to the left

DIAMETER
•The diameter of a cable is understood to be the diameter of the circumference around its straight section, expressed in millimetres.
• Nominal cable diameter. This is the dimension used to characterise the cable in question.
• Effective cable diameter. This is obtained by measuring it according to a determined method. Its value must fall within the admitted tolerances. Different International Standards tells us how to measure the effective diameter of a cable and give us the tolerances which we must apply in each case.

UNIT:

•From stranding, this is the length of the helix formed by the axis of an external wire measured on the strand's longitudinal axis.
•From wiring, this is the unit of the helix formed by the strand axis measured on the cable's longitudinal axis.

METAL SECTION:
•Nominal metal section of the cable is the sum of the nominal sections of cable from all the wires in the cable.
•The nominal straight metal section of cable A is calculated from its nominal diameter d and the straight section factor "c". The "c" factor is a value established for each cable composition.
•The quotient between the nominal straight metal section of cable A and the area of the perimeter of cable AU is called the filling factor and is designated using the letter "f". The "f" factor is used to determine the transverse section factor "c".

BREAKING LOAD FOR A CABLE
•Minimum Breaking Load (Fmin): Value specified in kN, which the Measured Breaking Load (Fm) must pass in a traction test.
•Cable quality (Rr) Breaking load requisite level, designated for no. (1770, 1960). (N/mm2).

CABLE WIRE FINISH
•Not coated (shiny or black): U
•Galvanised: Class B or class A (more g/m2 of zinc than B).

COMPOSITION:
•Cable composition is designated by how many strands it has, their composition and the type of core, for example:
- Seven strand cable each strand made up of 19 wires and a textile core. 6x 19+ FC.
- Eight strand cable each strand made up of 25 wires and metal core. 8x 25+ (7x 7+ 0)
Filling
- Depending on the no. of wires in each layer of the strand, this could be:
•Warrington (W) –Outer layer with 2 diameters of wires-
•Seale (S) –Same number of wires in last layers -
•Warrington -Seale (WS) –combination of the last 2 types-
•Filling (F) –Includes fine filling lines-
- Depending on the type of core, this might be:
•Fibre core (FC)
•Metal Core (IWRC)
•Strand core (WRC)

F.- HARDWARE

The entire range of fittings that is used in the door meet European standards CE EN-13241-1. This set of hardware consists of:

Drums 400-8 RH / LH rolling aluminum shaft Ø25mm cable and lifting Ø3mm Weight 0.23 kgs per unit (one mounted left and right). The maximum height of the door is 2550mm to 0.5 turns up the cable lift and 2080mm to 2.0 turns up the cable lift. Maximum

door weight: 240 kgs. Total external diameter of the drum: 112.5 mm. Total internal drum diameter: 120.4 mm. Drum Height: 41.7 mm. Bearing distance: 67mm.

Drums 400-12 RH / LH rolling aluminum shaft Ø25mm cable and lifting Ø4mm. Weight 0.38 kgs per unit (one mounted left and right). The maximum height of the door is 3070mm to 0.5 turns up the cable lift and 2558mm to 2.0 turns up the cable lift. Maximum door weight: 340 kgs. Total external diameter of the drum: 117.5 mm. Total internal drum diameter: 121.9 mm. Drum Height: 56.8 mm. Bearing distance: 67mm.

Residential Galvanized steel coupling for shaft Ø25, 4mm. Weight: 0.18 kgs.
Hinges intermediate panel protection with zinc-plated steel fingers 2.5 mm thick.
Zinc-plated steel hinges lateral 2.5 mm thick panel with protective finger holder with rollers rollers Ø11mm.

Zinc plated steel roller wheel with Ø46mm Nylon and ball bearing and steel Ø11mm shaft. Weight: 0.2 kgs. Maximum load: 35 kgs to 750,000 revolutions.
Top roll adjustable zinc-plated steel 3mm thick to roll Ø11mm.
Lower base plate RH / LH zinc-plated steel 3mm thick with support rollers for Ø11mm and mooring cable with thimble mounted lift.

Interior-exterior locks in zinc-plated steel (internal locks), black PVC outer plate, bulb European type zinc-plated steel handle and zinc-plated steel. Weight of the interior lock: 0.52 kgs. Weight embellisher interior / exterior: 0.30 kg (including mounting bolts). Bulb weight: 0.22 kgs. Latch weight: 0.31 kgs









5.- EUROPEAN TECHNICAL REGULATIONS ACCORDING TO EC-13241-1

Norpa, S.L. has verification and certification for its single metal sheet residential door which give the following data:
Test of fully assembled door

1.1WIND RESISTANCE: CLASS 5. Max pressure-Pa 1520
1.2AIR PERMEABILITY: CLASS 2
1.3WATER TIGHTNESS: CLASS 2
ACCOUSTIC VALUE- Sound reduction25db

THERMAL RESISANTCE:

1.4 Thermal resistance

Door (panel) type	Thermal transmittance, W/(m²K)	
	without windows U_{door} =	with windows U_{door} =
Residencial PRN	1.4	1.5

1.5 Operating forces, Safe opening, Dangerous substances and Durability of water tightness, thermal resistance and air permeability

Product name	Requirement	Result
Garage door	Operating forces	Pass
	Safe opening	Pass
	Dangerous substances	Pass
	Durability of water tight-ness, thermal resistance and air permeability	Pass

6.- VARIATIONS IN GUIDES

For perfect adaptation of the door to the site where it has to be installed, Norpa makes its residential door in 5 standardised guide versions, creating a perfect fit between the door and the garage space . E