

furniture for showrooms

kakemono totem

technical requirements

edition v1 - february 2022

1

technical requirements

general technical requirements

1.1 PREAMBLE

Renault expects all those involved in the "Renault Store" programme to meet their obligations in terms of results as per the requirements of the Technical Specifications. The general rules and specificities set out below are to be considered as the minimum necessary that has to be done to achieve the expected result.

1.2 SAFETY OF PERSONS AND PROPERTY

The supplier shall be able to provide proof that it has analysed the risks related to the services it is to provide and that its personnel and any sub-contractors have undergone sufficient training. Strict compliance with legislation in terms of safety and protection of workers is required.

1.3 RESPECT FOR THE ENVIRONMENT

Materials and methods which make it possible to reduce harm to the environment shall be used wherever possible (recyclable materials, energy-saving technologies, toxicity of materials and products used, etc.).

The supplier shall be able to provide proof that it has the various administrative permits (operating permit, environmental permit) necessary to manufacture the various items of equipment and that it complies with the operating conditions required by the legislation in force or by the specific operating conditions in the countries concerned.

A global approach such as the ISO 14001 standard is recommended.

1.4 QUALITY

The supplier shall be able to provide proof that it works in accordance with ISO 9000 quality assurance standards, formal certification being particularly recommended in this regard. The signmaker shall attach a specific Quality Plan to its offer to assure Renault of its capacity to supply finished products and spare parts that are compliant with the contractual requirements, within the set time periods. It shall request its sub-contractors to do likewise.

The procedures applied must make it possible to:

- Be sure that the parts and products purchased, manufactured and supplied shall neither be used nor delivered before they have been checked and be recognized as compliant.
- Procedures shall be set out for identifying causes of non-compliance, which make it possible to provide sustainable solutions that can be applied more widely to resolve the non-compliance and prevent it reoccurring.

These operations shall be recorded in the appropriate documents and be approved by Renault prior to being applied more widely.

- Track changes in the quality of products and assembly and removal services using inspection and audit indicators (incidents, complaints, etc.).

This tracking shall result in preventive or corrective actions; they shall be approved by Renault before being applied.

1.5 COMPLIANCE OF MESSAGES AND COLOURS

Visuals must comply with the official images contained in this document.

All shades have a 40% satin finish unless specified otherwise. Particular attention should be paid to complying with the colour code.

Compliance with the tolerances for the L.a.b. is required.

general technical requirements

2.1.1 STANDARDS

The reference base to be followed for design and manufacturing shall, at the very least, be that required by Eurocode standards.

The regulations relating to the dimensioning of structures in force in each of the countries concerned shall be complied with taking climatic conditions into account.

The following obligations in terms of results must be met:

- Supported under their own weight, the equipment must appear perfectly horizontal and vertical.
- The parallel alignment of separate elements must be observed.
- Under normal wind conditions (Cf. NV65 and NF EN1991-1-4 (Eurocode 1)), the permissible bend between the fastening and the point most distant from the fastening (dimension "d") shall not exceed $d/100$.

2.1.2 CLIMATIC CONDITIONS

Wind loads to be considered for the design of structures shall be taken from the Eurocode 1 rules (EN 1991-1-3): zones 4 (28 m/s), roughness IIIb, force coefficient equal to 1.80. Any structure situated in an unfavorable geographical area with regard to this load case shall be subject to a special design basis in order to meet the applicable standards.

2.1.3 DESIGN RULES

2.1.3.1 ALUMINIUM STRUCTURES

Design rules for aluminium structures - most recent edition of DTU rules (currently, July 1976).

Applicable standard for the execution of structures: NF EN 1090-2 and Eurocode 9.

2.1.3.2 STEEL STRUCTURES

Design rules for steel structures CM 66 » - most recent edition.

Applicable standard for the execution of structures: EN 1093 and Eurocode 3.

2.1.3.3 CONCRETE BLOCKS

Concrete blocks shall be of "weight" type with minimum reinforcement.

The concrete to be used shall have an ordinary Portland cement (OPC) content of 400 kg/m³ (s'28=300 bars - s28=25 bars).

2.1.3.4 DESIGN CALCULATIONS FOR PLASTIC ELEMENTS

Adapt the CM 66 rules using a safety coefficient of 2 for the stresses.

2.1.4 MATERIALS

2.1.4.1 GENERAL REMARKS

The materials used shall all be first-choice materials suitable for their envisaged use and they shall be used in accordance with the rules of best industry practice for the profession and in compliance with the standards and regulations in force in France and in the Countries in which they are intended to be used.

The materials used shall not have any defect that is likely to compromise the durability of the structures. The equipment shall be easy to clean, maintain and service.

The materials shall be capable of withstanding harsh climatic conditions such as rain, snow, hail, condensation, dust and salt spray.

Operation must be guaranteed between - 20 and + 80 ° C.

general technical requirements

2.1.4.2 STEELS

Steels shall be either "hot finished" as per NF EN 10210 or "cold finished" as per NF EN 10219-1 and 2. The quality of the steels shall be stated on the production drawings and it goes without saying that the mechanical properties of the different types of steels must be taken into account for stability calculations.

All elements shall be manufactured in a covered, sheltered location.

After machining, welding, drilling, notching, etc. the elements shall be prepared prior to anti-corrosion treatment: brushing of welds, careful deburring, cleaning, shot peening and sand blasting.

The anti-corrosion treatment shall be performed by hot galvanization of a minimum of 80 µm and shall provide fault-free protection for at least the period of the ten-year guarantee.

No machining may be carried out once the parts have undergone anti-corrosion treatment.

All fasteners and hardware (including hinges) shall be made of 18/10 stainless steel (NFE 25.033).

2.1.4.3 ALUMINIUM

The reference standard is NF EN 573-1. Parts used in a supporting structure shall be chosen from the "6000" series. For parts which are not used in a supporting structure, the "1000" series shall be acceptable.

The alloys are to be weldable.

The parts shall be carefully deburred and the welds shall be brushed before any protective treatment.

The visible parts of equipment shall be treated by the application of paintwork performed according to a "Qualicoat"-type procedure.

2.1.4.4 PMMA

The PMMA shall meet at least the following characteristics:

	Flat parts machined "cast" PMMA	Flat parts unmachined "extruded" PMMA
· Opal white (values for a test piece of 3mm thick)		
· Tensile strength	> 75 MPa	> 70 MPa
· Bending strength	> 130 MPa	> 120 MPa
· Bending modulus	> 3,250 MPa	> 3,000 MPa
· Unnotched CHARPY impact test strength	> 12 MPa	>10 MPa
· Expansion	<1 mm/1 m/10°C	<1 mm/1 m/10°C
· Light transmittance	> 50 %	>33 %

The thermoformed panels shall be made of white, light diffusing, extruded PMMA in compliance with the sheet manufacturer's heating parameters.

Where parts made of PMMA are more than 100 cm high, they shall be hung from the top by an adhesive PMMA cleat.

The thickness of the sheets shall be calculated in compliance with the tensile strength standards set out above.

2.1.4.5 POLYCARBONATE

The polycarbonate sheet shall meet at least the following characteristics:

- Uncoloured appearance
- Density > 1.2 g/cm³

general technical requirements

- Tensile strength: 60 Mpa
- Expansion < 0.7 mm/1 m/10°C
- Light transmittance > 90%

2.1.4.6 EXPANDED FOAM

These following characteristics must be met:

- Material 9010 white PVC
- Density > 50 g/cm³
- UV-stabilized: 14 MPa
- Shore hardness D > 75
- Expansion < 1 mm/1 m/10°C

2.1.4.7 PAINT

Painted parts must have an even appearance across their entire surface.

Defects such as pores, fissures, grains of dust, runs or waves of paint shall not be tolerated.

Samples of painted rough parts shall be tested and accepted by Renault, after having undergone the following tests performed by a certified body:

- Colour based on a LAB test with a MINOLTA 508 D colorimeter with D65 illuminant and the observer at 10° and specular component included (the tolerances in the CIELAB colour space are L +/- 1, a +/-1.5, b +/- 1.5).
- Gloss at 40 °: based on a test according to NF T 30064 standard.
- Gloss at 60 °: based on a test according to NF T 30064 standard
- Adhesion: resistance to peeling based on grid test.

Class 1, as per P UW 150 I. NF T 30038 standard

- Colour fastness:
QUV as per NF T 30036 after 200 hours of exposure.

Samples of each of the elements shall be supplied, upon request, to Renault for inspection.

2.1.5 ELECTRICAL EQUIPMENT

Assemblies with electrical equipment shall comply with the essential safety requirements of the European Union. Within this framework, the supplier shall obtain a certificate (for each type of equipment) which must clearly state the compliance of the assemblies, and thus of the components, with:

- requirements relating to the safety and protection of users and all other persons (directive 73/23/EEC without any lower voltage threshold)
- requirements relating to electromagnetic compatibility (directive 89/336/EEC).

The rating plate on each item of equipment shall display the CE mark indicating compliance with these requirements.

The regulations relating to low-voltage signage in force in each of the countries concerned shall be complied with taking climatic conditions into account.

In addition, the following requirements shall be met:

Electrical equipment shall be compliant with the standards in force from the series NFC 15-100, NFC 20-010 and NFC 20-030, NFC 71, NFC 32 for France and the IEC 60364 international standard.

general technical requirements

This concerns the following in particular:

- Category one electrical installations and low-voltage illuminated signage installations.
- The fire behaviour of electrical equipment and the degree of protection of enclosures,
- Flexible and rigid low-voltage cables.

In addition, the equipment shall comply regulations relating to the suppression of interference in inhabited areas and shall thus be delivered with interference suppression.

2.1.5.1 IP RATING

All the electrical equipment shall have a protection rating of at least IP 44-D.

2.1.5.2 PROTECTION AGAINST ELECTRIC SHOCK

All equipment shall be "class 1".

2.1.5.3 FASTENERS

The converters shall be placed in areas not subject to standing water.

The cables and sheaths shall be fastened to structures at 50 cm intervals.

2.1.5.4 CABLE ROUTING

Every cable or sheath passing through a metal part shall be routed through a cable gland.

Connection boxes.

An IP 44 sealed plastic connection box shall be provided at the inlet to each assembly. This box shall be equipped with a 5-input connection pin for 4 mm wiring.

All the connection boxes shall have the markings P1+P2+P3+T+N.

2.1.5.5 LEDs

The white LEDs used shall have the following characteristics:

- Lifetime: 50,000 hours for a loss of initial luminous flux of 50 % at the end of the period
- 5 year guarantee for operation 10 hours per day with a maximum loss of luminous flux of 20 %
- Operating temperature of LEDs: between - 20° C and +50 °C.
- Minimum protection index: IP 67
- The LEDs used must comply with the following international standards: IEC 62504 TS Ed. 1, IEC 61231, IEC 62560 Ed 1, IEC 62031 LED module safety, IEC 61347-2-13 LED control gear.

2.1.5.6 CONVERTERS

The power supply converters for the LEDs shall have the following characteristics:

- Wide power supply voltage range (100 to 300 volts)
- Reversible protection against increase in temperature and overload
- Protection against short-circuits with automatic restart
- Minimum protection index: IP 67
- Operation compliant with: EN 55015, EN 61000-3-2, EN 61547, EN 61558-2-17.

general technical requirements

2.1.6 FASTENERS AND HARDWARE

All fasteners and hardware used shall be made of stainless steel (non-magnetizable).

Aluminium "pop" rivets are accepted as long as the steel rods are systematically removed.

For welding, the wires and electrodes are to be compliant with NF 81.830.

2.1.7 ANCHORING SYSTEMS AND FASTENINGS

The plinths for all equipments shall be completely removable without having to remove another element of the assembly. The plinths shall cover the attachment plates or fastenings. The attachment plates shall be easily accessible once the plinths have been removed.

For each of the assemblies which require a foundation block or fastening to a separate structure, the signmaker shall provide the elements necessary, as well as the conditions to be used to make design calculations for these elements (wind conditions and design calculation methods).

2.1.8 IDENTIFICATION PLATE

Each finished product shall be marked with a metal identification plate on the structure which shall show at least the following information:

- Name of the signmaker
- Product code and batch
- Month and year of manufacturing
- The CE Marking if it is illuminated.

2.1.9 STORAGE

The finished products shall be stored in a dry and well-ventilated location.

Renault inspectors shall be able to have access to them at any time.

general technical requirements

2.2. GUARANTEES

The suppliers undertake to offer the guarantee conditions below for their products:

- 2 year guarantee on the installation against defects and faulty workmanship,
- 5 year guarantee on the electrical equipment including the LEDs and converters,
- 5 year guarantee on the adhesive elements,
- 5 year guarantee on digital printing (anti UV treatment),
- 5 year guarantee on workshop-lacquered sheet metal,
- 5 year guarantee on the chrome-plated emblems,
- 7 year guarantee on sheet metal and profiles pre-lacquered by the aluminium manufacturer,
- 10 year guarantee on the internal structures,
- 10 year guarantee on the PMMA acrylic panels.

2

general remarks

2.1 stand alone variant

principle

This kakemono totem will be installed in the product areas of Renault showrooms.

In its center, it has a kakemono printed on both sides.

The kakemono has 2 braids allowing it to be stretched on horizontal bars taken up in buttonholes on the vertical uprights.

The installation and the removal of the kakemono must be simple, achievable without tools, by the personnel of the concessions.

a kit presentation

The kakemono totem is delivered as a kit in individual cardboard packaging allowing it to be transported without damage.

An assembly instructions are present in the packing box written in English.

The required tools for assembly are included in the kit (if needed).

The kakemono is not present in the packaging and will be separately delivered but rods (2) used for fitting are included.



2.2 wall mounted variant

principle

This wall mounted kakemono may be installed on the walls of Renault showrooms when it's not possible to implement stand alone variant.

In its center, it has a kakemono printed on a single side.

The kakemono has 2 braids allowing it to be stretched on horizontal bars taken up in buttonholes on brackets.

The installation and the removal of the kakemono must be simple, achievable without tools, by the personnel of the concessions.

a kit presentation

The wall mounted kakemono is delivered as a kit in individual cardboard packaging allowing it to be transported without damage.

An assembly instructions are present in the packing box written in English.

The required tools for assembly are included in the kit (if needed).

The kakemono is not present in the packaging and will be separately delivered but rods (2) used for fitting are included.



2.3 colours & materials



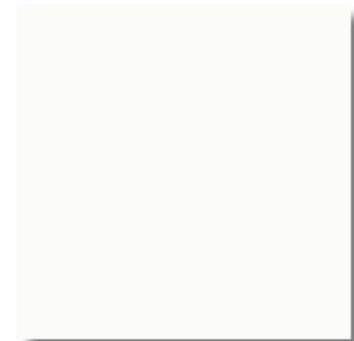
fabrics

- digitally printed canvas
- matt finish



dark grey eq. to RAL 7043

- post-lacquered steel plate with frost aspect (to reduce footprints on surfaces)



white eq. to RAL 9010

- post-lacquered aluminum profile with 40% gloss satin finish

3

**technical principles
for stand alone item**

3.1 description

general concept

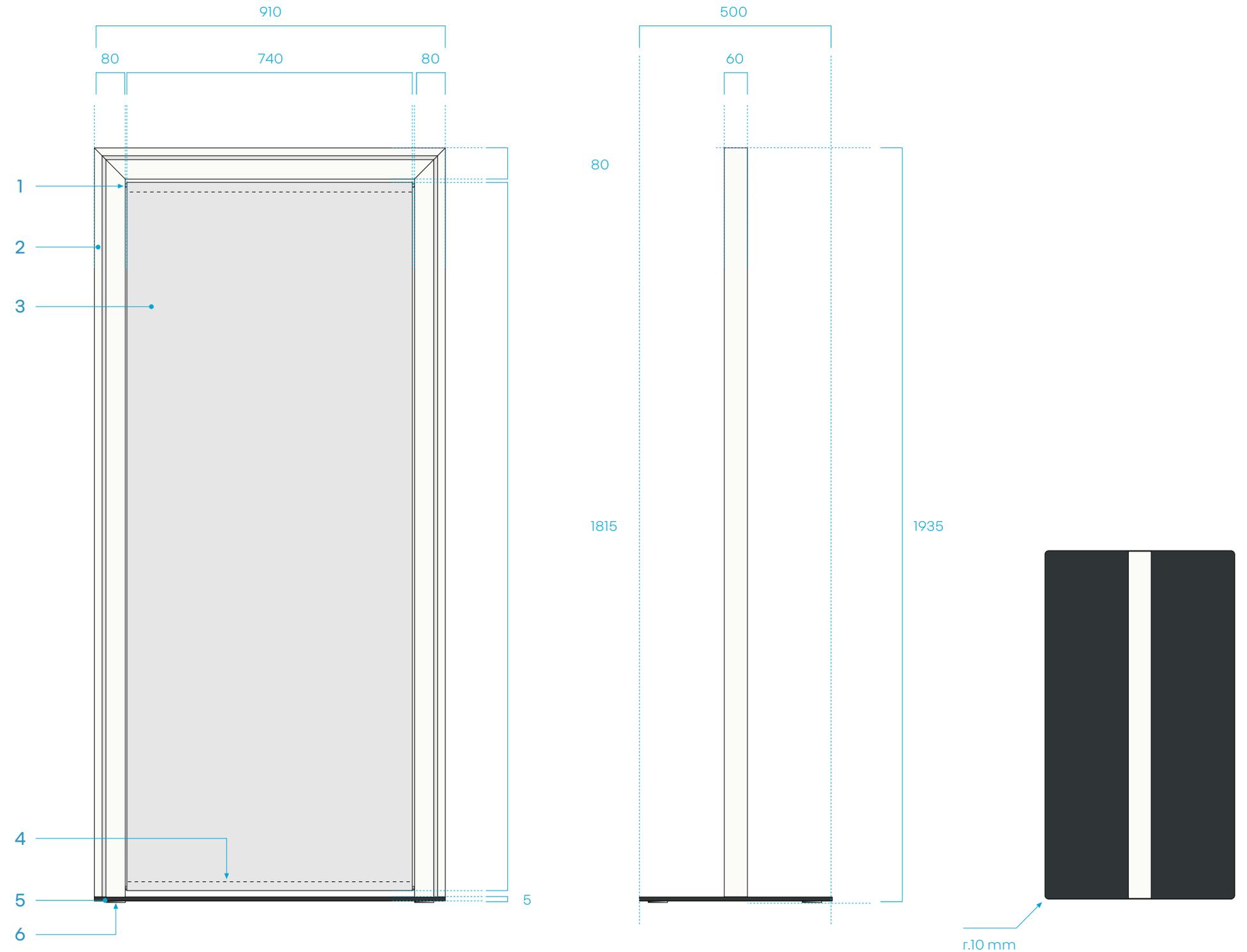
The totem has a peripheral frame made of white lacquered aluminum profile.

This frame is taken up by invisible screws on a lacquered steel plate serving as ballast in aluminum sheet with rounded edges (5 mm thick) in dark grey color.

4 rubber pads located under the plate avoid any damage to the tiling.

key

- 1 metal rod
- 2 peripheral frame laquered in white RAL 9010 with satin finish
- 3 kakemono
- 4 braid
- 5 cladding of plate laquered in grey RAL 7043
- 6 verticality adjustment cylinders



3.2 details of kakemono fittings

kakemono fittings

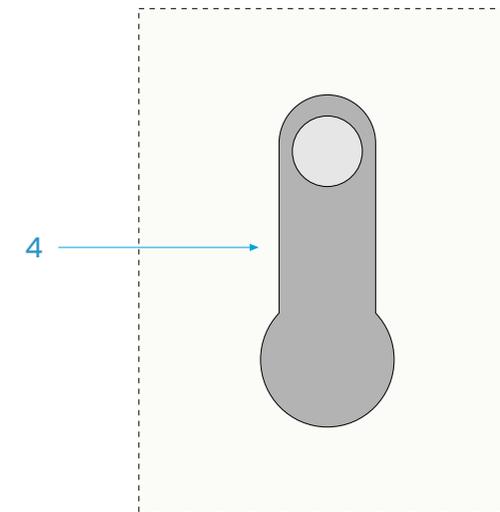
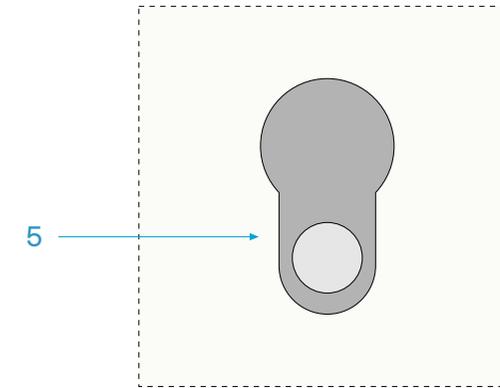
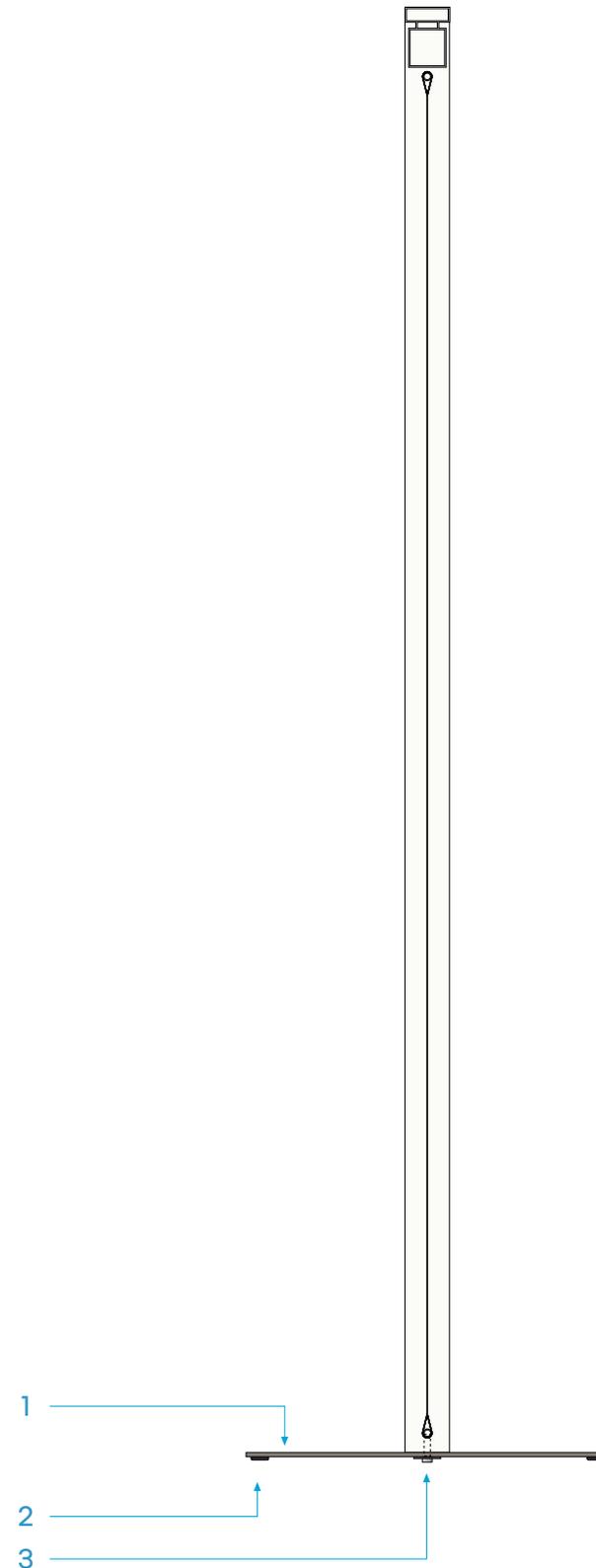
Dimensions of the kakemono are: H.1815 x L. 740 mm.

Braids are present at the bottom and at the top allowing the passage of machined metal rods.

These rods are included in buttonhole holes made at the top and the bottom of the interior face of vertical uprights.

key

- 1 steel plate th. 5 mm
- 2 rubber pads th. 5 mm
- 3 fitting of frame on plate
- 4 top buttonhole
- 5 bottom buttonhole



3.3 details of peripheral frame

principles

The frame can be made in a single part or in several parts depending of the know-how and the associated prices of each solution.

one-part concept

Assembly is made with a 45° cut angle. No visible screws are allowed.

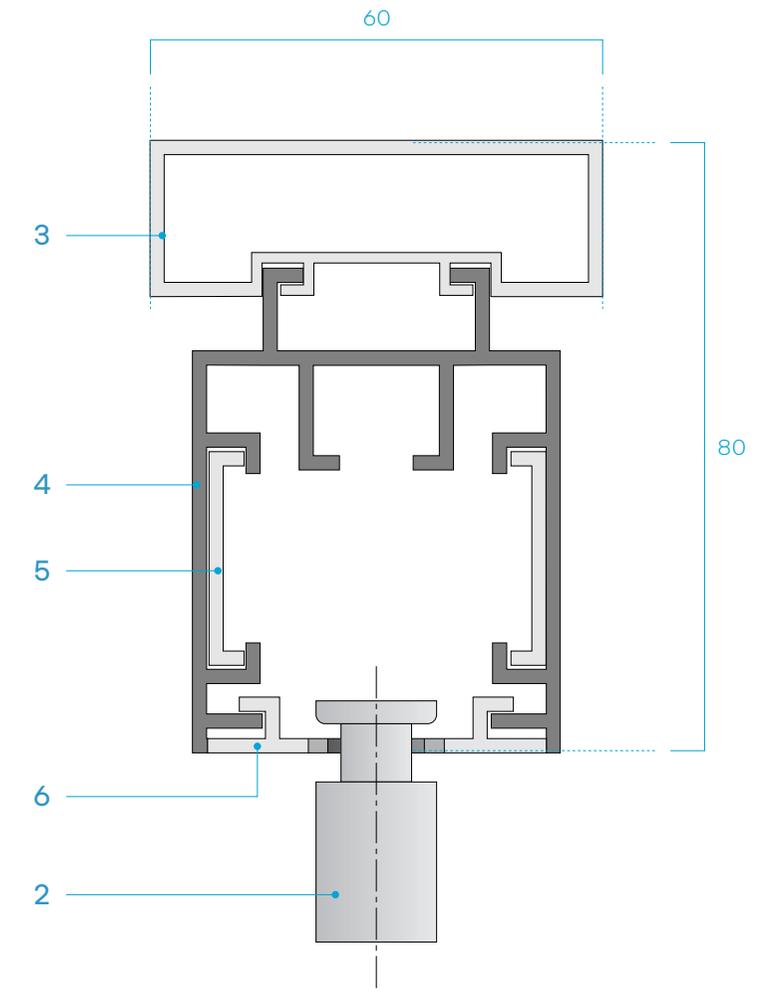
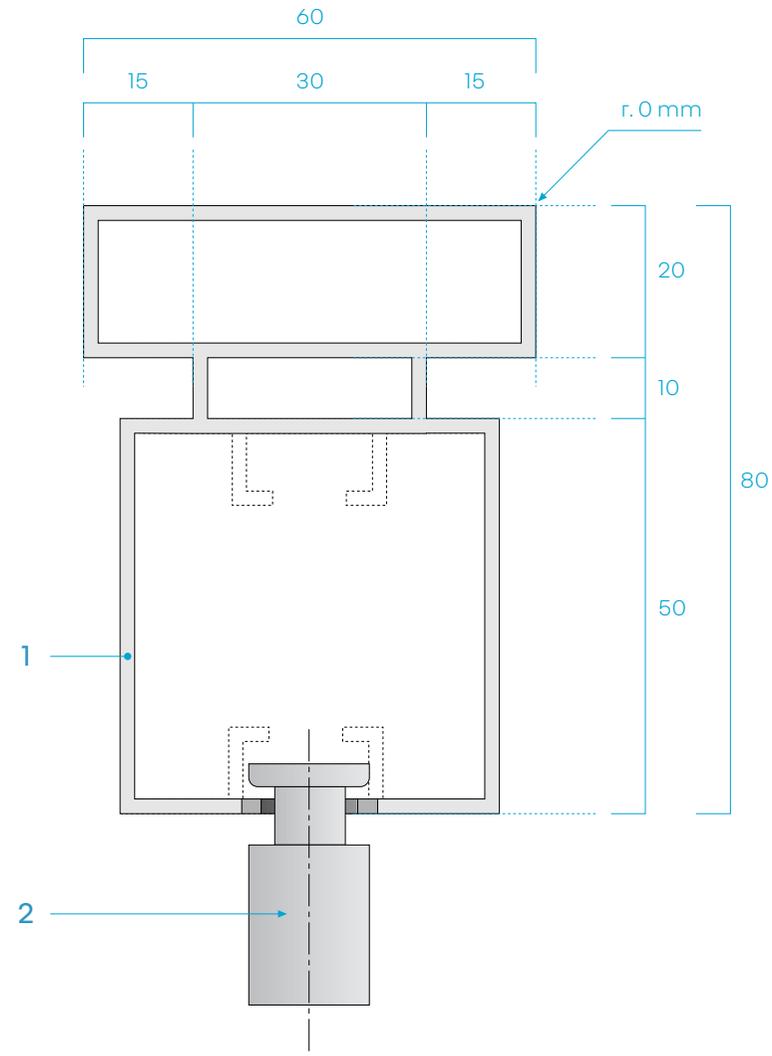
Glue can be used to ensure assembly between parts if needed.

multi-part concept (example)

Frame is composed with different parts. Junction between inner parts is made with an injected aluminium part (see exploded view page 18).

key

- 1 single part aluminium profile
- 2 metal rod
- 3 outer profile
- 4 inner profile
- 5 junction part
- 6 interior profile with cutout for rods



3.4 exploded view of peripheral frame - 1

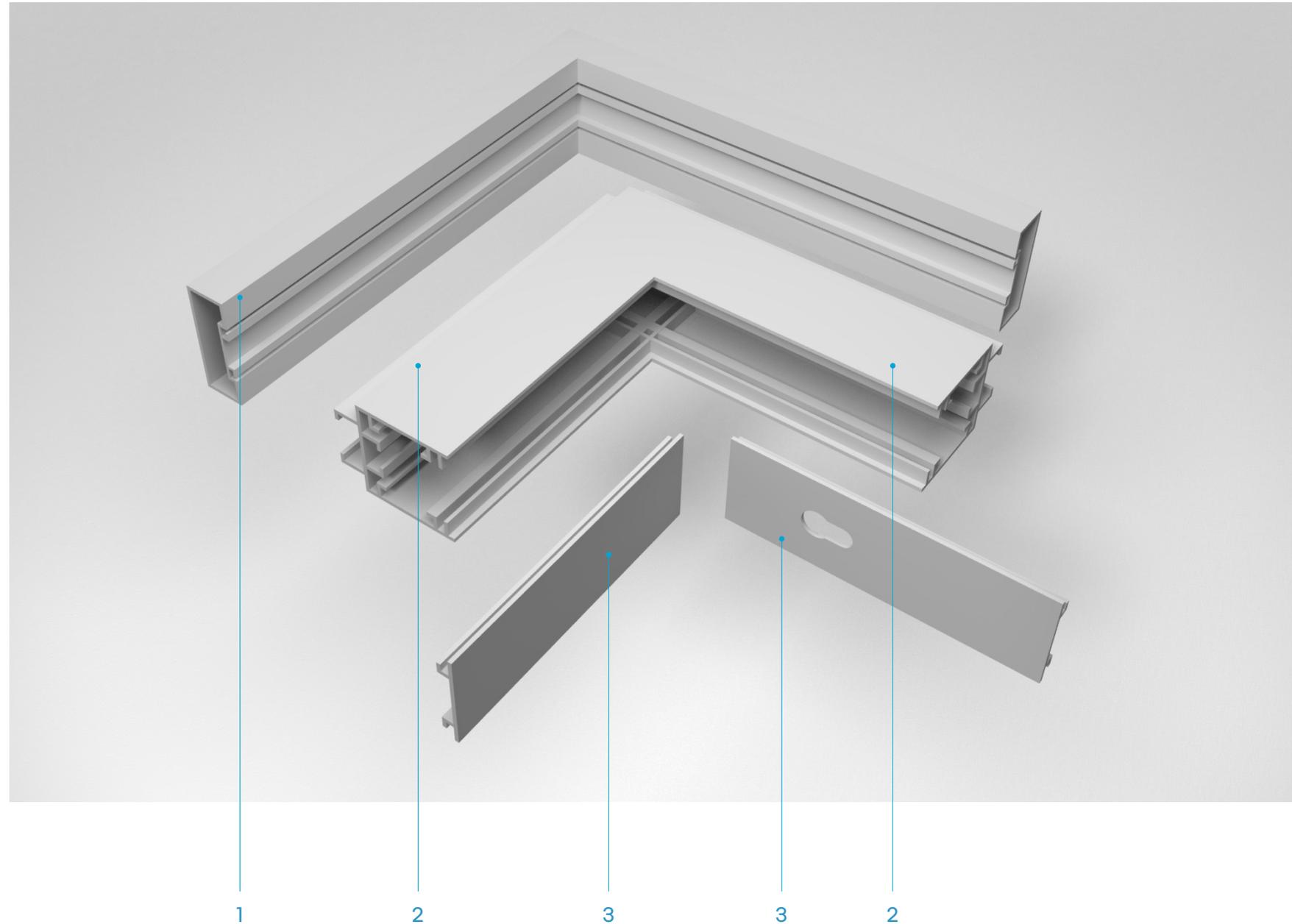
principle

Image shows an example of profiles with a 45° assembly.

Precise drawings of profiles shall be studied and defined according to economical and technical considerations.

key

- 1 outer profile
- 2 inner profile
- 3 interior profile with cutout for rods



3.5 exploded view of peripheral frame - 2

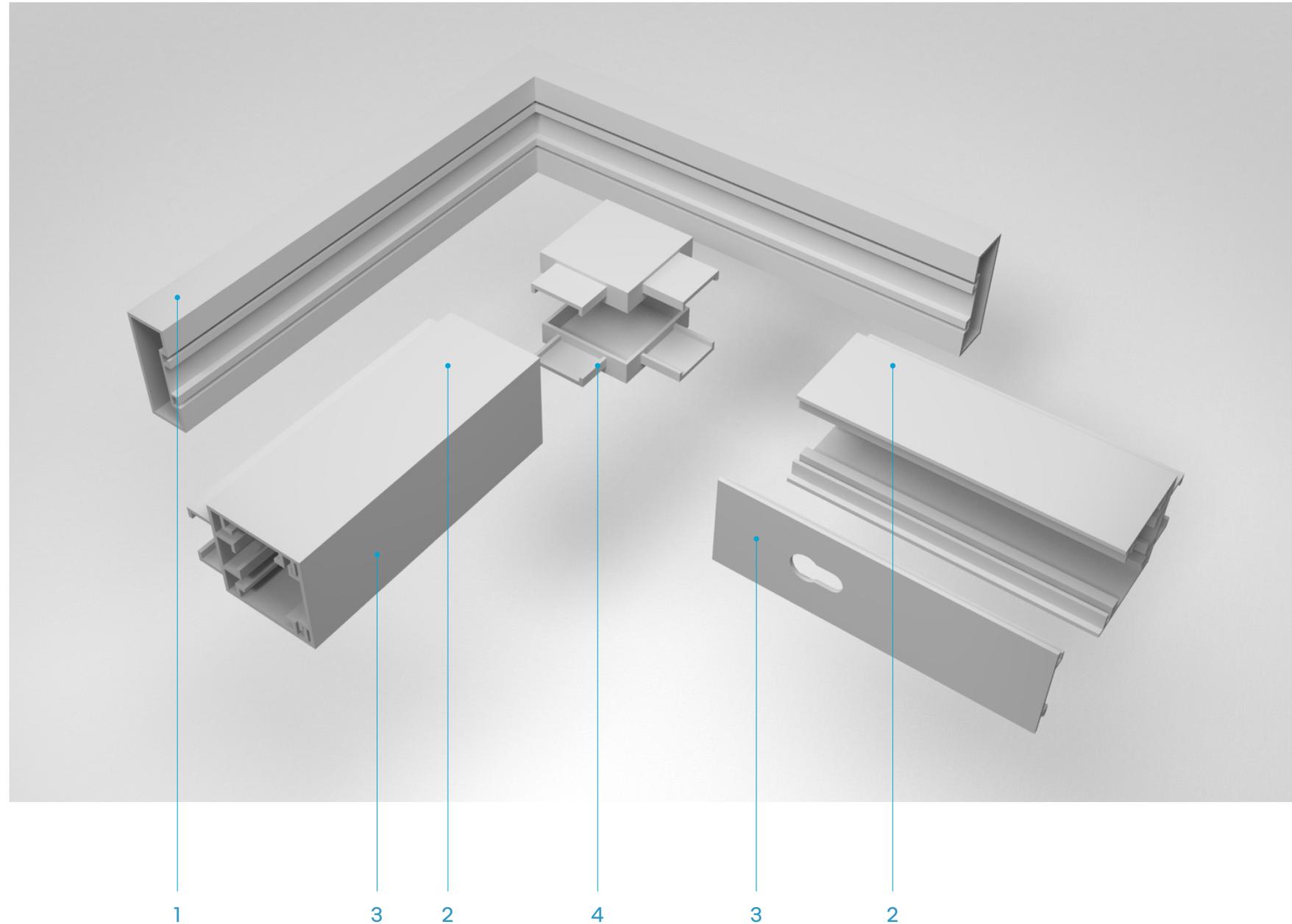
principle

Image shows an example of profiles with a 90° assembly.

Precise drawings of profiles shall be studied and defined according to economical and technical considerations.

key

- 1 outer profile
- 2 inner profile
- 3 interior profile with cutout for rods
- 4 junction part



4

**technical principles
for wall mounted kakemono**

4.1 description

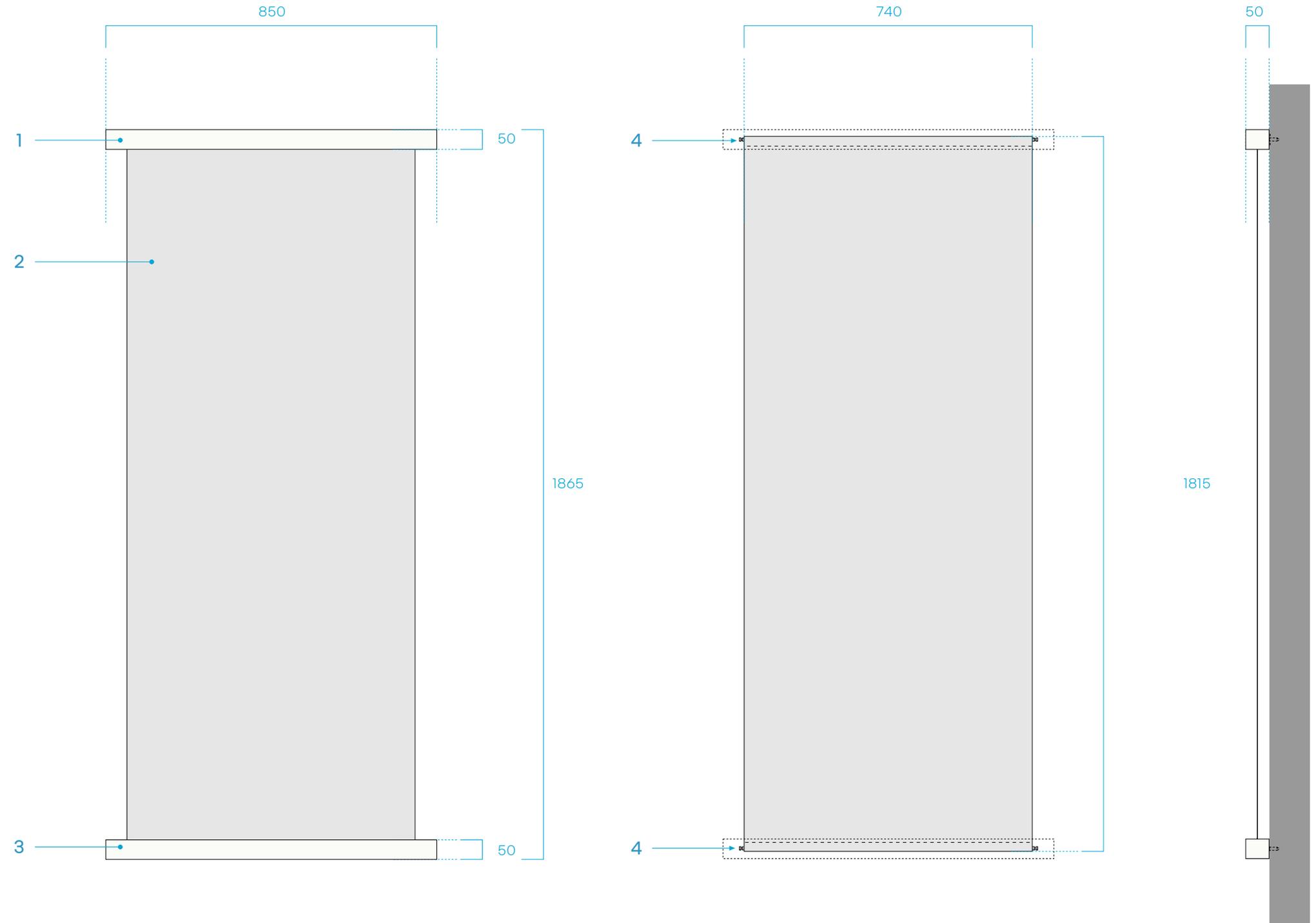
general concept

The kakemono as for the totem can be installed against walls using the same principle to stretch the canvas.

Top part and down part of kakemono are masked by a removal cladding made by an horizontal profile to facilitate the installation or the removal.

key

- 1 upper front profile laquered in white RAL 9010 with satin finish
- 2 kakemono
- 3 upper front profile laquered in white RAL 9010 with satin finish
- 4 metal rod



4.2 details

principles

Structural profile is cut in 48mm part.

Finishing is prelaquered in RAL 9010 white.

The back profile and structural element are fixed on the wall by screws.

Finishing of back profile is prelaquered in RAL 9010 white.

The front aluminum profile is snapped into the structural profile, sliding in channels provided for this purpose.

Finishing of front profile is prelaquered in RAL 9010 white.

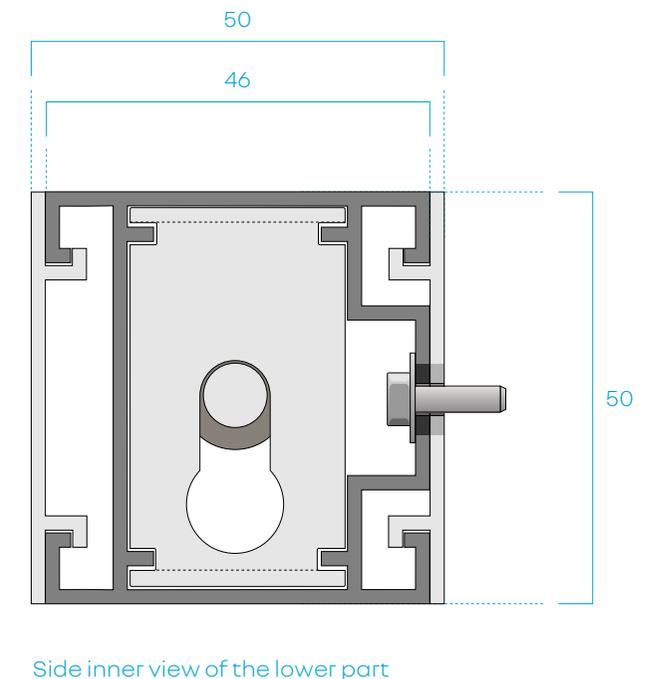
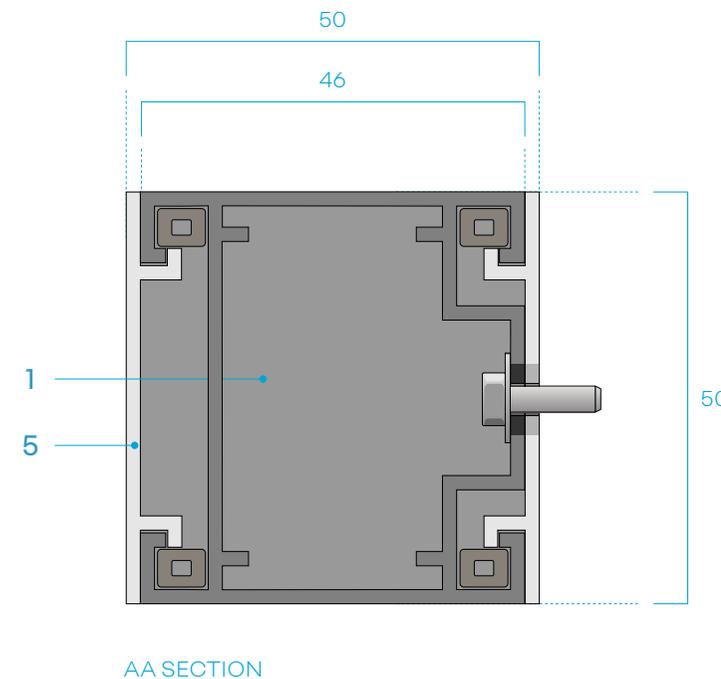
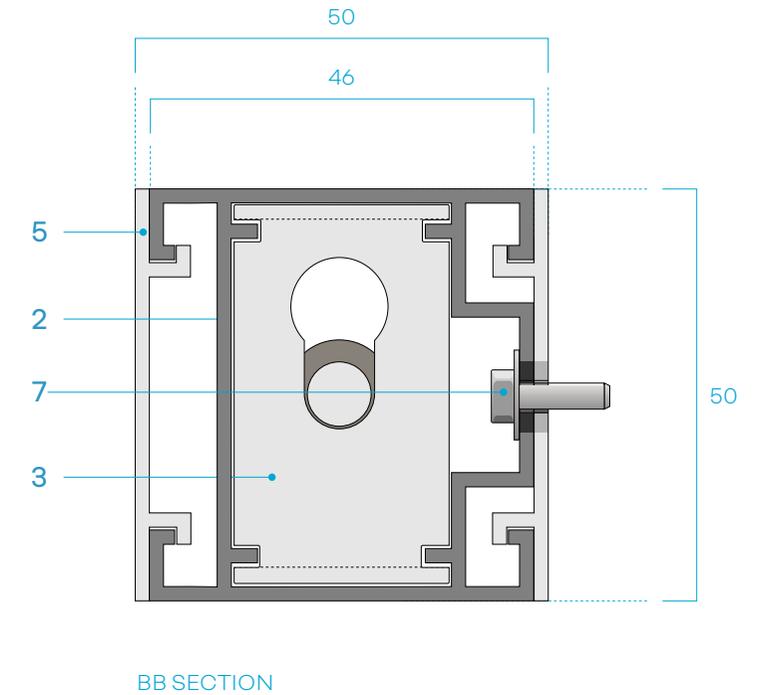
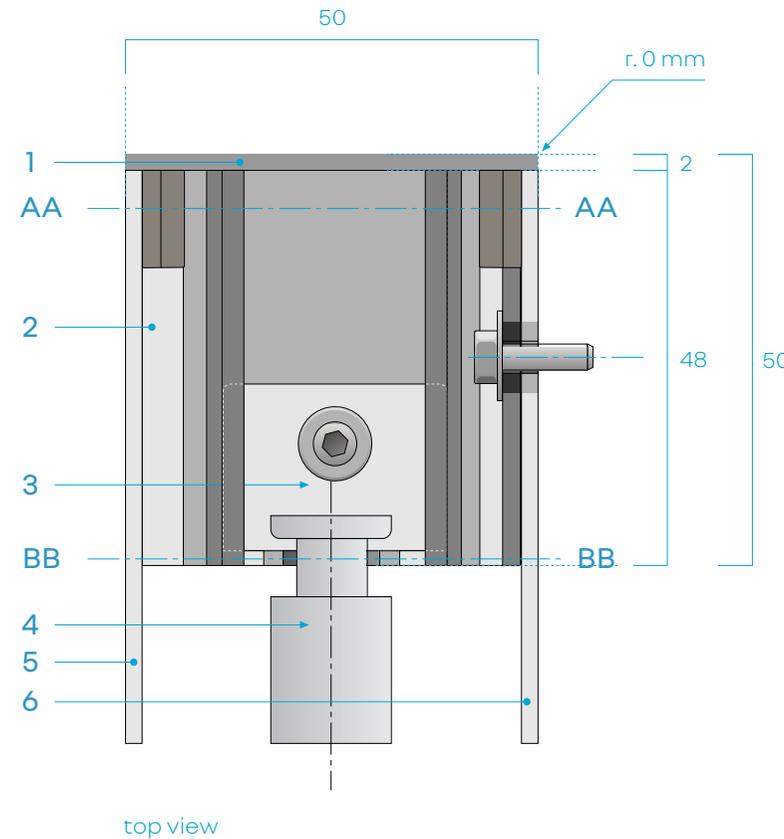
The rods have a shoulder allowing a fitting on a folded metal part fixed in the channels of the structural profile. A screw secures this part.

Metal part is made of galvanized steel.

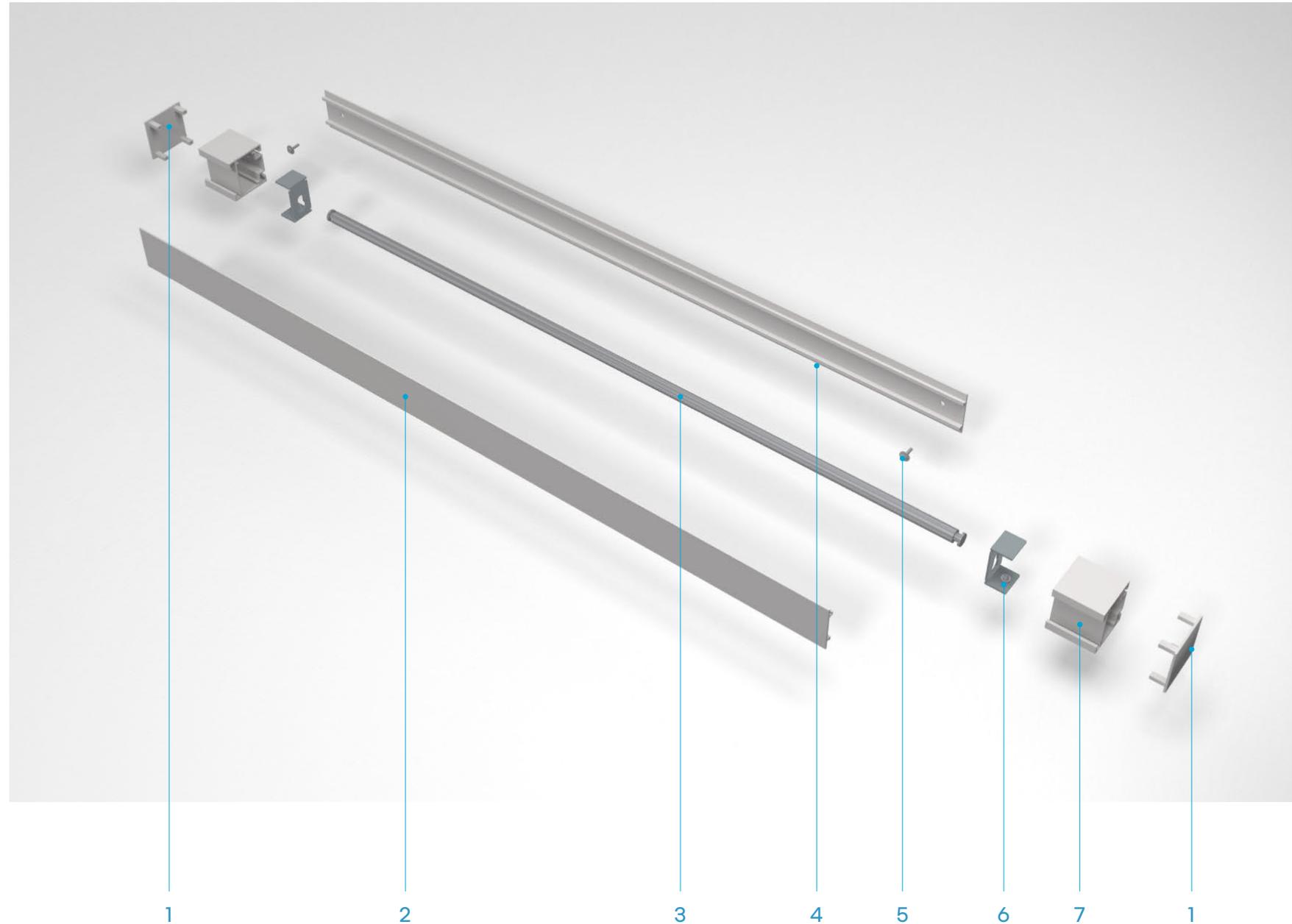
Lateral masking is provided by a cap made of injected plastic with a mass-tinted RAL 9010 white satin finish.

key

- 1 thermoplastic injected cap
- 2 structural profile
- 3 bracket with outout for rods
- 4 rod
- 5 front profile
- 6 back profile
- 7 fitting to wall



4.3 exploded view



key

- 1 thermoplastic injected cap
- 2 front profile
- 3 rod
- 4 back profile
- 5 fitting to wall
- 6 bracket with cutout for rods
- 7 structural profile

5

**technical principles
for stretched canvas**

4.1 characteristics

material

Opaque PVC canvas 510 g/m² FR.

It is important to respect the characteristics of the material used for the manufacture of the canvas in order to obtain a perfectly stretched canvas and the opacity necessary for mounting canvases on two sides.

printing

Meet proofing standards according to ISO12647-7.

Smooth transitions and wide color gamut with up to 86% Pantone® coverage for enhanced print quality.

The inks are formulated to produce low-odor prints tested according to the DIN EN 1230-1 standard.

For indoor applications, inks are certified and meet AgBB criteria.

Prints provide up to 12 months fade resistance under indoor lighting conditions.

characteristics	specifications	method
thickness (mm)	0.37	
total mass (g/ m ²)	510 ± 20	iso 2286-2
pet base fabric (g/m ²)	78 ± 10	iso 2286-2
breaking load (dan/ 50Mm)	L:125 - T:100	iso 1421
tearing resistance (Dan)	T: 6 - L: 7	din 53363
pvc adhesion to the basefabric	min 6.0	iso 2411
behaviour Against Fire	Fr	din 4102-1-1998

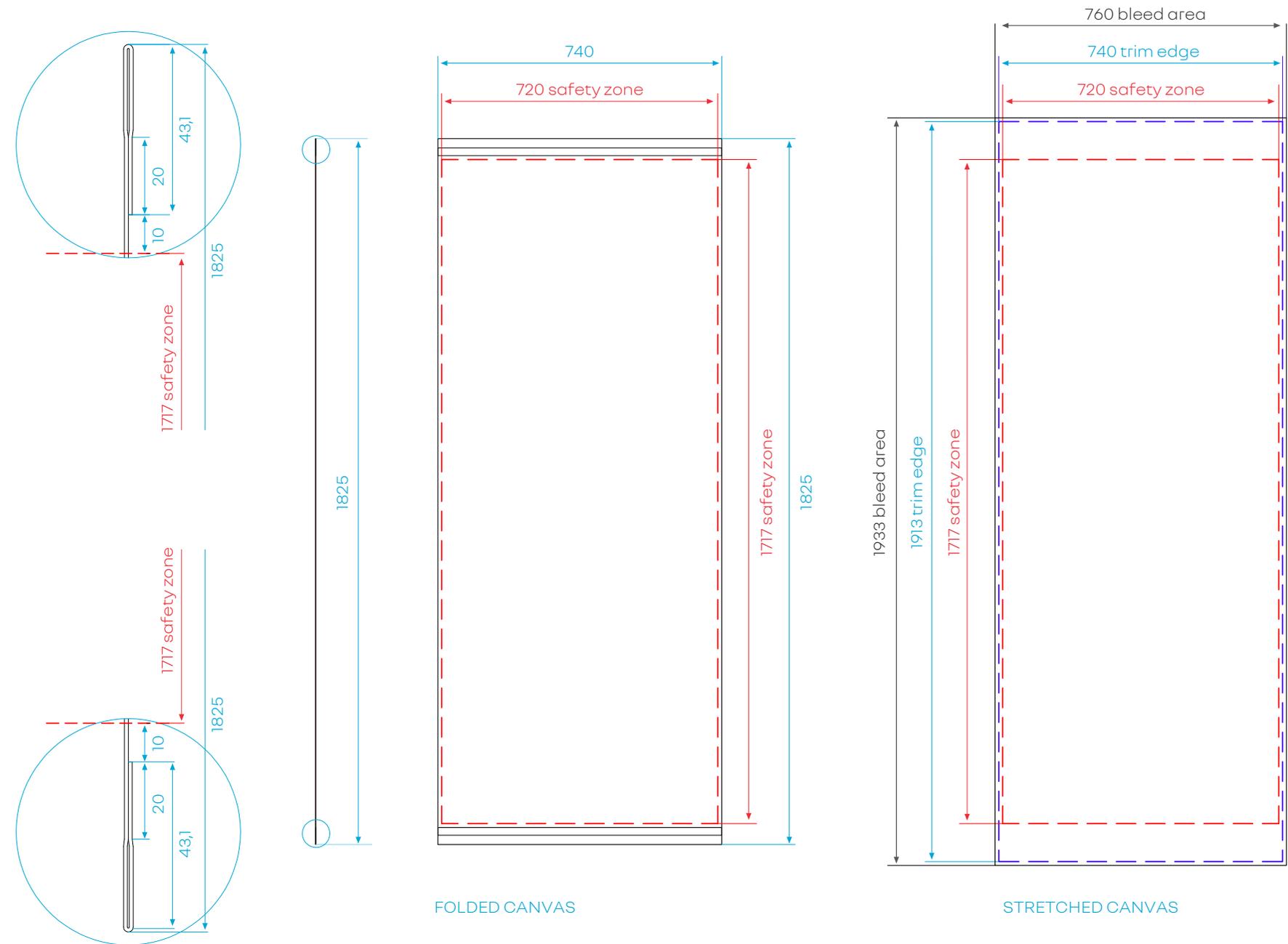
4.2 printing and cutting area

principle

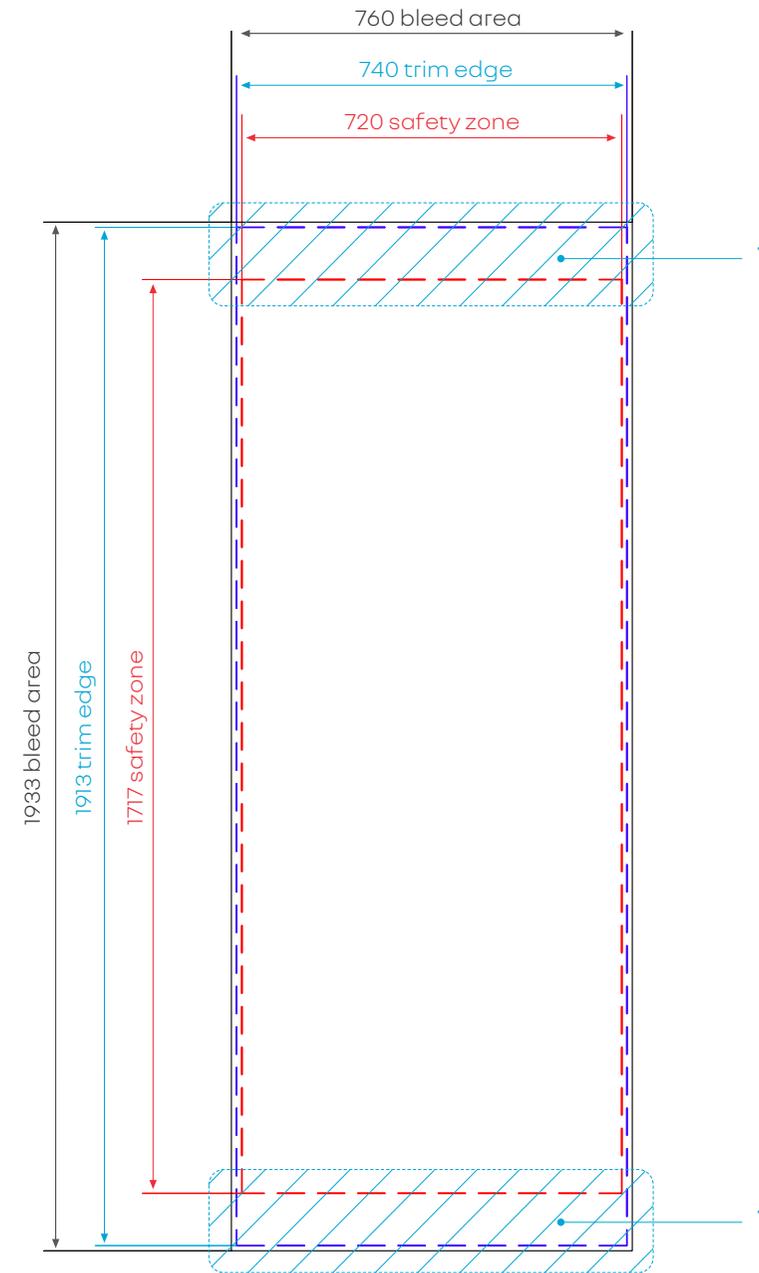
The printed kakemono will be installed on 2 horizontal bars putting it in tension.

2 loops glued in the upper and lower parts allow the passage of the tension bars.

Different areas are identified in order to provide good visibility of the printed visual and the level of visual quality required.



4.3 double-sided canvas



caution

When creating advertising (the final art), keep in mind that once the canvas is folded, an area of side B invades side A and causes effects that can distort the image.

1 overlapping area of the printed sides

Example with different advertisements on each side



SIDE A



SIDE B

