



RENAULT
Passion for life

Renault Store - Technical specifications

Directional signage



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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. e.

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 signwriter 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.

General technical requirements

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.

2.1. General technical 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 $d/100$.

2.1.1. 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.

2.1.2. DESIGN RULES

2.1.2.1 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.

2.1.2.2 Steel structures

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

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

2.1.2.3 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).

General technical requirements

2.1.2.4 Design calculations for plastic elements

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

2.1.3. MATERIALS

2.1.3.1 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.

2.1.3.2 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).

2.1.3.3. 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.

General technical requirements

2.1.3.4. 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.

2.1.3.5. Polycarbonate

The polycarbonate sheet shall meet at least the following characteristics:

- Uncoloured appearance
- Density > 1.2 g/cm³
- Tensile strength: 60 Mpa
- Expansion < 0.7 mm / 1 m / 10°C
- Light transmittance > 90%

2.1.3.6. 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

2.1.3.7. 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.

General technical requirements

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 1. NF T 30038 standard
- Colourfastness:
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.

2.1.4. 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.

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.

General technical requirements

2.1.4.1 IP rating

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

2.1.4.2 Protection against electric shock

All equipment shall be "class 1".

2.1.4.3 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.

2.1.4.4 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.

2.1.4.5 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.

2.1.4.6 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

2.1.5. 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.

2.1.6. 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 signwriter 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).

2.1.7. 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 signwriter
- Product code and batch
- Month and year of manufacturing
- The CE Marking if it is illuminated.

2.1.8. 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.

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 diamonds,
- 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

General view

Description

The directional signs are arranged so as to signpost the customer journey from the approaches to the site to the customer reception areas.

This signposting only covers areas that are accessible to customers: showroom and workshop areas.

Entrance-exit signs and parking signs

Les panneaux Entrée/Sortie et les panneaux de parkings complete the directional signs.



Colours and materials



RAL 9010 satin white

- Pre-lacquered aluminium sheeting, 15/10 mm thick
- Satin finish with 40% gloss



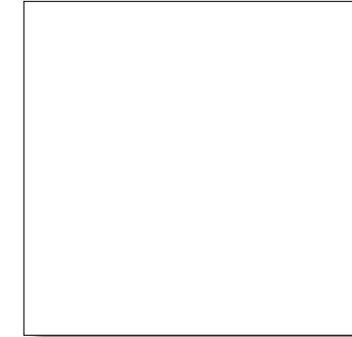
Dark grey equivalent to RAL 7021

- Pre-lacquered aluminium sheeting, 15/10 mm thick
- Satin finish with 40% gloss



Pantone 426 EC grey

- Satin or matt finish adhesive
- Pantone equivalent 426 EC
- Black & White PMMA



Pure White

- Satin or matt adhesive
- Light diffusing PMMA
- Light transmittance 50%

3

Technical principles

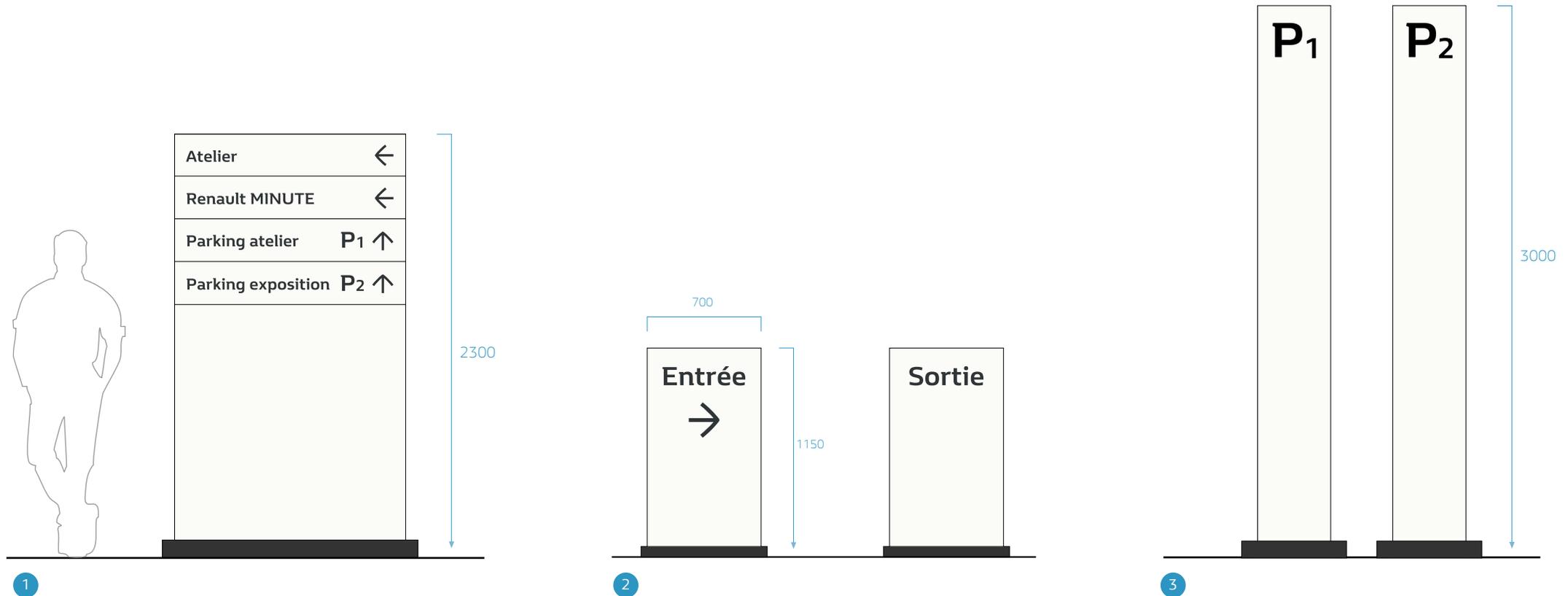
General presentation

The directional signage

The directional signage is arranged so as to signpost the customer journey from the approaches to the site to the customer reception areas.

It uses the following items:

- 1 Directional signs,
- 2 Entrance-exit signs,
- 3 Parking signs.

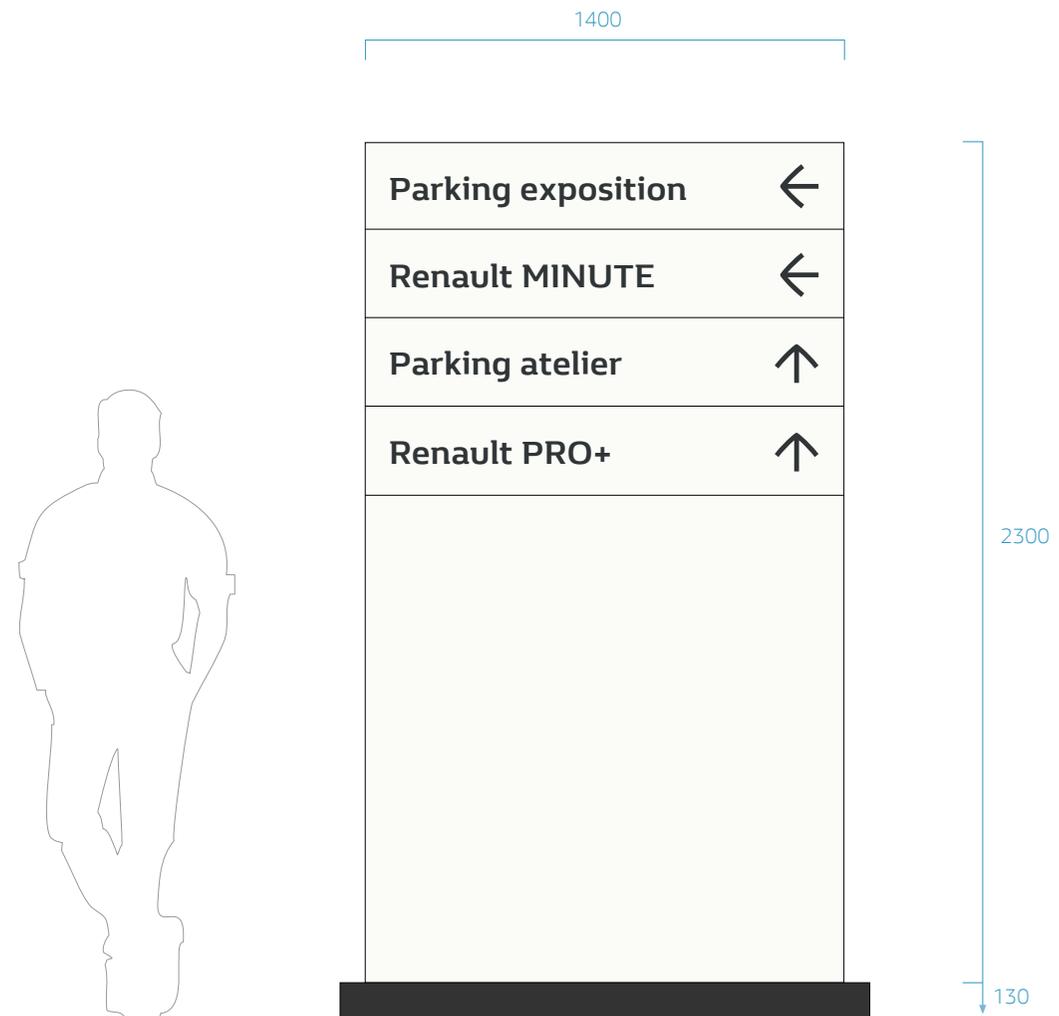


General presentation

Description

The directional sign is made up of aluminium panels featuring lettering and arrows.

Attachment to the ground requires a concrete block fitted with an anchoring device(chemical anchor bolts or stud bolts).

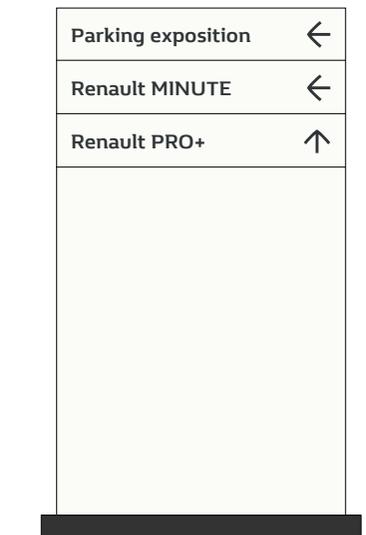
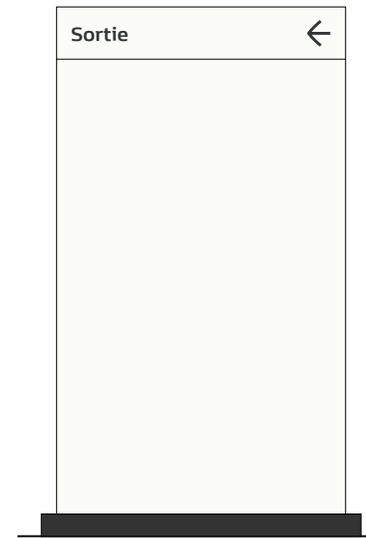


Adaptations

Principle

Directional signs always have the height of 2300 mm.

They may accommodate up to 4 indication texts, front and rear.



Illuminated and non-illuminated version

Principle

Directional signs can be illuminated or non-illuminated as required.

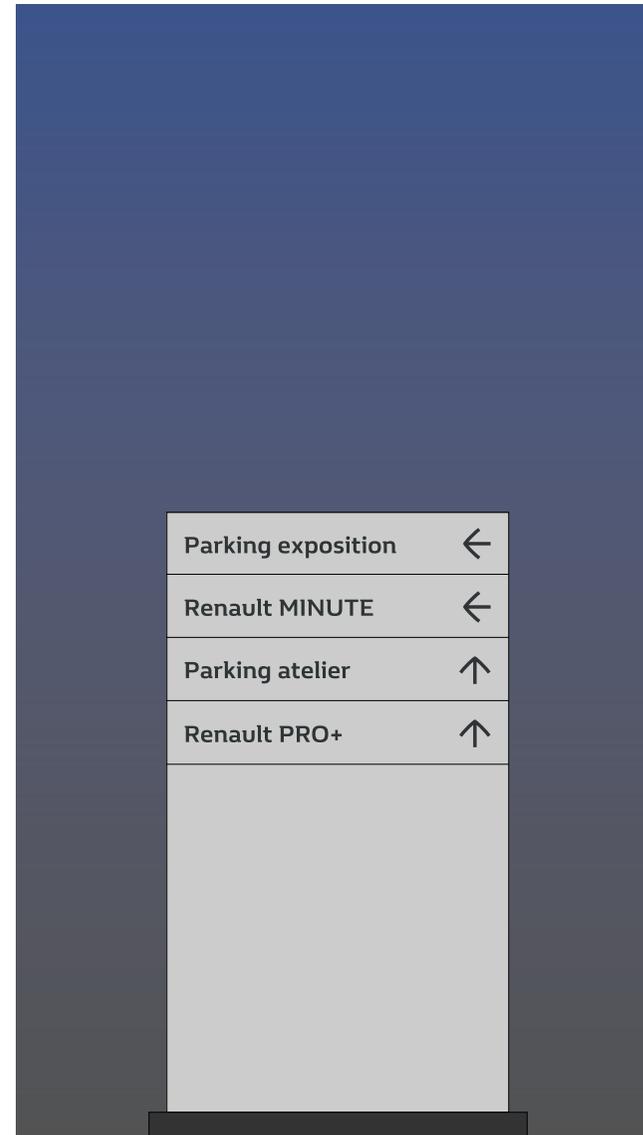
Illuminated directional signage are illuminated on both sides. In this case, lettering is in Black and White PMMA (lettering and arrows). The trim is in laminated PMMA on the back of the aluminum surface.

Non illuminated panels receive an adhesive trim.

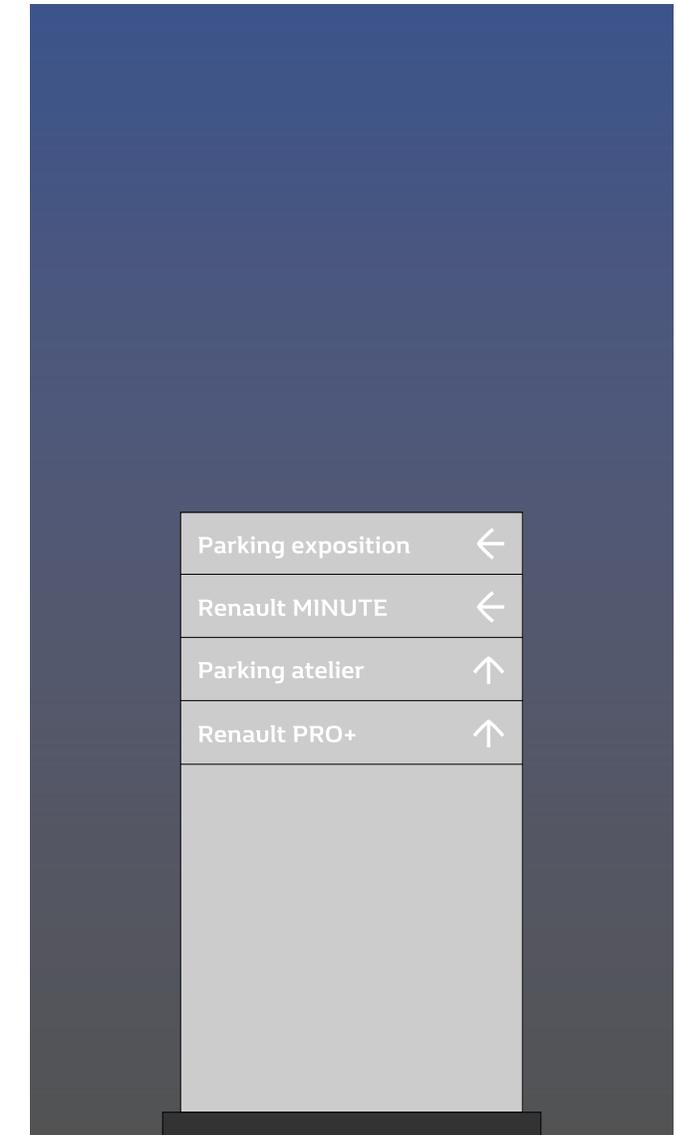
In both cases, the horizontal strips are always adhesive.

Key

- 1 Non illuminated directional sign
- 2 Illuminated directional sign



1

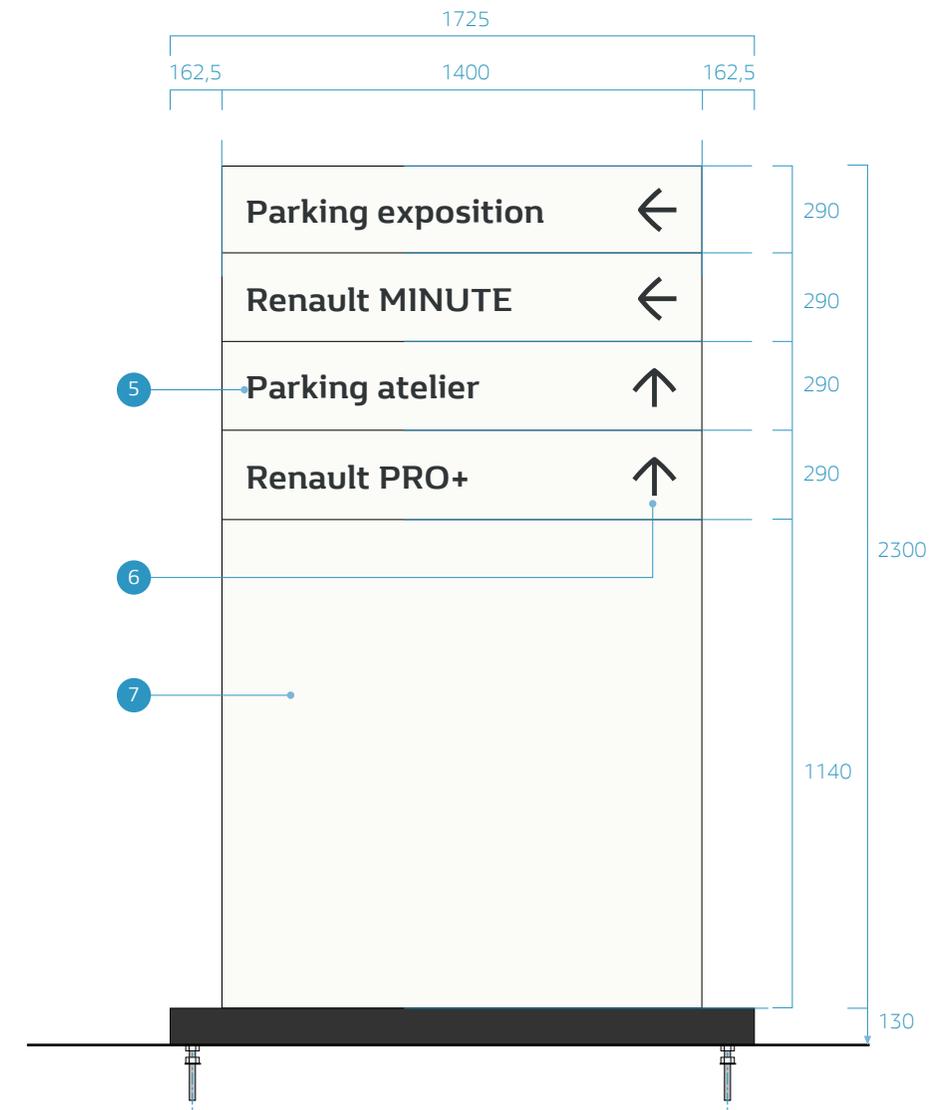
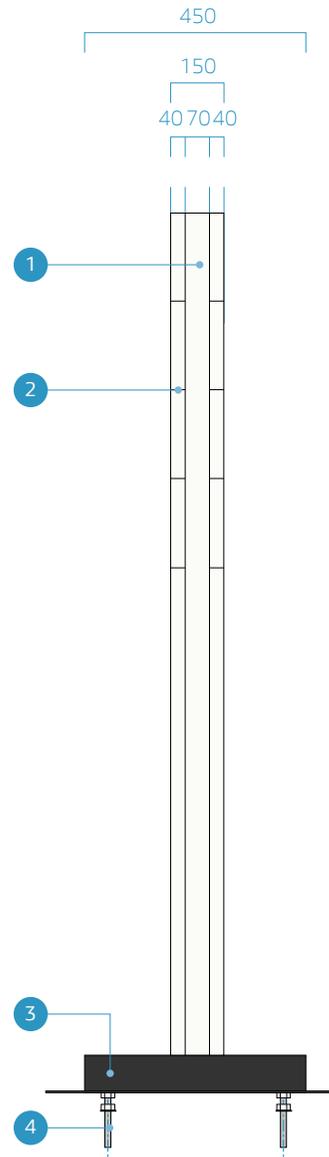


2

Description

Key

- 1 Side closure cover, RAL 9010 satin white in pre-lacquered aluminium sheeting, 15/10 mm thick
- 2 Satin or matt black adhesive contour, thk. 4 mm
- 3 Attachment plate concealer, RAL 7021 dark grey in pre-lacquered aluminium sheeting, 15/10 mm thick
- 4 Fixing plates and reinforcements for fixing to ground (set in ground), galvanized for protection
- 5 Texts cut out in pre-laquered aluminium sheet with laminated Black & White PMMA, thk. 3 mm (or adhesive variant)
- 6 Arrows cut out in in pre-laquered aluminium sheet with laminated Black & White PMMA, thk. 3 mm (or adhesive variant)
- 7 Front panel, RAL 9010 satin white in pre-lacquered aluminium sheeting, 15/10 mm thick



Outline on surfaces

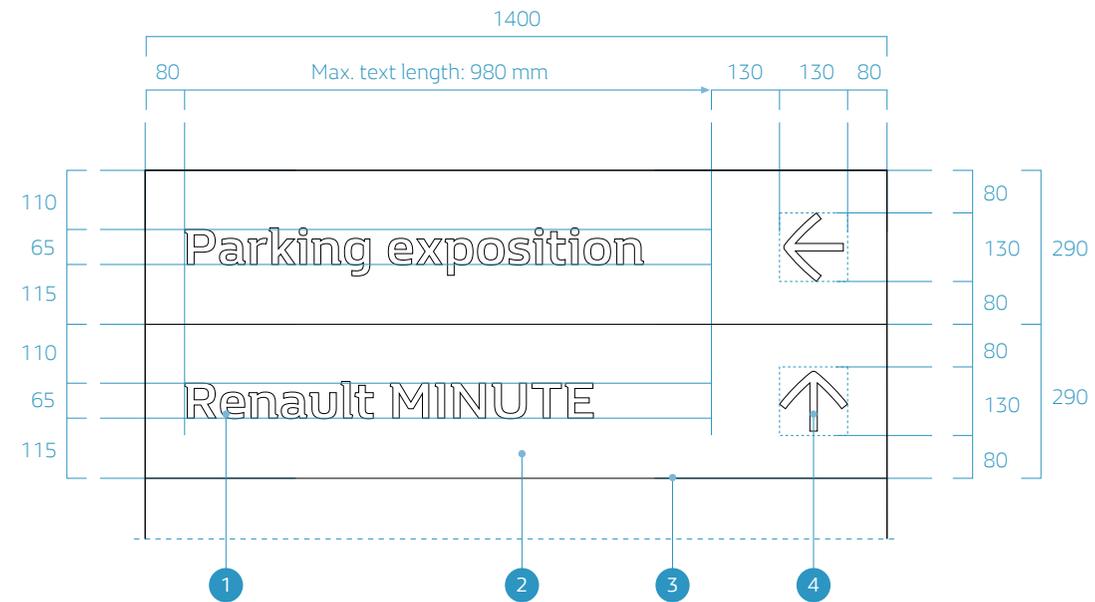
Choice of wordings

For reasons of clarity, it is essential to choose a limited number of messages useful to customers for navigating the site:

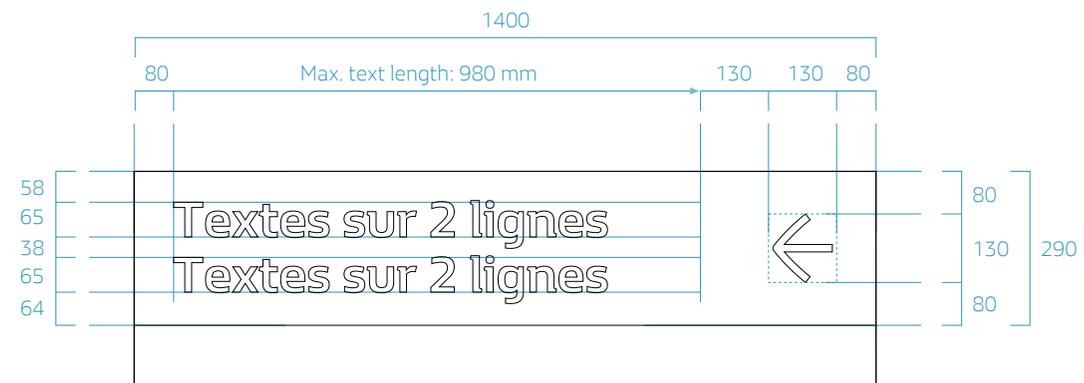
- Reception
- Workshop reception,
- Showroom parking,
- Workshop parking,
- Renault MINUTE,
- Renault PRO+,
- Exit.

Key

- 1 Dark grey lettering, Renault Life Bold, tracking 102 %, Left-aligned
- 2 White front panel
- 3 Adhesive contour, dark grey, thk. 4 mm
- 4 Dark grey arrow



Generic outline on single line



Special case with text over two lines

Installation on flush or recessed block

Principle

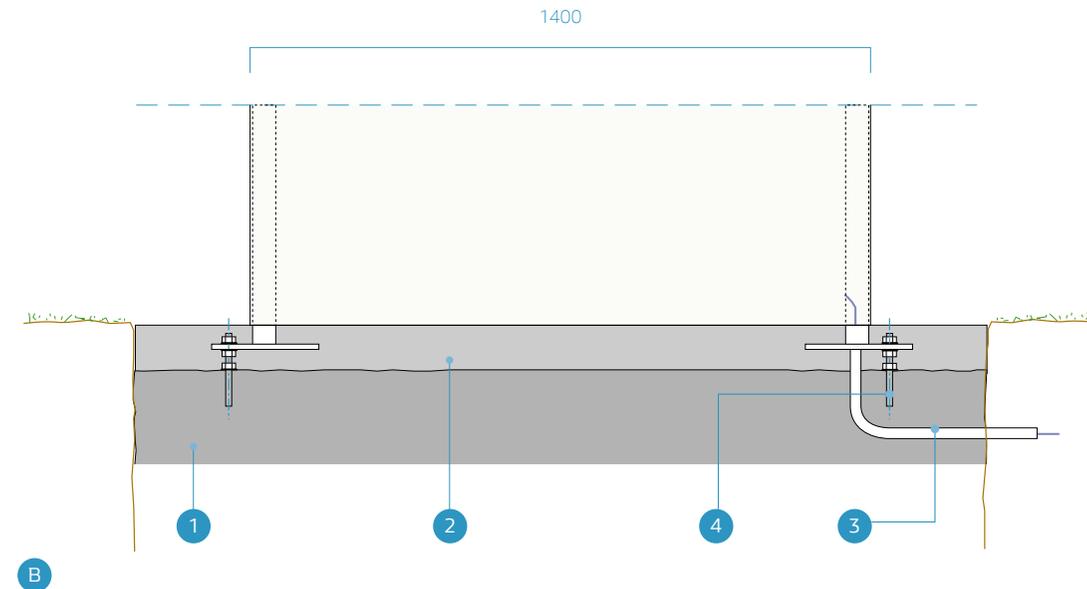
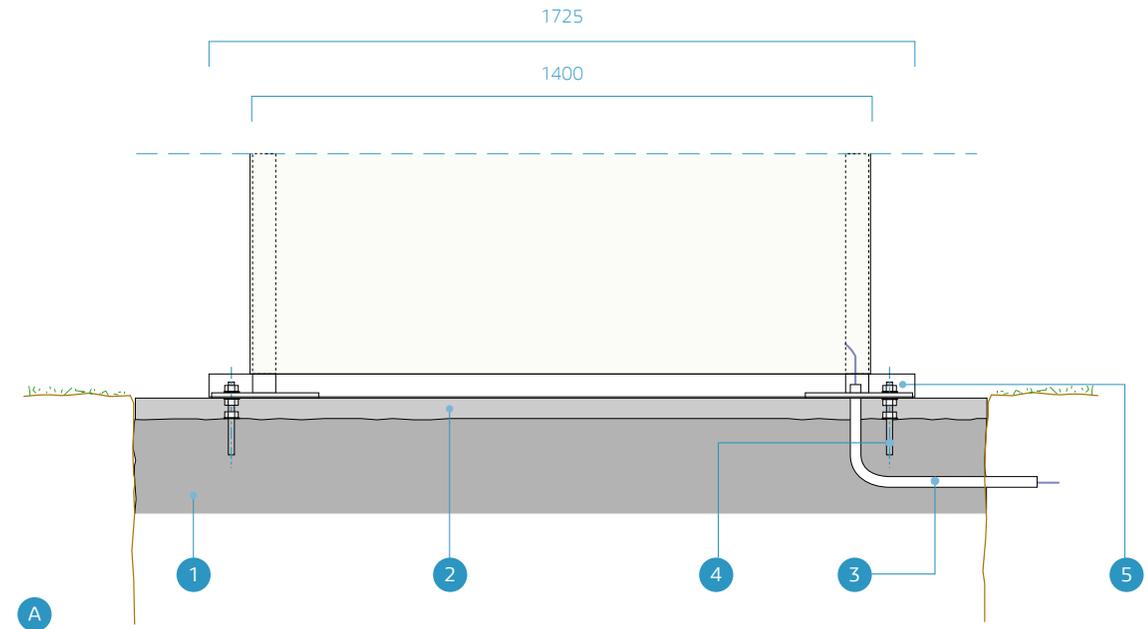
The recommended installation is on concrete block flush with ground surface to facilitate maintenance operations in case of damage to the directional sign.

On a case by case basis, after assessment of the state and compliance of the existing block (reusability of the previous generation), it may be possible to implement the directional sign on the concrete block using a chemical anchoring process after cutting off existing anchors.

In this case, an attachment plate concealer is used to finish the anchor points on the concrete block.

Key

- A** Installation on flush block
- B** Installation on recessed block
- 1** Concrete block
- 2** Concrete screed
- 3** Power supply in
- 4** Anchoring system
- 5** Attachment plate concealer



Anchoring system

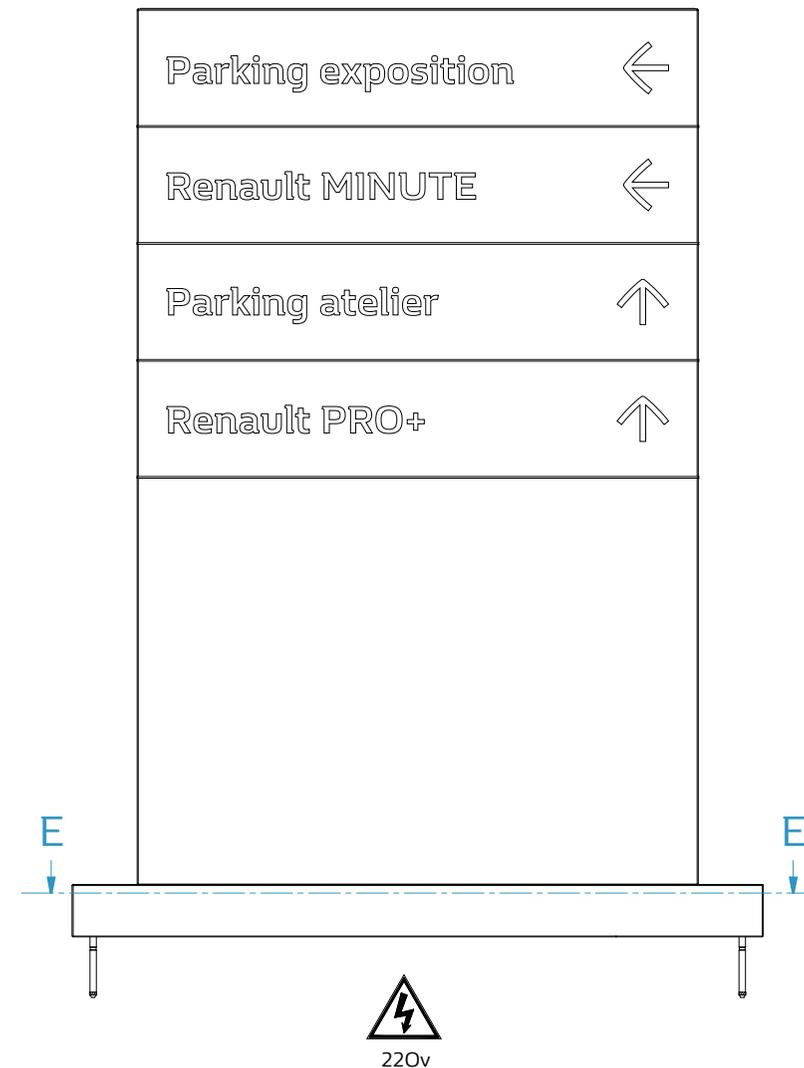
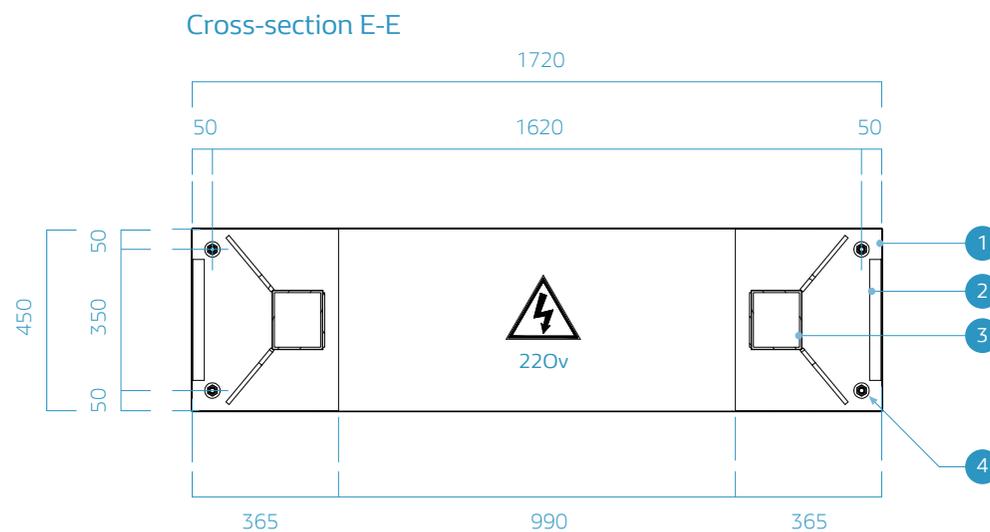
Ground attachment system

The sign is anchored to the ground via two plates fitted with 4 x M16 anchors.

The assembly is covered with a attachment plate concealer allowing access to fasteners in order to facilitate replacement in case of damage.

Key

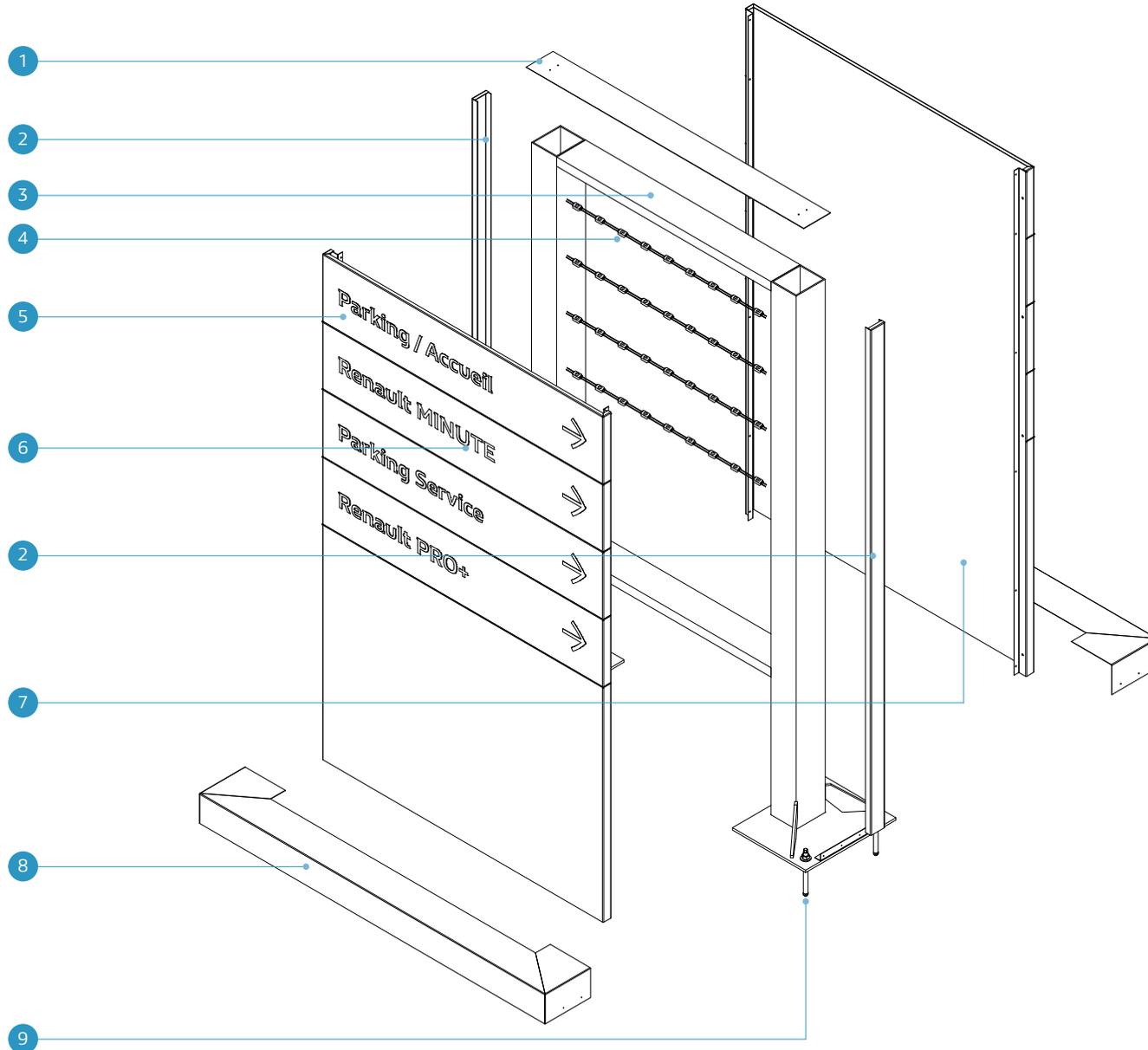
- 1 Aluminium plate
- 2 Unfinished aluminium bracket for attachment of concealer
- 3 Central aluminium structure
- 4 Steel anchor M16



Schematic exploded view

Key

- 1 Aluminium cover, same colour as front and rear
- 2 Pre-lacquered aluminium sheet edge, same colour as front and rear
- 3 Unfinished aluminium sheet structure
- 4 Chain LED and converter
- 5 Pre-lacquered aluminium sheet front panel with raised edges comprising internal cutaways to avoid light leakage
- 6 Front panel trim (Black & White PMMA or adhesive)
- 7 Rear panel identical to front panel with trim (Black & White PMMA or adhesive)
- 8 Attachment plate concealer in RAL 7021 grey pre-lacquered aluminium sheeting, comprising 2 half-cowlings secured laterally with stainless steel fixing elements
- 9 Unfinished aluminium plate with gusset plates welded to upright structure



Lighting

Description

Illumination of the front and rear by chain LEDs mounted perpendicular to the panels.

The converter is secured to the structure so as to be easily accessible and protected from possible water ingress.

Performances

Chain LED with minimum IP65 protection.

Temperature: 6,500° K Cool White.

Mean luminance: 250 cd/m² for white sections and 25 cd/m² for blue sections.

The warranty for all LED lighting systems and parts is 5 years, subject to compliance with conditions of use and maintenance.

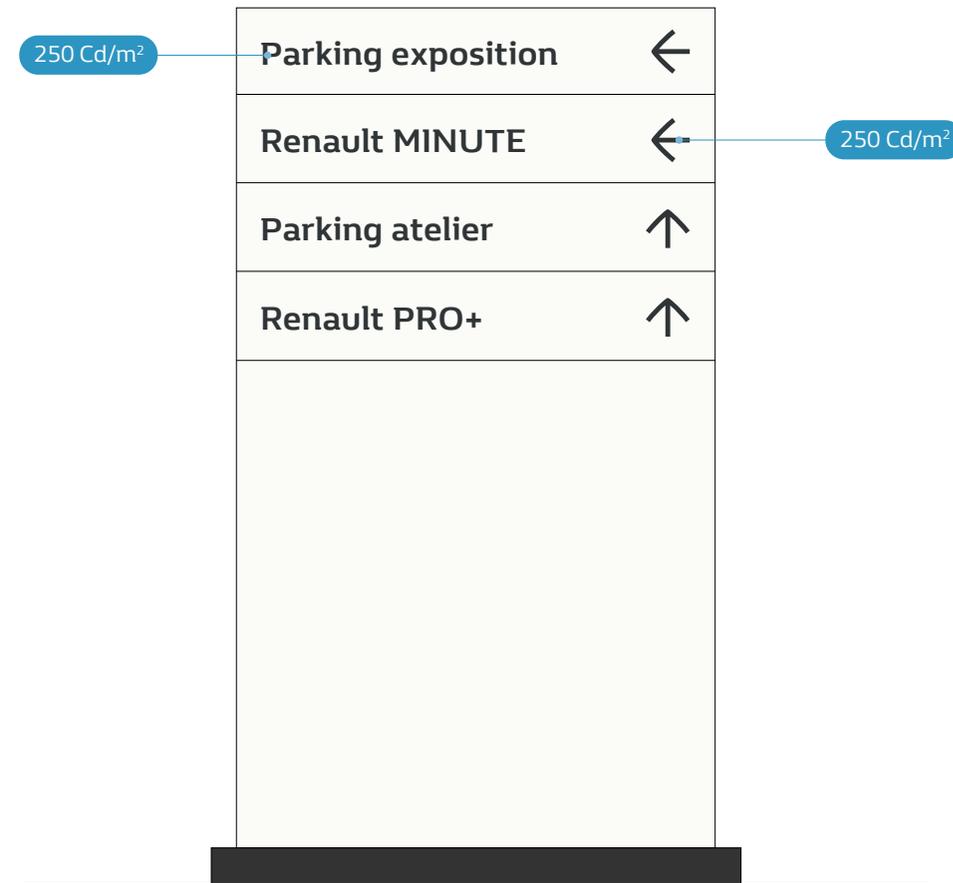
Light output reduced by 50% after 50,000 hours operation.

Minimum guaranteed lifetime: 50,000 hours

Approximate power: 30 watts.

Supply: 220 volts

12 volt converter with regulated voltage, IP 68 protection.



Entrance-exit signs

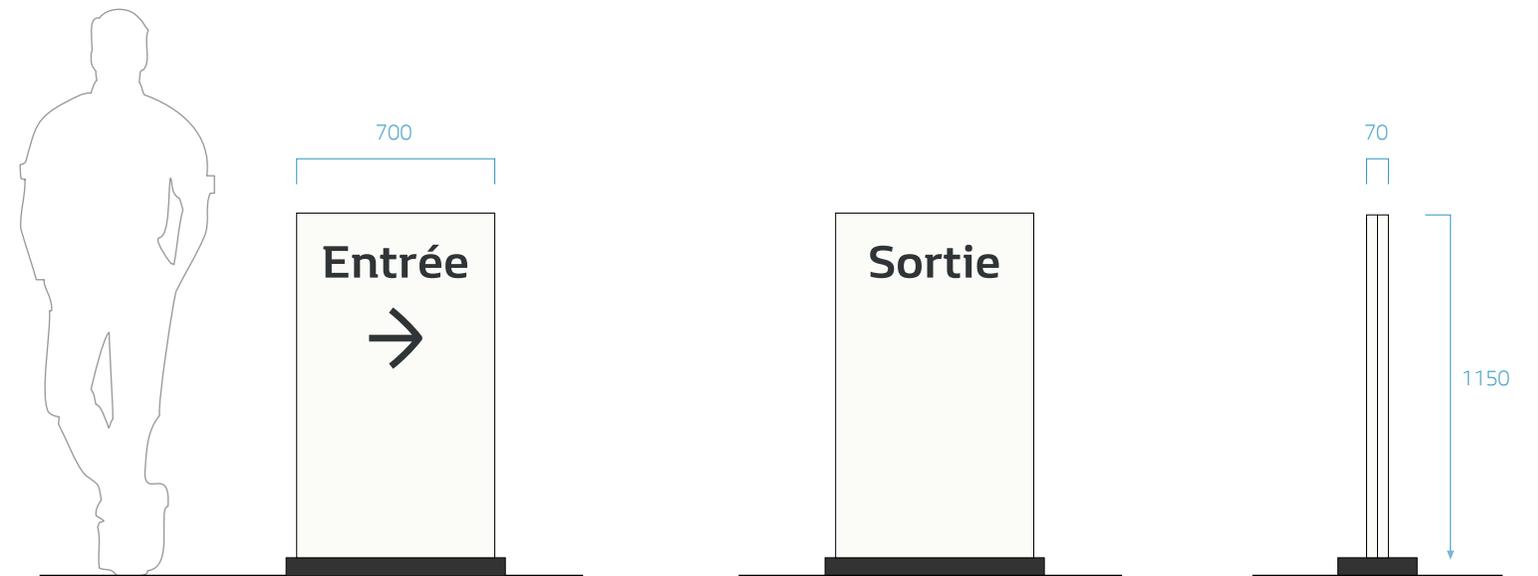
These are complementary to the directional sign

The "Entrance" sign welcomes the customer onto the site.

The "Exit" sign concludes the outbound signposting.

It is positioned perpendicular to the traffic when the entrance and exit are distinct.

These items are non-illuminated.



Description of entrance signs

Description

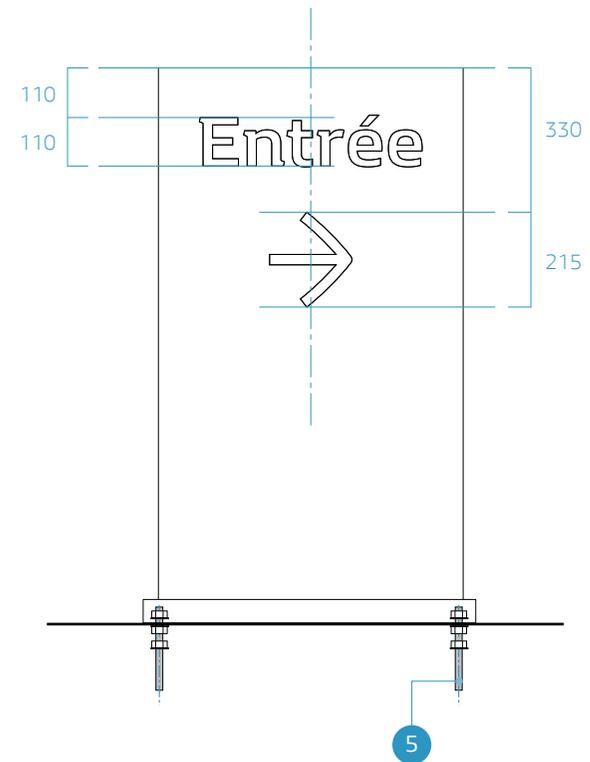
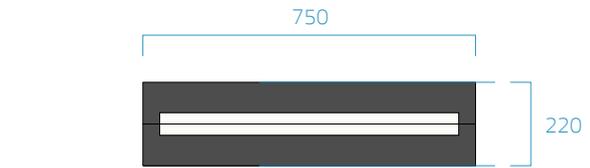
The entrance signs are made up of two aluminium half-panels with raised edges and adhesive markings, mounted on an aluminium frame.

The finishing is completed by an attachment plate concealer.

The front side and the reverse side are identical.

Key

- 1 Panel in pre-lacquered RAL 9010 white aluminium sheeting with 40% gloss satin finish
- 2 Matt black adhesive markings
- 3 Attachment plate concealer in pre-lacquered RAL 7021 dark grey aluminium sheeting with 40% gloss satin finish
- 4 Edge-to-edge joint
- 5 Anchor or chemical anchor bolts



Anchoring of entrance signs

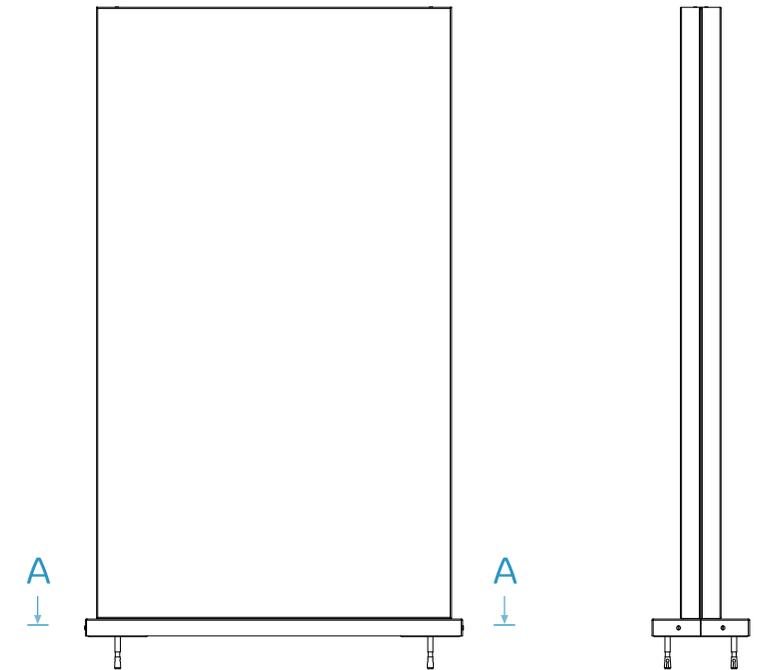
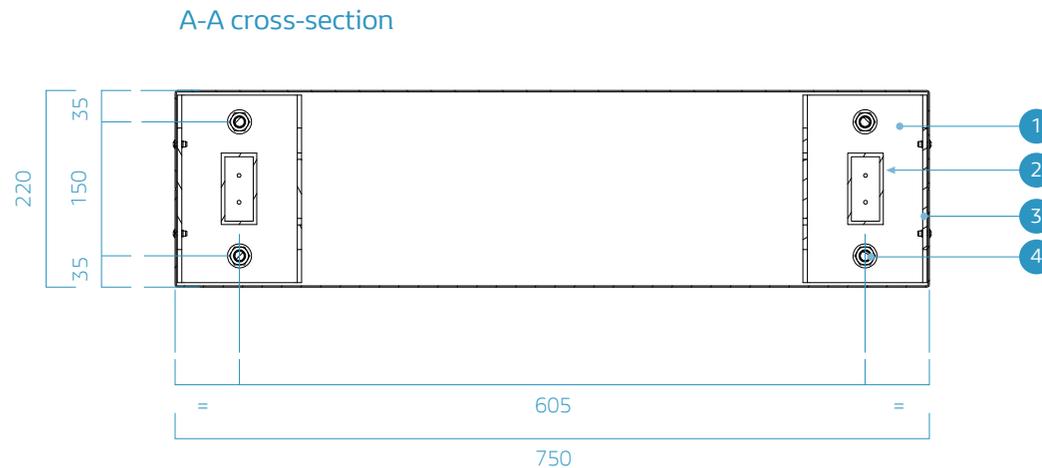
Ground attachment system

The sign is anchored to the ground via two plates fitted with two M12 anchors.

The assembly is covered with a attachment plate concealer allowing access to fastenings in order to facilitate replacement in case of damage.

Key

- 1 Aluminium plate
- 2 Central aluminium structure
- 3 Aluminium attachment plate concealer
- 4 Steel anchor M12



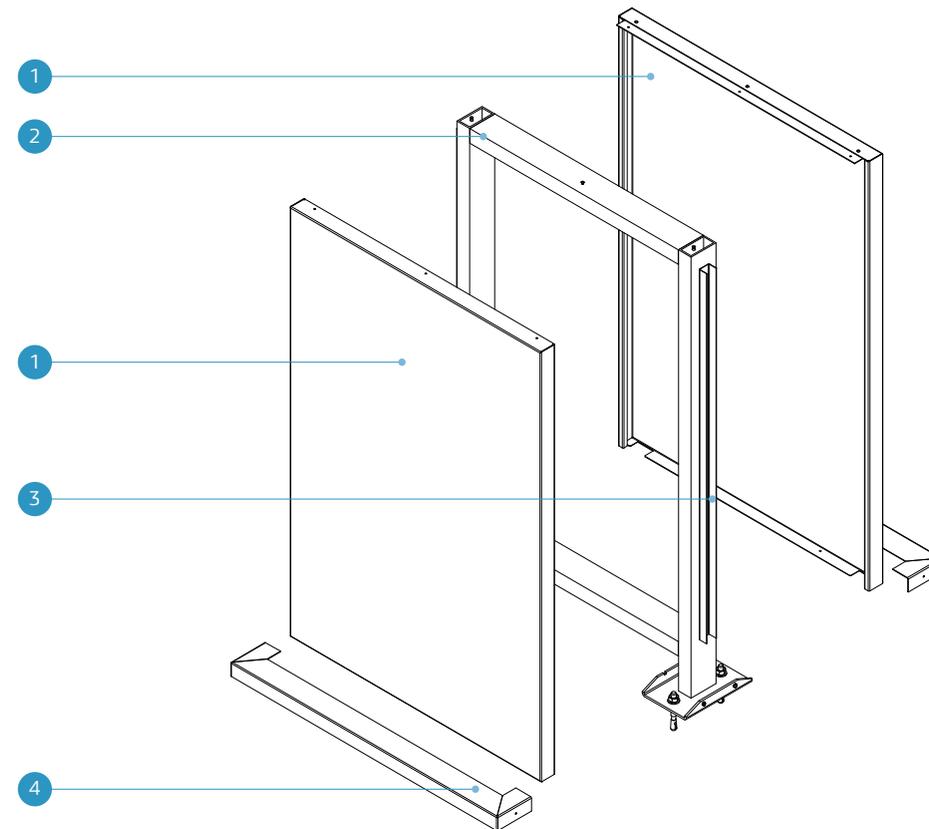
Exploded view of entrance signs

Principle

The drawing opposite presents the method for manufacturing entrance signs.

Key

- 1 Panels in RAL 9010 white aluminium sheeting with 40% gloss satin finish and dark grey adhesive trim
- 2 Natural finish aluminium frame
- 3 Natural finish aluminium profiles
- 4 Attachment plate concealers in RAL 7021 dark grey aluminium sheeting with 40% gloss satin finish



Parking signs

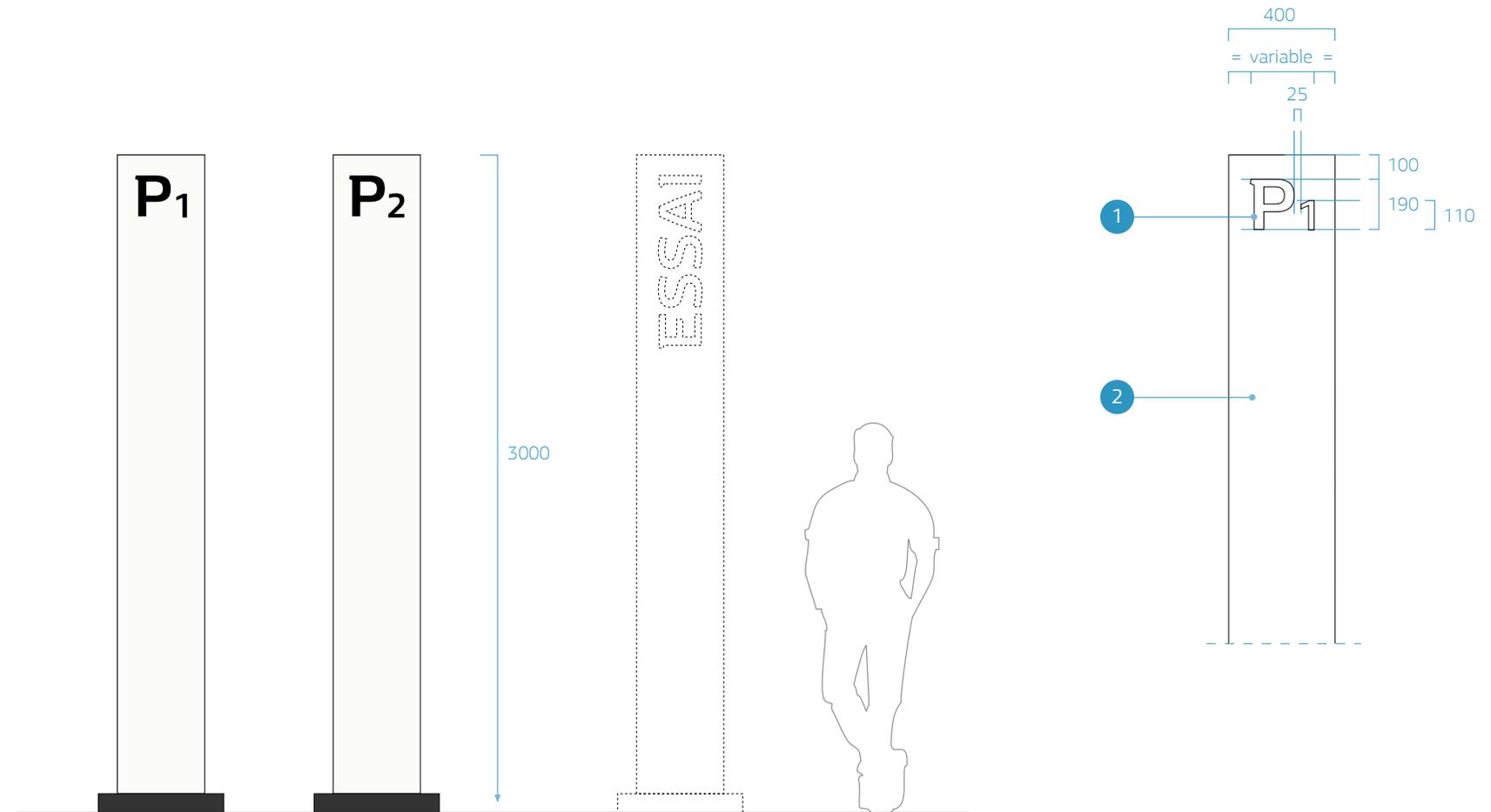
A component derived from the Test drive area mast

The parking sign bears the indication "P1" or "P2" (in some cases "P3", etc.) at the top, used to distinguish the customer parking area for the showroom from the area for the workshop.

The parking sign has a white background and is 3 m in height.

Key

- 1 Panel in pre-lacquered RAL 9010 satin white aluminium sheeting
- 2 Matt black adhesive markings, Renault Life typeface, bottom-aligned



Description of parking signs

Description

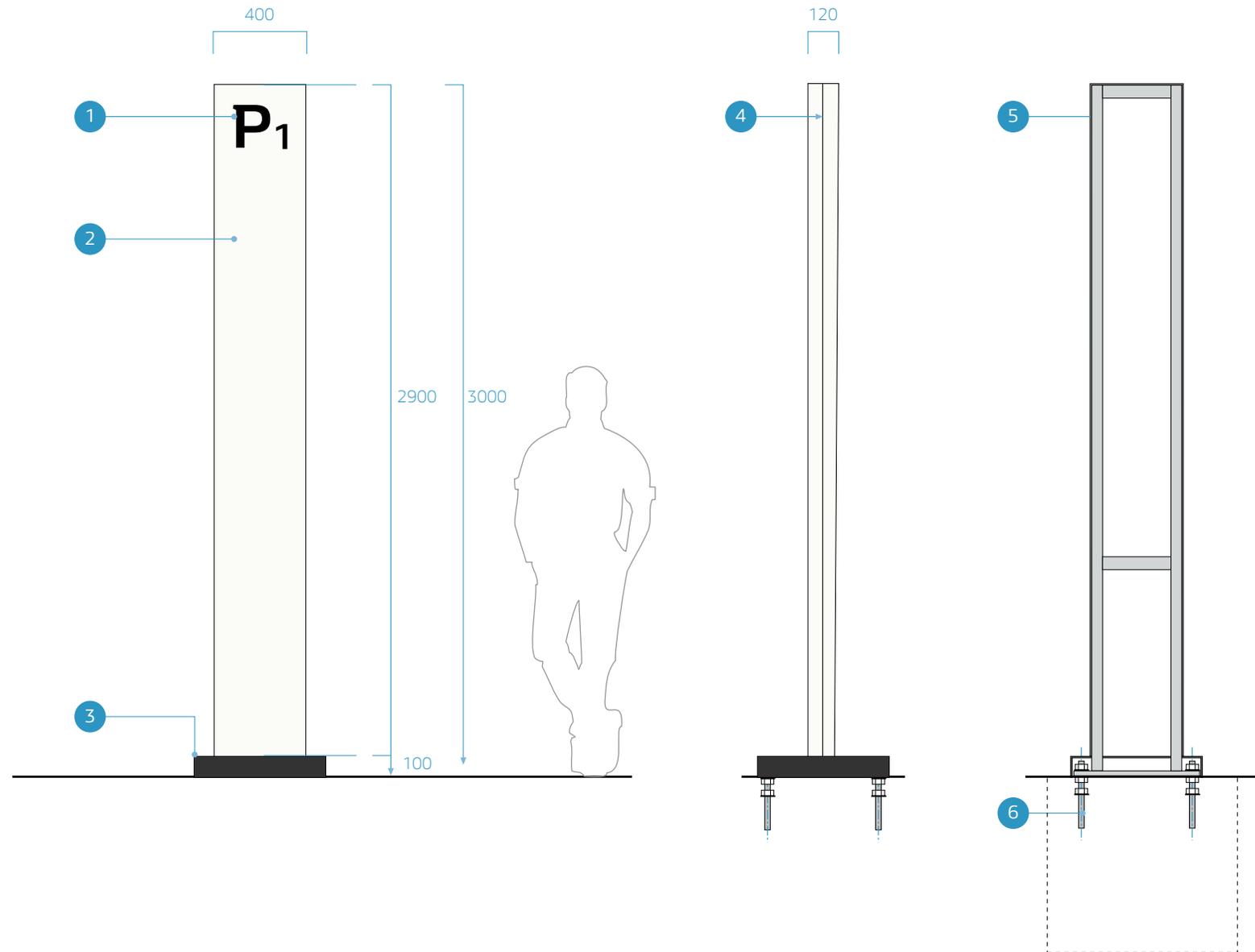
The parking signs are made up of two aluminium half-panels with raised edges and adhesive markings, mounted on an aluminium frame.

The finishing is completed by an attachment plate concealer.

The front side and the reverse side are identical.

Key

- ① Panel in pre-lacquered RAL 9010 white aluminium sheeting with 40% gloss satin finish
- ② Matt black adhesive markings
- ③ Attachment plate concealer in pre-lacquered RAL 7021 dark grey aluminium sheeting with 40% gloss satin finish
- ④ Edge-to-edge joint
- ⑤ Natural aluminium frame
- ⑥ Anchor or chemical anchor bolts



Anchoring of parking signs

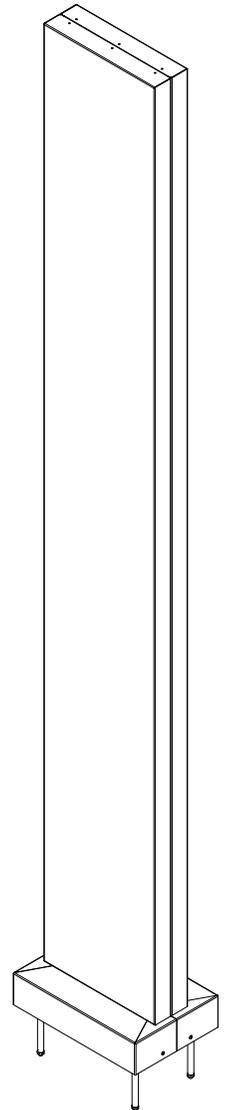
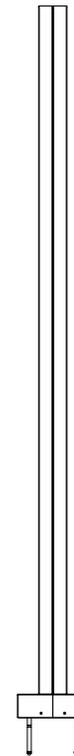
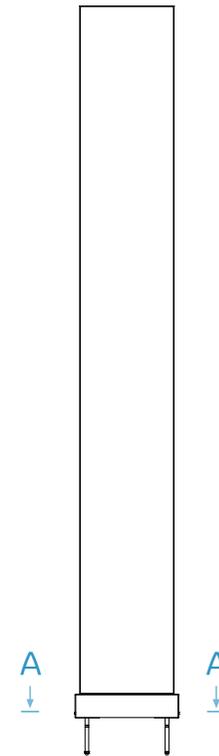
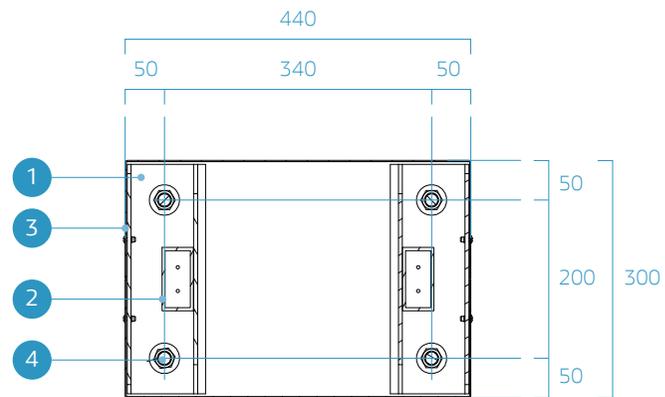
Ground attachment system

The sign is anchored to the ground via two plates fitted with two M16 anchors.

The assembly is covered with a attachment plate concealer allowing access to fastenings in order to facilitate replacement in case of damage.

Key

- 1 Aluminium plate
- 2 Central aluminium structure
- 3 Aluminium attachment plate concealer
- 4 Steel anchor M16



Exploded view of parking signs

Principle

The drawing opposite presents the method for manufacturing parking signs.

Key

- 1 Panels in RAL 9010 white aluminium sheeting with 40% gloss satin finish and dark grey
- 2 Natural finish aluminium frame
- 3 Natural finish aluminium profiles
- 4 Attachment plate concealers in RAL 7021 dark grey aluminium sheeting with 40% gloss satin finish

