Service Stations

Accessible to all

REPSOL

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Fundación ONCE

Service Stations Accessible to All,
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Table of Contents

Presentation

Presentation

Dear Ladies & Gentleman,

I would like to begin this presentation letter for the Accessibility Guidelines for Repsol Service Stations by saying that this is a real privilege and honour for my team, everyone, and myself.

Our company has a strong commitment to diversity and equal opportunities as a way of showcasing talent. The implementation of this policy represents an important competitive advantage and a complete aligning with our corporate values and culture (integrity, responsibility, transparency, flexibility and innovation).

Among the major moves, each day, every day, we see financial strength, technology and operational excellence. However, what really makes us unique is our people and we could not speak of talent and people without mentioning diversity. Diversity stimulates innovation and creativity. It allows taking better decisions with a wider approach.

Up to 2014, we have managed to integrate nearly 600 people with different faculties thereby complying with an index contained in the General Act on Persons with Disabilities. This represents 3% of the total workforce. These facts also contribute towards creating a more humane and supportive work climate, with a very positive impact in shareholders or stakeholders.

At the same time, we have implemented and continue to implement our Accessible Service Station Plan with the objective of improving mobility in points of sale. This is a practice that is spreading out to other businesses.

Finally, I would like to thank all the people, foundations and associations, and employees in general who are helping us in this valuable, yet exceptional, project that will make us good professionals and above all, better people.

António Calçada
Executive Marketing Director at Repsol

Internationalising an experience in accessibility

We initially edited this guide to promote accessibility in the construction or refurbishment of service stations seven years ago. Now, we are re-editing it to include the technical criteria contained in the **ISO 21542:2011. Building construction. Accessibility and usability of the built environment** so that it can be used by service station managers in other countries with this same objective. This time, to ensure dissemination we are publishing it in Spanish and English.

It was very clear to us at Fundación ONCE that promoting universal accessibility and design principles for everyone, in addition to them being one of our objectives, are essential conditions to reach social inclusion and effective equal opportunities.

In this case, we propose and promote that service stations be accessible to everyone, including people with disabilities that drive or travel in a vehicle that arrives to fill up or so that their occupants may rest, freshen up or have a bite to eat. This naturally includes ensuring that physically challenged people can work there too.

Unfortunately, urban and interurban transport do not have the sufficient degree of accessibility, which forces many physically challenged people to use their own vehicle or that of a family member as their only mode of transport. These are often their only way of accessing a job, school or university, the cinema, their holiday destination... This increases the reasons why service stations must be accessible. It also indicates that those that achieve an appropriate degree of accessibility will have advantages compared to the competition.

From the Fundación ONCE, we trust this publication will contribute towards strengthening our ties with REPSOL even more, at the same time as we advance jointly towards an inclusive and respectful society for everyone, in general, and particularly, with people suffering from a disability.

José Luis Martínez Donoso
General Manager of Fundación ONCE

Accessible Service Stations

1. Accessibility and design

Universal design principles

The universal design principles or the design for everyone are essential to ensure environments, products and services can be used by any person -with their differential features, like age, skill, capacities, culture, etc.- and in the countless circumstances and environmental conditions that may arise.

These principles can be summarised as follows:

1. **Equitable use of facilities**
   The design must allow an easy, adequate and safe use for everyone, regardless of their ability, culture or skill.
2. **Flexibility**
   The design must adjust to a wide variety of individual usage preferences, skills and abilities.
3. **Simplicity and intuitive understanding**
   The product or service must be designed regardless of the experience, knowledge, abilities or concentration of those whom shall use it.
4. **Ease of information perception**
   The information the product or service has or transmits must be readily available to everyone, regardless of their abilities and the environmental conditions of their surroundings.
5. **Tolerance to error**
   The design of the product or service must minimise the effect that incidental actions or those caused by mistakes could have on usage.
6. **Adaptation of the dimensions**
   Any product or service must be designed with the appropriate dimensions to enable its proper use –mobility around it, localisation, scope, handling, and communication.
7. **Effort effectiveness**
   The design must lead to products and services that may be used by anyone and everyone effectively and with the minimum effort possible.

2. Service Stations

Economic and social importance

A village, town or road that does not have a service station is unthinkable nowadays. The usual means of transport is the car. The cities' urban landscape is populated with buses, big agricultural machines replace the farmers' arms and a large part of goods transport, from food to industrial products, is done through vans and lorries. All these vehicles use fuel and depend, to a lesser or larger extent, on service stations.

This small introduction gives an idea about the social and economic importance of the traditional function of service stations: that of supplying fuel. It emphasizes the frequent and natural relation with the services provided within.

Currently, Repsol has 4,549 service stations in Spain, Italy, Peru and Portugal.

Accessible Entrance.

Service Stations.

Variety of services

When we think about a service station, we think about fuel supply. Fuel continues to be the main pillar of the business, but in the past ten years, the weighting of the shops, car washes, restaurants, supermarkets or leisure areas, or what is known as “non-oil business”, has doubled and now represents 37% of the margin generated by service stations.

Repsol service stations receive more than one million visitors on a daily basis and this traffic volume has made convenience stores a clear business within the overall business.

These installations offer a carefully selected range of products, like newspapers, vehicle equipment, tyre inflation and pressure equipment, car washing facilities, parking, rest areas or butane sale. Service stations have also traditionally ensured having restrooms at the disposal of the visitors, and they also offer all sorts of products, such as fresh bread, bakery, food and snacks. The shops and restoration services in service stations have indeed acquired considerable importance.


Bar / Coffee shop


Admission of automatic Payment


Car wash tunnel / Gantry car wash


Adapted restrooms


Air


Shop

3. General design recommendations

The design process of a service station is a complex process, which combines the requirements of the different services with those of safety, functionality and economy, for instance. In this process we must also mention the aesthetic criteria of the project's draughtsmen and those of the developing companies, ensuring they comply with the applicable legal requirements and those required by the local authorities.

Example of the design of a roof over one of the service stations.

For functionality and safety purposes, it is important that service stations are readily accessible and recognisable at a distance. A priori and considering the possible accesses and always from the viewpoint of its interrelation with people, including physically challenged people, we find two types of stations: those located on the road and those located within a town. The design of the latter ones must be cared for to the maximum to ensure the safety of passers-by.

Wide walkways.

Access to the service station.

The application of the universal design will allow higher-quality aesthetic effects with the same spectacular nature as the conventional ones, with the added value that customers will gain in comfort and quality.

3.a. Access to the service stations

In city areas, the most important element regarding the access is the right-of-way, that is, the section of pavement that permits the crossing of vehicles from the road towards the service station.

All projections or changes in level shall be avoided when designing the area. The longitudinal and transversal slopes of the pavements and pedestrian walkways shall also be respected. The edge of the pavement will be lowered to ensure it does not interfere with pedestrian circulation, and a smooth and slip-resistant paving shall be used. The width of the right-of-way shall be adjusted to ensure the convenience of the vehicle/pedestrian on the same platform as best as possible and thus minimising the risks. The installation of a warning system to alert of the passing of vehicles, like those used in many countries for garages and that emit a double acoustic and visual signal, is recommended for service stations.

It is convenient to prevent vehicles from crossing the pavement at an angle and that different spaces are used for incoming and outgoing vehicles.

Access to the Service Station.

3.b. Global layout and distribution of the services

The layout of the service stations must be designed bearing in mind the different services to be offered and their uses, customer movements and the convenience of the spaces, as pedestrians or as drivers of their vehicles. This layout must consider that mobility, apprehension, positioning and communication abilities of the customers may be diverse.

The distribution of the different services involving machinery and furniture must be such that facilitates the access and use of each of them, since they are elements linked to a logical sequence that clients will follow or as services that can be accessed independently. In addition to the layout and the distribution, the following elements must be considered from the onset:

Safety: It is a priority to ensure there are no obstacles or dangers, both in pedestrian areas and those corresponding to the different services. In addition to the usual mobility risks -falls due to problems with the pavement, collisions with badly placed elements or those that are not signalled properly, etc.- and of those derived from the contact with vehicles, in service stations, we know the risks arising from the presence and use of fuels. In this respect, they must have the sufficient and adequate prevention measures, even though it would be convenient to review these from the different functional abilities of the possible customers or employees.

Signage: Designed to find where each service is provided and obtaining the information that they offer. Later, we shall include criteria to design posters, panels, etc. that perform this support function.

Lighting: An adequate lighting shall be installed in the petrol pump areas, the service areas (water, air, car wash, etc.) and on the paths towards them. The light fittings shall be fully waterproof in the gantry car wash and the pressure wash boxes.

Preventative maintenance: Special attention must be paid to preventative maintenance of the facilities and equipment, with the purpose of ensuring safety and mobility of visitors and employees alike.

3.c. Parking

There must be designated accessible parking spaces for vehicles used by people with disabilities within the parking area.

Number of designated accessible parking spaces:

– Up to 10 parking spaces: 1 designated accessible parking space;
– Up to 50 parking spaces: 2 designated accessible parking spaces;
– Up to 100 parking spaces: 4 designated accessible parking spaces;

Signage:

It is important that the location of the designated parking spaces are clearly signposted at the entrance used by motor vehicles with information indicating the direction to the designated parking spaces, using the combined International Accessibility Symbol with directional arrows.

These designated parking spaces will be clearly signposted, horizontal and vertically, with the appropriate signs and the International Accessibility Symbol pursuant to the design of the ISO 7001 standard. This symbol must be readily visible, easily found and must not be an obstacle.

Designated parking spaces for disabled people.

Designated accessible parking spaces will be located as close as possible to the accesses to the principal building and the accessible pedestrian walkway. The route from the accessible parking space to the principal building must be less than 50 m.

An accessible parking space is that which meets the following requirements:

– Communicated through an accessible route to the service infrastructures. If there is a pavement, a kerb ramp will be created to overcome the gradient. The minimum width of the kerb ramp must be 1.00 m. The inclination of the kerb ramp shall comply with what is contained in the section on slopes.

– The dimensions of the accessible vehicles vary from one country to another. For this reason, the size of the parking space shall be that which is generally required by the applicable regulations in each case. Additionally to these dimensions, we must consider the following:

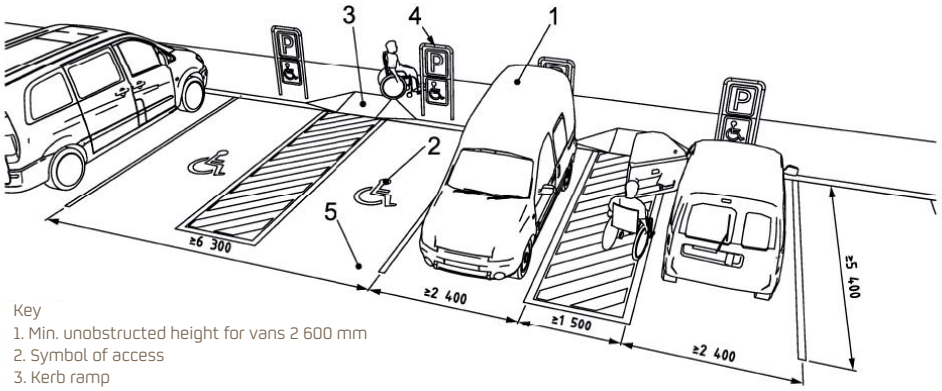
Side-by-side parking

For accessible parking spaces for cars, we shall consider a minimum width of 3.90 m and a minimum length of 5.40 m. This minimum width includes the transfer area beside the car, with a minimum width of 1.50 m.

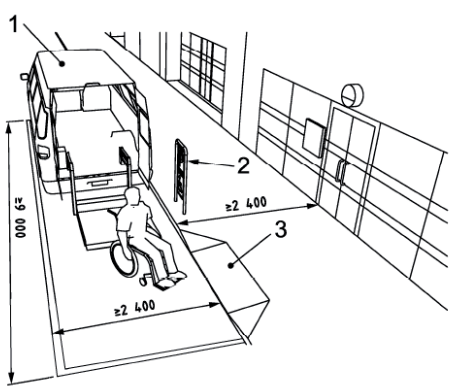
Two accessible parking spaces with one shared transfer area are widely used and should have a minimum width of 6.30 m

The minimum width of the accessible parking space for vans shall meet the same requirements as for car parking spaces. Transfer areas beside the vehicles can be shared by two spaces and there should be a clear height of 2.60 m.

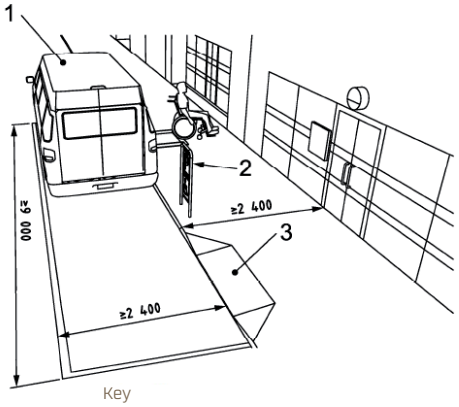
Medidas en milímetros



Key
1. Min. unobstructed height for vans 2 600 mm
2. Symbol of access
3. Kerb ramp
4. Signage including symbol of access
5. Firm ground



Sketch taken from the ISO 21542:2011.
Construction. Accessibility to the built environment.



Key
1 Min. unobstructed height 2 600
2 Signage including symbol of access
3 Kerb ramp
4 Symbol of access

Parallel parking

For multi-purpose vehicles with cranes or platforms, accessible parking spaces of 2.40 m wide by 9.00 m in length along a pavement can be considered, provided the pavement is at least 2.40 m wide.

Usually, adapted vehicles in Spain used for people travelling in wheelchairs are not as long as those required by the ISO standards. We can, therefore, consider what is indicated in the Technical Building Code to be sufficient for this specification. The rear transfer space shall, therefore, be ≥ 3.00 metres long, which shall be added to the dimensions established by the competent authority.

Lastly, in this type of parking, when the driver has to get in or out of the vehicle on the pavement side, they may find difficulties due to the higher level of the pavement compared to the road. This may involve an increase of effort and make movements more difficult. There are different solutions to this problem and among them the most frequent one is to lower the height of a section of the pavement to the level of the parking and to place kerb ramps on the end, to access to the level of the pavement. Another solution consists in elevating the height of the designated accessible parking space up to the level of the pavement. In these cases, the pedestrian area must be clearly differentiated from the parking area to protect pedestrians.

Designated accessible car parking should not be protected from undue use with cones, chains or any other element that could become an obstacle for drivers with disability that would like to use them. When strictly necessary, they will be allowed provided they do not obstruct the walkway. A separation of 1.20 m between them is advisable. Even pedestrians with visual impairment must be able to detect them easily. They must visually contrast with the pavement and be higher than 1.00 m.

Designated accessible car parking.

Parking	Most frequent parameters
Location	Close to the access and connected by an accessible walkway no more than 50 m long.
Minimum dimensions for side-by-side parking Car/Van	Minimum width of 3.90 m and minimum length of 5.40 m. This width includes the transfer area beside the vehicle. Minimum width of 1.50 m. Two accessible parking spaces with a shared transfer area should have a minimum width of 6.30 m. Additionally, a minimum clear height of 2.60 m must be left for vans.
Minimum dimensions for vehicles with cranes or platforms	2.40 m wide and 9.00 m in length along a pavement, which should be at least 2.40 m wide.
Signage	An International Accessibility Symbol on the floor and a vertical signpost, designed according to the ISO 7001 Standard. Directional arrows combined with the International Accessibility Symbol shall be used. Transfer area signalled with a zebra print on the floor.

3.d. Circulation: vehicles and pedestrians

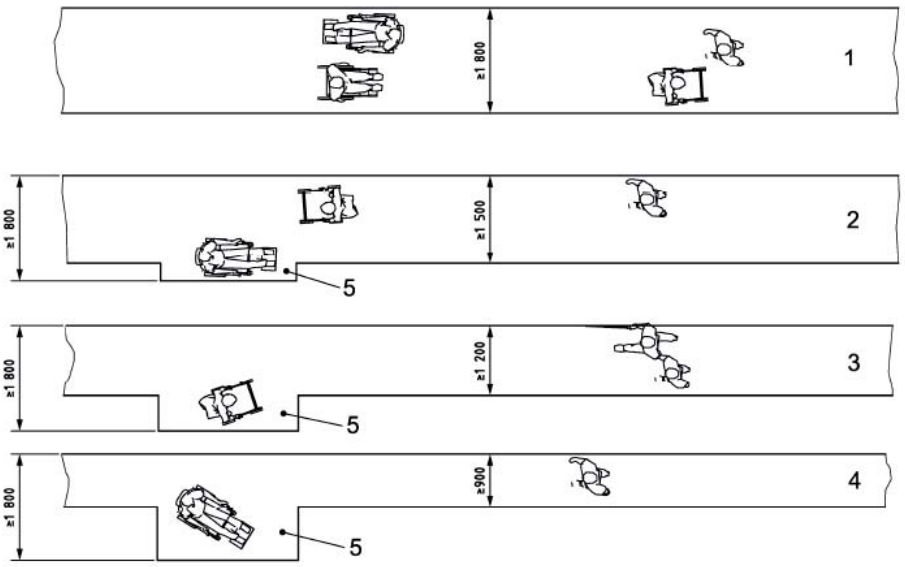
Principal pedestrian routes are those that connect the parking area with the supplementary services (the shop and the restoration area) and those that go from the petrol pumps to the till, for self-service areas. They must all be accessible. They must be clearly differentiated and separated from road traffic. The flooring of these routes must be continuous, firm, and stable and of a non-slip material – whether dry or wet. Moreover, these routes must be devoid of grids and drainage elements.

The cross fall gradient across an access route should not exceed 1:50 (2%), except when associated with a dropped kerb. If the slope gradient exceeds 1:20 (5%), it shall be designed and built as a ramp. Obstacles, such as objects and signs mounted on walls, bollards, pillars or free-standing supports along the walking path should be avoided.

Tactile Walking Surface Indicators according to the ISO 21542 Standard (Annex A) and the use of a good visual contrast compared to the dominant colour of the road can be used to highlight pedestrian walkways. The recommended width of pedestrian walkways is 40 cm. Moreover, the unobstructed width of the path shall be:

a) No less than 1.80 m for constant two-way traffic;
b) No less than 1.50 m for frequent two-way traffic, provided the passing places are included at intervals of maximum 25 m, of at least 1.80 m x 2.00 m.
c) No less than 1.20 m for infrequent two-way traffic; a passing and turning space of at least 1.80 m x 2.00 m should be provided for every 25 m.
d) No less than 90 cm when it is unlikely that people will have to pass one another person; there should be a passing and turning space of at least 1.80 m x 2.00 m for every 25 m.

Medidas en milimetros



Key
1. Constant two-way traffic
2. Frequent two-way traffic
3. Infrequent two-way traffic
4. No-pass traffic
5. Passing and turning space every 25 m (only acceptable under exceptional circumstances for wheelchair users)

Sketch taken from the ISO 21542:2011.
Construction. Accessibility to the built environment.

Routes	Most frequent parameters
Minimum passing space	0.90 m - 1.80 m depending on the traffic. A passing and turning space of at least 1.80 m x 2.00 m every 25 m.
Height of clearance	2.10 cm
Turning clearance	1.50 m at the entrance to the principal building or sufficient to turn the wheelchair.
Maximum longitudinal slope	5%
Maximum cross fall gradient	2%
Gradients in general	No stairs or isolated single steps. If there are gradients, these must be supplemented by a ramp or a lifting platform.

4. Station services and design

4.a. Petrol pumps

The main purpose of service stations is to fill vehicles with fuel. Self-service systems enable the customer to speed up the time spent on filling up the tank and doing any other additional service -cleaning windows, filling the water tank, measuring the pressure of the tyres, etc.

Filling the fuel tank may pose difficulties for drivers with disabilities, particularly, when reaching, holding and handling the petrol hoses. The pumps that best adapt to the dimensions and functional abilities of the average client have been designed based on ergonomic studies or human factors - different features of people in terms of dimensions, strength, handling ability, etc.

Petrol pumps.

A good option is to incorporate a wireless system that enables the client with impaired mobility to push a button and request the assistance of personnel to assist them in filling up or using the car wash.

Petrol pumps with a contactless button.

Traffic island and petrol pump design criteria

The traffic islands housing the petrol pumps shall be distributed in an orderly manner. The different components of each island shall be marked and signposted to enable them being readily located and serve as an orientation to visitors.

There will be waste paper bins and, a gloves and paper dispenser placed at a height that enables being reached and used by anyone, including people using wheelchairs. The clear area in front of the machine shall be at least 150 cm x 150 cm.

People of short statures or in wheelchairs must be able to reach the hoses. Therefore, these should be at a height ranging from 80 to 90 cm and at a minimum distance of 60 cm from any corner, but preferably at 70 cm, and 30 cm in depth.

Adapted petrol pumps.

The operation of the pumps should be automatic. To enable reading the self-service instructions, they should be placed on the lower border, at 120 cm from the floor at the most.

The numbers on the display, indicating consumption and price, shall be placed between 120 cm and 140 m, measured from the floor of the station.

This height could be increased depending on the font and size, as well as the visual contrast with the background in which they are inscribed. Moreover, they should be in line with the criteria used for accessible signage.

In authorised pumps that have a voice module, the volume of the message should be high enough to be heard by people with impaired hearing. The acoustic information will always correspond to the information that is being provided visually.

The area of the pumps shall be properly illuminated with more intensity than the rest of the service station, 1.5 times brighter. Changes in level and signage must be illuminated with at least 100-lux lighting.

4.b. Car wash

The location and identification of the car wash cabins shall be with markings on the top, which indicate the different uses.

The pressure car wash boxes should have sufficient manoeuvre space inside to facilitate it being used by any one, regardless of their faculties.

Car wash box.

It is very important that the flooring of these boxes are very slip-resistant to permit them being used when the surface is wet and impregnated with soap and cleaning products. In these cases, they must also be waterproofing against hydrocarbons.

The different elements to be used (buttons, switches, hoses, jet lances, etc.) should be placed at a height between 80 cm and 110 cm to enable being reached by any user.

Its automatic operation, the ease to with which they can be held and their reduced weight shall be the necessary handling requirements.

The washing and aspiration facilities will be marked with information or user instructions. This information shall be in line with certain established criteria such as the font, colour contrast, placement height, etc. that make them accessible. The lighting for this signage, as well as for the rest of the washing and aspiration areas, shall be appropriate for the different uses. However, 100 lux is recommended.

Car wash tunnel and aspirator.

4.c. Other services

Water and air

The water-air supply posts will be located outside the vehicle traffic area, so that they can be used to check the pressure and to inflate and deflate tyres with no hazard whatsoever. The signage will enable them being properly located and identified.

Likewise, the air-water supply column will also contain the corresponding user instructions.

Handling elements shall be placed at an appropriate height, between 80 and 110 cm. Companies should choose those that are easiest to use when fitting the service station.

The areas shall be properly illuminated. 100 lux is recommended.

Air and water supply post.

Commercialisation of gas –motor vehicles and domestic–

Each of the services inside the service station shall bear the specific signage. For automotive gas, this must be clearly differentiated from liquid fuel.

The signalling must be illuminated with at least 100 lux.

Gas supply.

5. Supplementary services

5.a. Hygiene services

The design criteria are common for any bathroom, whether they are accessed from outside or inside the principal building of the service station –shop or restaurant–. They must also be communicated with an accessible route.

Number:

– There must be at least one unisex accessible bathroom for wheelchair users.
– The accessible bathroom for wheelchair users must always be fitted with a washbasin.

Design criteria

The minimum dimensions and distribution of the bathroom will be such that allow people in wheelchairs to approach and use each element autonomously or to ensure sufficient space when they require the assistance of another person.

Characteristics:

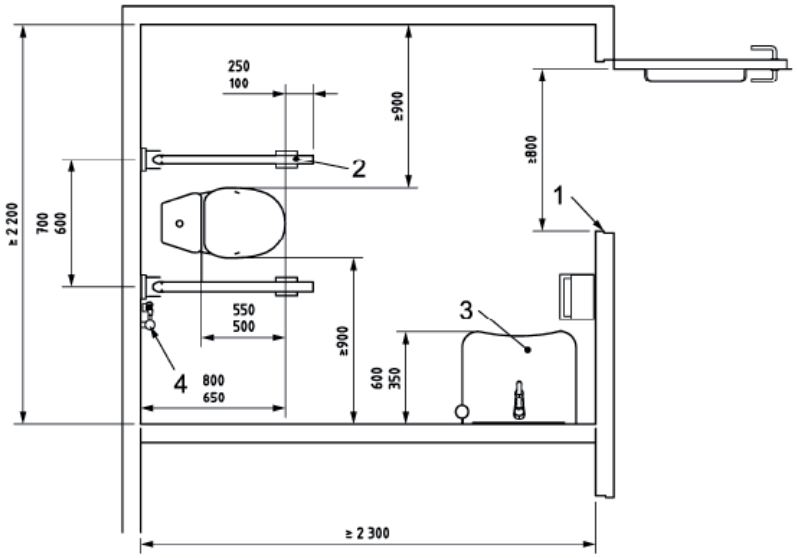
– Free clearance space for side transfer on both sides.
– Unobstructed manoeuvre space, which must not be hindered by the washbasin or the toilet.
– Horizontal grab bars on both sides of the toilet.
– Toilet roll holders on both folding grab bars.
– An independent water supply next to the toilet seat is advisable.

There must be sufficient space that enables performing a 360-degree turn by people in wheelchairs, devoid of obstacles from the floor upwards. This means that the space should enable a circumference of at least 150 cm in diameter. For comfort and safety, the door must be a folding door, opening outwards, or a sliding door so that the space it occupies does not invade the usage area of the different elements and enables being rescued if the user were to fall. The minimum width of the doorset should be be 80 cm (85 cm recommended) and the minimum clearance height should be 200 cm. Likewise, it is important that the locking mechanism can be unblocked from outside in the event of an emergency. Locks and door handles, doorbells and other devices to enter must be easy to find, identify, reach and use. They must be actionable with one hand. Door accessories should be located at a height between 80 cm and 110 cm, preferably at 90 cm. D-shaped handles are recommended. Doors should not require force of more than 25 kN to be opened. They should be painted in a different colour to the adjacent areas and the handles should also stand out from the doors. There should be no openings under or above the door.

Door to access the bathrooms.

Lastly, manoeuvre spaces on either side of the sliding door of 150 cm should be ensured.

Flooring must be made in a slip-resistant material, both in dry and wet conditions. The walls and floor shall not bear glossy finishes that may be a risk of blinding. The choice of colours of the sanitary fixtures and accessories shall be according to the walls and the floor in such a way that they visually contrast and enable being found by people with visual impairment.



Key
1. Minimum 800 mm (850 mm recommended)
2. Folding grab rails on both sides
3. Washbasin
4. Independent water supply

Sketch taken from the ISO 21542:2011.
Construction. Accessibility to the built environment.

Washbasin

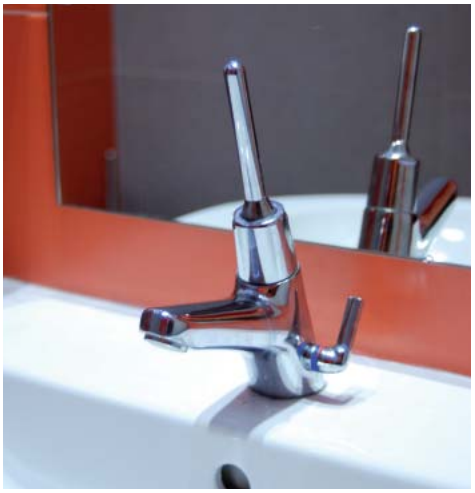
The approach to the washbasin must be made frontally and, therefore, a clear space with sufficient dimensions to permit access by wheelchair must be left in front. The space under the washbasin must be devoid of obstacles and at a level between 65 m and 70 cm. The top of the washbasin should be located be between 75-85 cm.

The front edge of the washbasin should be situated at between 35-60 cm from the wall. The space under the washbasin shall be unobstructed with a knee clearance at least 30 cm high. Taps must be fitted on top of the washbasin, somewhere reachable with an action radius of less or equal to 30 cm.

Adapted washbasin.

Taps should be mixer, lever or sensor operated to aid operation. It is recommended that a thermostat be installed to limit the temperature of the water to a maximum of 40º in order to prevent scalding.

In the surroundings of the washbasin and in the same action radius of the rest of the accessories, there will be a power socket compliant with the statutory provisions and regulations available for this purpose.



Adapted tap.

Supply and drainage pipes must be removed from underneath or protected with insulating shells to prevent being knocked or scalding.

There are several adjustable sinks on the market. Its installation requires flexible and thermally insulated supply and drainage pipes. The accessories –hand dryer, soap dispenser, etc.- must be placed between 80 and 100 cm high.

The mirror shall be placed above the washbasin in such a manner that the lower edge is located 90 cm from the floor.

Any object that projects out onto the access route in more than 10 cm and that is between 30 and 210 m high must be clearly visible and detectable with a white mobility cane. It should also have a fixed element between 10 and 30 cm high for this purpose.

Toilet

There are different approaches to the toilet: frontal, oblique and lateral approaches, and from the right or the left, depending on how the user moves from the wheelchair to the toilet and vice versa. The unobstructed space around the toilet must, therefore, be considered both frontally and on both sides. There shall be an unobstructed space of at least 90 cm wide between the toilet and the wall, and 75 cm deep. The height of the seat shall be between 40 cm and 48 cm.

Wall-mounted toilets are recommended because, in addition to permitting a closer approach by the footrests of the wheelchair, they can be mounted at the desired height and facilitate the cleaning of the area.

When the toilet has a standard height below that mentioned above, it should be placed on top of a brick stand, as close as possible to the base of the toilet to permit maximum approach by the wheelchair.

The flushing system should be activated by a button or a lever, with a large surface area, sufficient to allow it being actioned by someone's hand or elbow, or better still, automatic flushing.

Toilet paper must be located within reach from the toilet and at a height between 60 and 70 cm.

Adapted toilet.

Urinals

When wall-mounted urinals are installed, at least one of them should be set at a height between 60 and 75 cm. Similarly, it is recommended that another urinal is placed at 38 cm and both should be fitted with vertical grab bars. The design of the urinals should contrast visually with the wall in order to be seen by people with impaired vision.

Adapted urinal.

These wall-mounted urinals must be located above the floor with an unobstructed space underneath, without any raised access platform and with a clear floor area in front of the urinal of at least 75 cm wide and 120 cm deep. The flushing mechanisms must be easily actionable, for example, by a lever with one's hand, elbow, etc. or, as mentioned above for the toilets, with automatic flushing systems. If they are operated manually, they should be located at a height ranging from 80 to 110 cm.

Signage

The graphic symbols located on the directional signs and the door signs must be tactile and accompanied by an embossed text and Braille. Accessible services must be signalled with the IAS ISO 7001, PI PF 006 according to the pictograms contained in this standard.

Signage.

Lighting

Light switches should be fixed inside all accessible toilet cubicles or the lighting should automatically switch on when someone enters the room. Timed light switches should not be installed or used.

If there are any electric devices, these will be started by applying pressure. They will be of a sufficient size and their colour will visually contrast with the wall. They must be located at a height between 80 and 110 cm. The average lighting measured at 80 cm in the washbasin area must be at least 200 lux.

Air Conditioning

Comfortable environment temperature must be kept at all times: around 25º C in summer and 21º C in winter.

The ventilation system will provide renewal of air at a rate of 5 volumes per hour, without needing to open any windows.

Alarm system

An assistance alarm, which can be reached from changing or shower seats, from the toilet and by a person lying on the floor, shall be provided in all accessible toilet and accessible sanitary rooms. This alarm should be connected to an emergency help point, or where a member of staff can assist.

The device must have visual and auditory feedback to indicate that, when the alarm has been operated, the emergency assistance call has been acknowledged and action has been taken.

It should take the form of a pull cord, coloured red with two red bangles of 5 cm diameter, one set at a height between 80 and 110 cm and the other at 10 cm above floor level.

Emergency pull cord.

Moreover, there will also be a re-start control if the alarm is activated by error. This button should be reachable from a wheelchair and, where appropriate, from the toilet. The re-start control shall be easy to operate and located with its bottom edge between 80 cm and 110 cm above floor level.

The marking of the reset control shall be both visible and tactile.

A visual emergency alarm shall be provided to alert deaf people or those with impaired hearing in the event of an emergency.

Grab bars

Foldable grab bars should be fitted on either side of the toilet at a distance between 30 and 35 cm from the centre line of the toilet seat. The height should be between 20 and 30 cm above the toilet seat and it should overlap the front edge of the toilet seat in between 10 and 25 cm.

The bars should resist a minimum force of 1 kN applied from any direction. It is recommended that these bars resist 1.7 kN. The location of a folding grab bar should enable access by a wheelchair when it is folded upwards.

When there is a wall beside the toilet, a horizontal grab bar should be fitted at the same height as that mentioned above and a vertical bar exceeding that of the horizontal bar to a height of 170 cm above floor level. The horizontal grab bar should extend a distance of at least 15 cm from the front edge of the toilet seat and be uninterrupted in its entire length. They should be placed at 4 cm from the vertical wall.

The bars should present a circular profile of no less than 35 mm or more than 50 mm diameter.

The positioning of accessories such as hand dryer, soap dispenser, waste recipient, etc. must not hamper the use of the grab bar.

The finishes of these bars shall be such that ensure they are not slippery, with dry or wet hands, and pleasant to touch, both thermally and in what concerns texture. They must be easy to clean and resist rust and the presence of bacteria and germs. They must visually contrast with the walls to which they are attached to, so that people with impaired vision easily identify them.

Grab bar.

Accessories

If a Lady Care Sanitary Bin is supplied, it should be reachable from the toilet seat. Lady Care Sanitary Bins with non-touch opening devices are preferred.

Accessories should be located at a height ranging from 80 to 110 cm and clothes hooks, between 105 and 140 cm.

BATHROOMS	
Minimum number	One at least (at least one unisex accessible bathroom).
Doors	
Turning and manoeuvre clearance	Ø 150 cm.
Space for side access to the toilet	On either side. Width ≥90 m. Recommended depth ≥75 cm.
Height of the toilet seat	40 cm - 48 cm.

Bars	Height: between 20 and 30 cm above the toilet seat. Length: between 10 and 25 cm from the front edge of the toilet seat. Diameter of the bar: 35 - 50 mm. Separation from adjacent walls: 40 mm. Distance: between 30 - 35 cm from the centre line of the toilet. Minimum resistance force of 1 kN.
Washbasin	Unobstructed space underneath: between 65 and 70 cm high. There must also be a toe clearance of at least 30 cm high. The height of the top edge: between 75-85 cm. Distance from the front edge of the washbasin to the wall: 35-60 cm.
Taps	Manoeuvring space less or equal to 30 cm. Taps should be mixer, lever or sensor operated to aid operation. It is recommended that a thermostat be installed to limit the temperature of the water to a maximum of 40ºC.
Mirror	Height of the lower edge: 90 cm from the floor.
Urinals	At least one of them must be at a height between 60 and 75 cm. Another placed at 38 cm high. Both must have vertical grab bars. Unobstructed space underneath, without there being any raised access platform. Approach space: at least 75 cm wide and 120 cm deep.

Mechanisms and accessories	Height: 80 cm - 110 cm. Objects that project outwards on an access route of more than 10 cm and that are between 30 and 210 m high must be clearly visible and detectable with a white mobility cane. There should also be fixed element between 10 and 30 cm high.
Flooring	Slip-resistant both in dry and wet conditions. Non-reflective and visually contrasted with walls and appliances.
Signage	The graphic symbols located on the directional signs and the door signs must be tactile and accompanied by an embossed text and Braille. Accessible services shall be signalled with the IAS and accompanied by the standardised pictogram by sex. ISO 7001 Standard.
Lighting	With a presence detector or mechanism at: – Height: 80 cm – 1 0cm. – Visually contrasted. No timed light switches. ≥200 lux measured at 80 cm in the washbasin area.

5.b. Changing rooms

In service stations where the requirements of work posts or vocational/ occupational training allow the incorporation of employees that need accessible changing rooms, these must be in line with the universal design criteria used for other spaces, which are as follows:

They must have at least: one accessible cubicle and shower for every 10 units or fraction of those installed in each changing room. If the changing room is not distributed in individual cubicles, there must be at least one accessible cubicle.

Doors, handles and frames must comply with the criteria mentioned above for bathrooms.

The showering area must be on the same level and not have any fixed elements that prevent front and side access.

The dimensions of the wet showering area must be 90 cm x 130 cm. Additionally, an adjoining area shall be reserved for transfer purposes of 90 cm x 130 cm.

The floor in the shower recess must have a gradient between 2 and 1.66% sloping towards the drainpipe located on the floor. The area outside the shower recess must have a gradient between 1.4% and 1.25% draining towards the drain. The transition between both areas must be on the same level, without there being a step down or a kerb. The drain outlet should be centrally located and be a round type outlet, not a channel type, to ensure the stability of the shower chair.

The flooring must be slip-resistant in both wet and dry conditions.

Taps will be placed at 90º from the wall where the seat is installed. The taps should preferably be installed on the longer length of the shower and its design shall be that indicated for the washbasins.

The hand-held adjustable showerhead must have a flexible hose with a minimum length of 120 cm and reachable from a height of 100 cm.

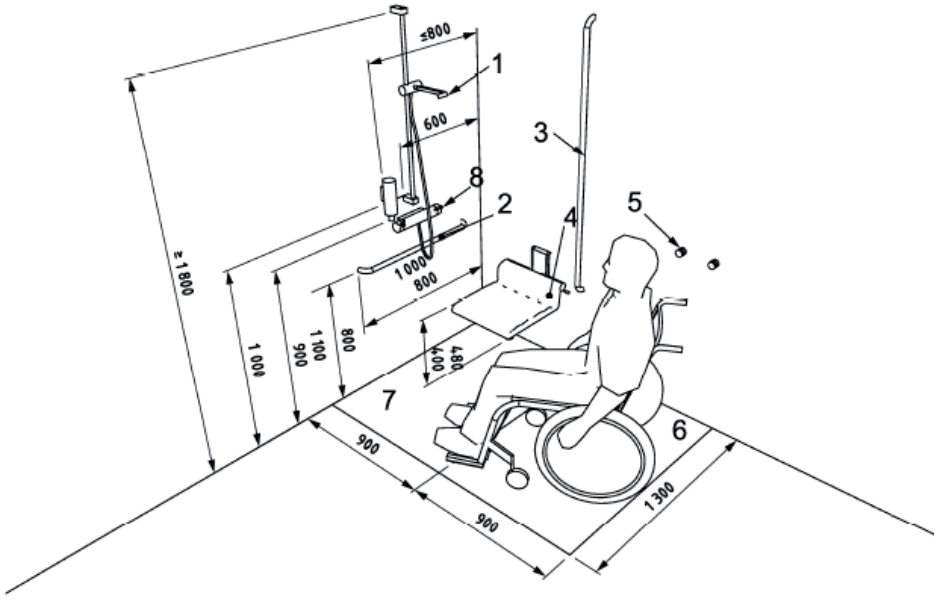
To hold and position the showerhead, there must be an adjustable support that should:

– Allow the graspable portion of the showerhead to be positioned and different angles and heights.
– Allow the graspable portion of the showerhead to be placed at heights between 100 cm and 180 cm above the floor.

The hose connection of the shower must be at a minimum height of 130 cm.

A horizontal grab bar must be situated at 80 cm from the floor on the tap side and be between 80 -100 cm long. A vertical grab bar shall be placed on the seat side at 40 - 48 cm high up to 180 cm measured from the floor.

A shower seat should be fitted. The minimum dimensions should be 45 cm x 45 cm and, when folded down, its top side must be at a height between 40 cm ad 48 cm and separated by a maximum of 40 mm from the rear wall.



Key
1. Hand-held showerhead
2. Horizontal grab bar
3. Vertical grab bar
4. Folding shower seat
5. Towel rail
6. Transfer area
7. Wet area for the shower with a slope of 1:50 to 1:60
8. Shower fittings

Sketch taken from the ISO 21542:2011.
Construction. Accessibility to the built environment.

The folding seat must have the following characteristics:

– Be self-draining.
– Be stable and slip-resistant.
– Fold upwards; when folded, it must not present a hazard for the user and the grab bar should be accessible from the seat.

Folding seat.

The fixation elements of the grab bars and the construction of folding seat must resist a strength of 1.1 kN applied in any position and from any direction.

All the other devices, for example, taps, soap dispenser and pullers should be located in an accessible height ranging between 90 cm and 110 cm.

CHANGING ROOMS	
Number	One accessible dressing room, one accessible bathroom and one accessible shower for every 10 units or fraction.
Doors	As with the accessible bathrooms.
Shower	Access on the same level and not have any fixed elements that prevent front and side access. Wet showering area 90 cm x 130 cm with a transfer area of 90 cm x 130 cm.

Flooring	Shower recess gradient between 2%- 1.66% towards the drain. Exterior area gradient between 1.4%-1.25%. Transition between both areas on the same level. Slip-resistant both in dry and wet conditions. The drain outlet should be centrally located and be a round type outlet, not a channel type.
Taps	At 90º from the wall where the seat is installed. Preferably on the long side of the shower. The same design as the washbasins. A flexible hose of 120 cm at least. Height 90 cm. There should be an adjustable support that allows positioning the handle at different angles and heights, between 100-180 cm.
Grab bars	Horizontal at 80 cm high on the side of the taps with 80-100 cm long. Vertical on the side of the seat at a height between 40-48 cm up to 180 cm. Minimum resistance force of 1.1 kN.
Seat	Folding and with a backrest at 40 mm from the wall at the most. Minimum dimensions: 45 cm x 45 cm. Height: between 40 cm and 48 cm. Self-draining, stable and slip-resistant.
Accessories	Accessible height between 90 and 110 cm.
Signage	Accessible bathrooms shall be signalled with the IAS and accompanied by the standardised pictogram by sex. ISO 7001 Standard.

5.c. Cash points and vending machines

Cash points and vending machines for small products must be accessible. There must be an unobstructed width of 90 cm in front. For people approaching in a wheelchair, there must be an unobstructed space for their knees, with a minimum height of 70 cm, a minimum depth of 60 cm and the above mentioned width.

Requirements of the machines accessed by card:

a) Have a slot:
   – Located at a height between 80 and 110 cm, but preferably between 80 and 90 cm,
   – With bevelled off edges and be visually contrasting with respect to the surrounding area.
b) Include tactile symbols on the surrounding area that:
   – Represent the card
   – Identify how the card must be inserted.
c) Have acoustic signals (whistle) and visual (light) to indicate that the access has been made.

The keyboard must:

a) Be located at a height ranging from 80 to 110 cm.
b) Visually contrast with the background.
c) Characters of a different colour that contrasts with the keys.
d) If it is a numeric keypad, it must be of the type where the buttons have a tactile reference on the number five, and:
   – The height is 0.70 mm ± 0.1 mm; and
   – Its base is 1.5 mm of diameter.
e) Acoustic signals (whistle) and visual (light) to indicate that the access has been made.

The keys must be legible both from a sitting and standing position.

6. Principal building: accessories shop and catering

6.a. Establishment entrance

Regardless of any other indication that show the accessible route towards the building, there must be Tactile Walking Surface Indicators to orient persons with visual impairment towards the the main building.

Access to the shop.

The entrance to the establishment should be level. The raised threshold must not exceed 2 cm in height and be bevelled down and have a visual contrast.

Accessible kerb ramps

If there is a difference between the level of the road and the pavement, there must be a kerb ramp to facilitate people getting to the principal entrance. Kerb ramps must comply with the following characteristics: for a gradient of up to 7.5 cm a slope of 12.5% is admitted, for up to 11 cm a slope of 11% and up to 15 cm, 10%.

Handrails are not necessary if the length of the kerb ramp is under 80 cm, but they are recommended.

Accessible ramp

Ramps offer an accessible route where there are changes of level between the access to the building and the pavement outside. However, when the elevation of a ramp exceeds 30 cm, there should be an alternative staircase to the ramp.

If there are stairs combined with a ramp to access the building, there should be a handrail on both sides. They must be of the same characteristics as those mentioned for the ramps and the flooring must be different in texture and colour at the beginning and end.

The width of the surface of a ramp should be no less than 120 cm and the unobstructed width of the ramp, no less than 100 cm, measured between the handrails or any obstructions.

The slope of the ramp will depend on the length of its sections. According to the ISO 21542 Standard the values will be between the following:

Maximum elevation	Maximum slope	Maximum length between landings
21 cm	1:12 (8,3 %)	2.52 m
50 cm	1:20 (5 %)	10 m

The cross gradient slope will not exceed 2%.

The length of the landings of the ends of the ramps and intermediate landings may not be any less than 150 cm and not be occupied by the swing of the door.

If the length of the ramp is longer than 80 cm, a handrail should be provided on either side. Handrails will be continuous, easily prehensile, visually contrasted and the design will not be climbable.

They will have a rounded profile that can be inscribed into a 45 mm circle and rounded endings. The minimum clear space between any obstacle, such as a wall or anchorages, will be 40 mm. The overall projection of the handrail shall be no more than 10 cm and must allow continuous passage of people's hands.

The height of the top of a handrail should be between 85 and 100 cm above the surface of a ramp, the pitch line of a stair and the surface of a landing.

A second handrail should be installed at a lower height than the previous one. The height to the top of the second handrail must be within 60 and 75 cm above the surface of the ramp, the pitch line of a stair and the surface of a landing. The ramp will have a side upstand of 10 cm projection at the least on both the clear sides. Protection barriers are required if the gradient exceeds 60 cm.

Tactile Walking Surface Indicators should be placed at the beginning and end of the ramp. The flooring must be rigid, with a flat surface and slip-resistant, both in wet and dry conditions. In existing ones, strips can be stuck in the flow direction.

Doors

Access doors must have a minimum unobstructed width of 80 cm and the minimum clear height of a doorway should be no less than 200 cm. However, 120 cm wide and 220 cm high are the recommended measurements.

The opening angle must be at least 90º. Door accessories should be located at a height between 80 cm and 100 cm, preferably at 90 cm, and operated by pressure or lever mechanisms. The maximum distance from the handle of the door leaf to the surface of the wall should not exceed 25 cm.

It is also appropriate to protect the lower part of the doors from being knocked. This can be done with a 40 cm high upstand. Doors should not invade circulation spaces and should be fitted with a slow return and automatic closure system. Doors must never remain half-open.

To facilitate locating the doors, they should visually contrast with the elements located in the surrounding areas. In all cases, there should be a minimum unobstructed manoeuvring space between doors that is no less than 150 cm on either side.

For glass doors, two sets of visually contrasted signs will be fitted and situated at a height between 90-100 cm and between 130-140 cm, respectively.

Automatic powered doors enable a convenient access without having to make opening manoeuvres. The detection system for automatic doors will leave no dead spaces. The extent of the area covered by the detectors will take into account the height of the people who use wheelchairs, people of small stature and children. An automatic sliding or swing door must be equipped with detection devices that prevent the impact with users.

The opening time will be adjusted to the time a person with walking difficulties takes to cross the door. The control systems of the doors will be visually detected to be deactivated manually if need be. They will be equipped with safety mechanisms that ensure they are left open in the event of an emergency.

6.b. Design of interior and circulations spaces

The design will contemplate unobstructed walkways inside the principal building in the service station.

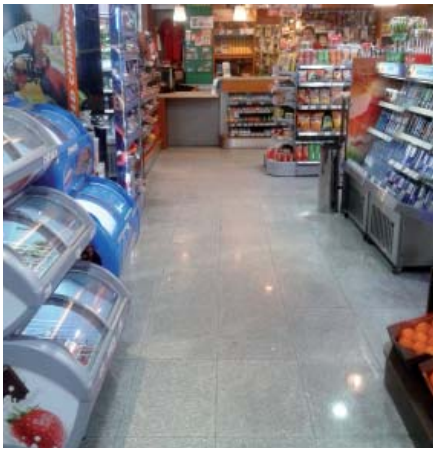
These internal walkways will be designed as accessible and orderly spaces, with no obstacles that could prevent or hinder anyone's visual contact and access to the signage and information. Acoustic conditions will be a priority, especially in what concerns removing any possible reverberation sources.

The minimum unobstructed width of the corridors and aisles should be 120 cm. However, 180 cm is recommended. In changes of direction, the full-unobstructed manoeuvring space must be at least 150 cm.

Shop aisle.

Any object that project out onto the access routes by more than 10 cm and that are between 30 and 210 m high must be clearly detectable with a white mobility cane.

The design of interior spaces shall not contain slopes, and if they already exist, there should be ramps adapted to the parameters included in this manual.



Shop aisle.

The flooring must be resistant to deformation, slip-resistant, in wet and dry conditions, and not cause glares. There should be no loose parts or elements. Rugs or carpets must be embedded and be in line with the features of the accessible flooring.

The level of lighting shall be that which corresponds to the use of each area. The minimum shall be 100 lux in all inside areas of the service station.

In principle, lighting should be uniform and different intensities can be used to inform of the different elements and to communicate different services or signage cores, without there being harsh contrasts that may disorient or dazzle users. In the coffee shop or restaurant, it is advisable to visually differentiate the areas destined for the movement of people and those destined for tables and chairs. A higher degree of lighting is recommended for the shops and particularly, at the entrance, counters and tills.

6.c. Interior doors

Interior doors shall be in line with the criterion established for the restrooms, except when the door must not compulsory open outwards or be sliding or have a gate system.

Moreover, it is important to remember that manually opening pivoting doors require an approach and opening surface according to the sweeping area of the door itself. Moreover, they must have an opening and closing mechanism appropriate to the type of approach -front or side-.

In any case, the chosen opening system should be operable by the application of the minimum force possible. The maximum admissible force for doors that are not fire doors is 25 N.

Handles, pullers and sliders must have a rounded design with no edges to facilitate being used with one hand or with another part of the body. The colour of handles and doorknobs should visually contrast with the door itself to be easily identified. Sliding doors with manual opening require less approach space.

D-type handle.

D-type handles are advisable in small areas and should be fitted without lower rails, or projections on the floor, or grooves measuring any more than 150 cm wide. A double wall or similar system shall protect people's hands and fingers when opening the sliding door.

Swinging doors must not be used. In doors where the usage recommends, a longitudinal viewing panel should be fitted to enable seeing any person located on the other side, regardless of their height. It can contain transparent or translucent sections that enable perceiving the approach of people and that cover the height between 70 and 150 cm, at least.

Door with a viewing panel.

6.d. Furniture

The furniture (tables, chairs, counters, display cabinets, etc.) should be designed so as to ensure being reached and approached easily. Furniture must also contrast in colour with the floor and walls. They should be appropriately fastened and be sufficiently stable and resistant to be used as support.

All corners and edges of the furniture will be rounded or bevelled off to minimise the risk of injury caused by knocks.



Adapted aisles.

Counters

Counters must be easily located and identified and be seen from the entrance to the building. Tactile Walking Surface Indicators can help people with visual impairment to locate them.

In any case, there must be an accessible information desk that meets the following requirements:

– Be communicated with an accessible route from the entrance to the building.
– Be at a height between 74 cm and 80 cm. The minimum width should be 100 cm. The toe clearance under the counter must be at least 70 cm high.
– At least one part of the table must be between 95 cm and 110 cm high to enable people that are stood up to write on them.

As an alternative to the above, an accessible call point could be created where visitors can request assistance.

Counters will be fitted with a magnetic loop for users with hearing aids and cochlear implants. The installation will be accompanied by the standard loop symbol placed in a visible place.
This system improves and brings the sound signal closer. It offers a better quality sound and prevents interferences produced by background noise. It also makes it much easier to communicate and ensure the privacy of the conversation.

Adapted counter till.

Counters shall also be appropriately illuminated without dazzling and will contrast with the floor, the wall and background elements to be easily identified by people with visual impairment.

Reading and writing surfaces on the counter shall be illuminated with at least 200 lux inside and 350-450 lux on top of the worktable.

Display cases, cupboards, glass cabinets...

The different products for sale shall be arranged on the shelves, glass cabinets and display cases at a recommended height of between 50 and 120 cm. This is so that people with short statures or in wheelchairs can reach them. To achieve this, the most appropriate furniture should be chosen, or there should be an alternative system.

It is recommended that the shelves situated above 90 cm and below 60 cm approximately have a maximum depth of 30 cm so that the products can be easily reached. The shelves that are between these dimensions shall have a larger depth, up to 60 cm.

To enable the products to be seen better, it is advisable to place illumination inside cupboards, cabinets and fridges. The opening of cabinets, cupboards or fridges, which are used frequently in service stations, must offer little resistance.

The door handles shall be positioned at an appropriate height -between 90 and 110cm- and will be of a different colour and texture to the door leaf to facilitate being identified by touch or sight. Door handles must also leave a sufficient space for fingers to go through. Under no circumstances shall a key be the opening method of a door.

Fridges.

It is advisable that the lower section of the cabinets and fridges has an unobstructed space of 30 cm high and 20 cm deep to facilitate the approach of any person, but especially people using wheelchairs.

If the restaurant is self-service, display cabinets should be well illuminated and the height of each of the shelves should be readily accessible to any person.

Tables and chairs

Chairs must have armrests and backrests to make sitting and standing easier.

It is recommended that the chairs be stable, but without being heavy, so that they can be moved with ease. Tables must ideally be round to favour visual contact among people with hearing impairments, bearing in mind what has been described for hanging elements in the circulation areas.

Adapted tables and chairs.

Tables will have an underneath space of at least 70 cm high, 90 cm wide and 60 cm deep to enable people in wheelchairs to approach them comfortably.

In restaurants, 25% of all tables should be accessible for people using wheelchairs and 25% of the entire length of the counter must meet the requirements established for accessible counters, with a minimum of 100 cm.

Adapted table.

Other elements

Televisions or other audio-visual communication devices must have a subtitling and audio-description system so that visitors with hearing or visual impairments may access the information. The volume of any emitter device must be discrete so as to not hinder communication.

7. Accessibility to information and communication

General and applicable concepts

The built environment must be designed, constructed and managed in such a way that it makes orientation as easy as possible. Orientation means finding the itinerary, preventing obstacles that could cause harm and knowing when one has reached their destination.

The relevant information should be provided in a format that is accessible to everyone, according to the principle of the two sensory modes:

– Oral/tactile information for people with visual impairments.
– Visual information for people with hearing impairments.

The information can be divided into three levels:

– Level 1: safety information.
– Level 2: general information.
– Level 3: advertising information.

It is important that these three levels of information are clearly distinguished.

Signage

All the adaptations, adjustments and accessibility services of the service station will be duly signalled with the International Accessibility Symbol in the standard colours. This symbol encourages those who may need the service to use it and be a marketing element and competitive difference for the station itself.

Signs and information boards inside must be clearly visible to all visitors or workers. The size, the form of the letters or pictograms, the colour contrasts, etc. should be appropriate. The signs must be easy to read and be understood by everyone.

The colours and symbols used shall be the standard ones or shall correspond to universal codes, be embossed and in Braille.

Signage should be placed where it is clearly visible by people who are sitting, standing or walking and at between 120 cm and 160 cm high. Visitors must be able to get close to the sign to read it from a short distance.

Both the sign and the support must not constitute a hazard for people walking around and should allow visitors getting up close to the sign or informative panel to read or decipher the message. The materials used as support elements must not produce flashes or reflections that may interfere with the access to the information.

The typography used for the banners, posters and other information systems should be easy to read. The style of the characters should be sans serif, similar to Helvetica or standard Arial.

The height of the characters depends on the distance at which it should be read. The preferable height of the character should be between 20 mm and 30 mm for each metre of viewing distance. The height of the characters should be no less than 15 mm.

When speaking about the design and distribution of the service station and its ancillary buildings, we have emphasized the importance of a good signage for the correct access and use thereof. This signage should be in line with the corresponding criteria and always be positioned at a suitable height to ensure it being read properly.

Emergency

Service stations and ancillary buildings (shops, restaurant or coffee shop) must have the corresponding evacuation and emergency plan. All the possible visitors, and in particular, those that may have greater difficulties, people with impairments that affect mobility, sight, understanding, etc. shall be taken into account in the above mentioned plans. Emergency alarms must be acoustic and visual.

8. Good practices

In Repsol's experience, when a company takes into account the everyone's needs when using the services provided in our service stations and applies solutions to the deficiencies, all the visitors benefit and not just those with some disability. Similarly, the design proposals are taken into account for future service stations and those that are going to be refurbished.

The strategy taken by REPSOL continues focused on increasing commitment for social action, reaffirming the commitment towards creating value for all groups of people with which this company relates with and to improve the well-being of the companies in which our economic activity is present.

A Universal Accessibility Management System is set out in 4 Service Stations. The one in Mostoles and another in Zaragoza were pioneers in the project. A further two were added to these, one in Madrid and another in Venturada (Carretera N-I, Madrid).

Additionally, they are certified by AENOR in the UNE 170001 Standard. Repsol has become the only Network of Service Stations that has certified facilities in Spain.

The object of this Management System is to offer service stations ready to receive visitors with any type of disability, reaching the maximum possible levels of accessibility to allow all users to operate the installations in the most independent and natural manner possible.

This is how we try to increase their degree of satisfaction and quality of life.
In addition, there may be personnel with **different faculties** working in these service stations, in line with the commitment towards employment integration of people with cognitive, physical and sensory disabilities.

Different areas of the Management of the Network of Repsol Service Stations and others from the Executive Marketing Management participate in maintaining this Management System. This is so, because it involves issues that are the responsibility of different organisational areas, such as the Departments of Engineering, Direct Management, Human Resources, Business Development and Marketing, and Network Development Services, Prevention and Environmental Safety, and Quality of the Executive Marketing Management.

In the execution of this project, the majority of the standards were modified, both in the design of the service stations and their operation. We even modified the placement of the products in the shops to make them more accessible and adapted some of the furniture installed in the shops according to the criteria included in the Universal Accessibility Management System (SGAU).

The system is focused on the following main phases:

I. Accessibility Diagnosis. Revision of the constructive projects according to the DALCO criteria.
II. Control and follow-up of the works.
III. Final verification of the built environment.
IV. Preparation and implementation of the Accessibility Management System.
V. Selection, hiring and training of the employees of the service stations.
VI. Follow-up and revision of the implementation of the Management System and maintenance of the Universal Accessibility conditions.

9. Accessibility management

In any company, maintaining a good relationship with their customers is essential to obtain good financial results and this relationship, in turn, depends on the operation of the entire organisation and not only, as could be imagined, on the staff that runs it.

Achieving the accessibility goals in products and services is an object that must spread to all the company starting from the management. It is, therefore, advisable to incorporate accessibility management to common management systems and thus:

1. The objectives to be achieved with respect to accessibility shall be established. The desired policy in relation to people with disabilities and their access to the services provided at the service station will also be defined.
2. A diagnosis of the situation shall be prepared so as to learn about what is accessible and what is not.
3. An action plan that includes the following shall be prepared and implemented:

   – The actions that will be carried out to make the current services of each service station accessible.
   – That which should be done every time there is a change or a new service is implemented or another service station is built.
   – The actions that must be carried to maintain and improve accessibility.

Everything will be assessed based on indicators or milestones, established in the action plan that enable verifying the breaches and compliances at the same as we implement the continuous improvement strategy.

Training

The functional capacities of people (vision, hearing, walking, handling, range, strength, vocalisation, understanding, attention, reflection, etc.) will vary depending on the multiple factors and must be taken into account when serving customers.

It is essential that all the employees of the service station have the appropriate training and know-how to deal with any kind of person, including those with different abilities. It is also very important to be aware that this diversity, that which makes each person different, cannot be visible; in fact, it will be invisible on many occasions.

Bearing in mind that diversity, knowing how to answer to the specific needs of any visitor, entails a personal and professional growth, at the same time as it favours solidarity among citizens.

It would be advisable that companies offer training courses in this respect in the same way as they do with other subjects: risk prevention, etc.

People with visual impairment accompanied by their guide dogs shall have guaranteed access to all the spaces of the service station, including those of the ancillary buildings (shop, coffee shop and restaurant).

Some definitions that may be useful have been included in the brief Glossary at the end of this manual.

Infrastructures and purchases

Another recommendation of particular interest to any company is that the departments or people that are in charge of the infrastructures and the purchases, those who plan the construction or acquisition of buildings and premises, and the complete provisions thereof, should establish specific criteria and apply them to ensure they are accessible.

Attention to special needs

Fuel dispensing and assistance in other services

The company must foresee that certain people with certain levels of disability may need the provision of specific services, including that of filling the tank in self-service stations. If these services are offered, there should be a system for visitors to request such services to the employees at the station without getting out of their vehicle.

The menu

In the coffee shop and restaurant, the menu should ideally be designed bearing in mind the following requirements:

– The name of the dish must be accompanied by a brief description including the main ingredients. A photograph of the dish is also recommended.
– The size of the font, the colour and the format used should be easy to read and understand.

A menu in Braille must also be available. This menu should also include the prices. If the prices were not included in this menu, the waiter must address the visitor as he would any person and ask whether they would like the menu to be read to them.

10. Customer care

Any employee working at the service station or in any of the ancillary services, shops, coffee shops or restaurants and that has a direct relationship with customers must know how to serve them and meet their needs with respect to the possible disability situations.

For this, it will be essential to remember that the general rules on customer care are:

– Show positive attitudes and be natural.
– Always address the customer directly and not the people they are accompanied by, regardless of their disability.
– Remain calm, bearing in mind that it is the customer that requires the service and needs the employee and not the other way around.
– Look at the customer in the eyes to transmit trust and perceive whether the message is being understood.

Also, if the employee were to notice that the customer has a **hearing impairment** he must bear in mind the following basic recommendations:

– Do not shout.
– Look at them when they speak and be as natural as possible.
– Speak at a normal pace; nor too fast nor too slow.
– Give complete information, not just scattered words.
– Enunciate the words correctly, without making faces and exaggerating so as not to distort the normal articulation of words.
– Avoid covering your mouth with a pen or hand not to hinder the emission of sound and to facilitate lip reading.
– Remain still while talking, without turning round or turning your head, or bending over. In general, one should not adopt postures that could hinder enunciation, emission of voice or that prevents lip reading

– Help with mimics, gestures and simple signs, if necessary.
– Help with writing, if necessary, to complete the oral expression.

In any case, it is advisable to use sign language or facilitate lip reading depending on the needs of the person.

Even if it is apparent that the person wears hearing aids, the recommendations must be respected.

When the employee of the shop, coffee shop or restaurant notices that the customer has a **visual impairment** or blindness, they must follow these basic recommendations:

– Identify themselves so as to be recognised by the customer.
– Ask the customer if they need help (for example, in reading the menu).
– Speak naturally, using the usual sentences, "See!", "Did you see?"
– Present the different elements (menu, if in Braille or big and clear font, or message, etc.) in an orderly manner, letting them know where you are (left, right, next to them, etc.) and even bringing it up to the customer's hand, if necessary.
– Accompany them in their movements in large establishments, if necessary; offer an arm by bringing it towards the customer's hand if they have visual impairment or blindness. This offering must only be done after asking.

If the employee were to believe the customer had an **intellectual impairment,** they must follow the following basic recommendations:

– Listen to what the customer wants. Do not anticipate what they might need: they will make it clear.
– Use a simple and accurate language.
– Repeat the information as many times as may be needed, remaining calm.

If the employee believes that the customer is suffering from a **cognitive impairment,** these following basic recommendations must be taken into account:

– Avoid introducing elements that may cause stress -tension- in the relationship and communication with the customer.
– Serve the customer with interest and play down any changes of opinion, mood or when faced with lapses or lack of attention.

When the employee notices that his customer has a **physical disability,** the following basic recommendations should be taken into account:

– Offer the services that are at the disposal of the customers: filling the tank, washing the car, checking the pressure of the tyres, etc.
– Facilitate reaching objects.
– Adjust the pace to that of the customer when accompanying them.
– Open doors, if necessary.
– In the restaurant or coffee shop, bring the chair up or back it off for the customer to sit down or get up or help them get closer to the table -if they use a wheelchair-.
– Sit them close to the exit in the restaurant if they have mobility difficulties, except where the client says the contrary.
– Offer specific services if difficulties are noted in handling elements: different glasses or knives and forks to facilitate them being held, specific food preparation services, etc.

The key is to always ask before acting. This is the most important recommendation of all, as it is a sign of respect and consideration towards other people.

Glossary of terms

Universal accessibility

As defined by the General Disability Act (GDA), Royal Legislative Decree 1/2013 of 29th November: Universal accessibility are the conditions that the surrounding environments, processes, goods, products and services, as well as the objects or instruments, tools and devices must meet to be understandable, usable and practicable by everyone in the best safety and comfort, and as independently and natural as possible. This presupposes the strategy of "design for all" and it is understood without prejudice of the reasonable adjustments that must be adopted.

Universal design or design for all

Universal design or design for all: is the activity that conceives or designs environments, processes, goods, products, services, objects, instruments, programmes, devices or tools, from the origin, and provided it is possible, in such a way that they may be used by everyone, to the largest extent possible, without a specialised adjustment or design. The "universal design or design for all" will not exclude support products for particular groups of people with disability, when they need it. General Disability Act (GDA), Royal Decree 1/2013.
The principles have been developed at the beginning of the manual.

Impairment and disability

Man has been transforming the natural environment with his work and with the help of ever-developing technology. However, unfortunately, and more often than not, that transformation ability, the ability to apply the benefits of development, has sometimes not been applied sufficiently to resolve particular needs of many people. It was not until 2001 with the approval of the International Classification of Functioning, Disability and Health (ICF) in the framework of the World Health Organisation, that the difficulties people with disabilities suffer due to the shortcomings of the environment were formally recognised.

This CIF defines term **functioning** as all body functions & structure, activities and participation. It indicates the positive aspects that interact between an individual (with a health condition) and contextual factors (environmental and personal factors)." And, conversely, **disability** as an " umbrella term for impairments, activity limitations and participation restrictions. It outlines the negative aspects that interact between an individual (with a health condition) and contextual factors (environmental and personal factors)."

This means that a disability -or a difficulty to interact with the environment- does not depend on a certain health condition, marked by an impairment –an alteration or loss of an ability with respect to the statistical average due to an illness, a disorder, injury or trauma, or due to age, or a situation of stress, or pregnancy, etc.- but on this health condition combined with difficulties or impediments in the implementation of activities and social participation.

Support product

When the development of the technique cannot resolve the difficulties that appear when performing activities and participating in the social life or when the solutions to be applied are disproportionate or when the environmental or personal factors do not allow it, support products must be used. A support product is any product, instrument, equipment or system designed to prevent, compensate, mitigate or neutralise a difficulty to interact with the environment. Examples are canes and wheelchairs, text telephones for deaf people, magnifying glasses, grab bars in bathrooms, etc.

Comparison table of parameters between the "International ISO 21542:2011 standard. Building construction. Accessibility and usability of the Built Environment" (hereinafter ISO 21542:2011) and the "Basic Safety use and accessibility document", of the Technical Building Code, pursuant to the Royal Decree 173/2010 (hereinafter referred to as the DBSUA)

PARAMETER	ISO 21542:2011	DBSUA
CAR PARKING		
Number	- Up to 10 parking spaces: 1 designated accessible parking spaces; - Up to 50/2; - Up to 100/4; - Up to 200/6; - Over 200/6 designated accessible parking spaces plus 1 for each 100 additional.	1 for every 33 or fraction.
Signage	Directional arrows combined with the international symbol of access shall be used. Designated accessible parking spaces shall be marked both on the pavement and with a vertical sign with the International Accessibility Symbol pursuant to the design of the UNE 4150 or the ISO 7001 design. They must be visible, easily identified and located. They should not be a hazard. The transfer area will have lines painted on the floor.	With the International Accessibility Symbol, supplemented with a directional arrow, where appropriate.
Location	Close to the access and connected by an accessible route no longer than 50 m.	Close to the pedestrian access to the parking and communicated by an accessible route.

PARAMETER	ISO 21542:2011	DBSUA
Connection	If there is a pavement, a kerb ramp will be created to overcome the gradient. The minimum width of the kerb ramp must be 1.00 m. The gradient slope of the kerb ramp shall comply with what is contained in the section on slopes.	Communicated through an accessible route to the service infrastructures.
Side-by-side dimensions	Minimum width: 3.90 m; Minimum length: 5.40 m. This width includes the transfer area beside the car, with a minimum width of 1.50 m. Two accessible parking spaces with a shared transfer area must have a minimum width of 6.30 m.	It has an approach and transfer space beside to the parking space, with a width ≥ 1,20 m if the parking space is side-by-side parking.
Dimensions of the line	Not defined.	Rear space ≥ 3,00 m long.
Protection bollards	Minimum clear height of 100 cm No minimum separation between them and other elements have been defined.	Minimum clear height of 80 cm, separated by at least 120 cm from the doors. No minimum separation between them has been defined.
CIRCULATION: VEHICLES AND PEDESTRIANS		
Draining elements	No grids and drainage elements	Gaps must be less than Ø≤ 1.5 cm
Width	180-90 cm, depending on the transit. Passing and turning space of at least 1.80 m x 2.00 m for every 25 m.	120 cm and 150 cm at changes of direction.
Height of clearance	≥ 210 cm	≥ 2,20 m
Unobstructed Manoeuvre space	Ø≥150 cm	Ø≥150 cm
Transversal slope	≤ 2%	≤ 2%
Longitudinal slope	≤ 5%, anything above 5% shall be considered a ramp	≤ 4%, anything above 4% shall be considered a ramp

PARAMETER	ISO 21542:2011	DBSUA
Gradients	No stairs or isolated single steps. If there are gradients, these must be supplemented by a ramp or a lifting platform.	No isolated stairs or two consecutive steps are allowed on accessible routes. There will be no joints that projects out more than 4 mm.
Gradients without ramps at building entrances	Maximum admissible slope for doorsteps with no ramp: H ≤ 7,5 cm. Special consideration must be paid to the entrances of existing buildings H ≤ 37, 5 cm with an inclined cross gradient slope ≤ 12,5%.	No joints higher than 4 mm. Occasional and small protruding elements on the floor level (for example, door locks) must not project in more the 1,2 mm. Any protrusion that exceeds 6 mm on the opposite side to the direction people are travelling in must not form an angle with the floor exceeding 45º. Inclinations that do not exceed 5 cm will be resolved with a slope that does not exceed 25%.
Flooring	The flooring must be continuous, firm, stable and slip-resistant, both in dry and wet conditions.	Admissible discontinuities: Joints ≤4 mm. Projections ≤12 mm and if higher than 6 mm the bevelled borders should be less than 45º. Class 3 for outdoors
PETROL PUMPS, CAR WASH AND OTHER SERVICES		
Clear area in front of the machine	1.50 cm x 1.50 cm	Not defined
Height of the hoses	80 - 90 cm	70 - 120 cm
Distance to the corner	60 cm, but preferably 70 cm	30 cm

PARAMETER	ISO 21542:2011	DBSUA
Horizontal scope	≤30 cm.	Not defined in general, only for bathroom fittings ≤60 cm.
Height of the display and prices on meters	120 cm and 140 cm	Not defined
Characteristics of the control devices (buttons)	The figures or the complete device forming an angle of approx. 45º with respect to the vertical support.	Not defined
Operation strength of the control buttons	2,5 - 5,0 N.	Not defined
Height of the card slot	80 cm-1 10 cm, preferably 80 cm-90 cm	70-120 cm.
Characteristics of the card slot	Bevelled edges and visually contrasted. Must include: tactile graphic symbols on the surrounding area representing the card and identifying which way the card is to be inserted; have auditory signals (a beep) and visual (a light) to indicate that access has been made. The keyboard: Height 80 cm and 1.10 cm. Visually contrasted and have characters of a colour that contrasts with that of the keys; if it is numeric, it must be of a type whose buttons have a tactile reference on the number five and the height must be 0,7 mm ±0,1 mm, and the base 1.5 mm in diameter, and have auditory signals (a beep) and visual signals (a light) to indicate that access has been made. The keys must be legible both from a sitting and standing position.	Not defined

PARAMETER	ISO 21542:2011	DBSUA
Lighting	Changes in level and signage must be illuminated with at least 100-lux lighting.	≥20 lux outside and ≥100 lux inside.
Flooring of the car wash area	Slip-resistant both in dry and wet conditions.	Class 3 with Rd > 45
Height of handling elements in the car wash area (buttons, switches, hoses, jet lances)	80-90 cm.	70-120 cm.
Illumination of the signage in the washing, air and water areas	≥100 lux.	≥20 lux outside
Height of handling elements in the air and water area	80 - 110 cm.	70-120 cm.
ACCESSIBLE BATHROOMS		
Number	Minimum 1 in each independent occupation unit shared by both sexes	Minimum 1 for each 10 units
Minimum width for doors	80 cm, recommended 85 cm	78 cm.
Minimum height for doors	200 cm.	200 cm.
Space to turn and manoeuvre in the cubicle	Ø 150 cm.	Ø 150 cm.
Side access space to the toilet	On both sides Width ≥90 m From the back to the edge of the toilet ≥ 65 cm	On both sides Width ≥80 m From the back to the edge of the toilet ≥ 75 cm
Height of the toilet seat	40 cm-48 cm.	45-50 cm.

PARAMETER	ISO 21542:2011	DBSUA
Height of the grab bars	Between 20 and 30 cm above the toilet seat	70-75 cm, measured from the floor.
Length of the grab bars	10 cm and 25 cm from the front edge of the toilet seat	Total length of the bar ≥ 70 cm.
Separation between the grab bars	Distance between 30 and 35 cm from the centre line of the toilet	Separated by 65 - 70 cm.
Diameter of the grab bars	35 mm -50 mm.	30-40 mm.
Separation between the grab bars and the wall	40 mm.	45-55 mm.
Minimum resistance force of the grab bars	1 kN.	1 kN.
Washbasin – Unobstructed space below	Height 65 – 70 cm and 20 cm deep. Toe clearance ≥30 cm	70 (height) x 50 (deep) cm. No pedestal.
Washbasin- Height of the top side	75-85 cm.	≤ 85 cm.
Distance from the front edge of the washbasin to the wall	35-60 cm.	Not defined
Reach distance to the taps	≥30 cm.	≥60 cm.
Features of the taps	Taps should be mixer, lever or sensor operated to aid operation. It is recommended that a thermostat be installed to limit the temperature of the water to a maximum of 40ºC.	Automatic, with a presence detector system or manual, of the single mixer type with a long gerontological lever.
Height from the lower edge of the mirror	90 cm from the floor.	90 cm or adjustable to 10º with the vertical support.

PARAMETER	ISO 21542:2011	DBSUA
Height of the lower edge of the urinals	At least one of them must be between 40 cm and 90 cm	When there are more than 5, one of them between 30 and 40 cm.
Features of the accessible urinal	Fitted with a vertical grab rail. With unobstructed space beneath, no raised access platform	Not defined
Approach space of the accessible urinal	Minimum 70 cm wide and 120 cm deep	Not defined.
Height of the mechanisms and accessories	80-110 cm	70-120 cm.
Maximum dimensions of hanging elements	≥10 cm or vertical projection	≥15 cm.
Vertical projection of hanging elements below 210 cm	With a fixed element between 10-30 cm high	With fixed elements that restrict access to them and enable being detected by the canes used by blind people.
Flooring	Slip-resistant both in dry and wet conditions. Non-reflective and contrasted with walls and appliances.	Class 2 with 35< Rd ≤45.
Signage	The graphic symbols located on the directional signs and doors must be tactile, accompanied by an embossed text and Braille. Accessible bathrooms must be signalled with the IAS ISO 7001, PI PF 006 standard, accompanied by the standard pictogram by sex PI PF 003 of the ISO 7001 standard.	Hygienic services of general usage shall be indicated with standard embossed sex pictograms with visual contrast at a height between 0.80 and 1.20 m, located beside the doorset, on the right-hand side door and seen while entering. Accessible hygienic services (bathrooms, changing room cubicle and accessible showers) must be signalled with the International Accessibility Symbol.

PARAMETER	ISO 21542:2011	DBSUA
Height of the illumination of the mechanisms	80-110 cm.	70-120 cm.
Characteristics of the illumination	No timed light switches are permitted inside. Activated by pressure, with a contrasted mechanism or presence detector.	Timed light switches are not permitted in accessible bathrooms or changing rooms. Alarm switches and buttons must be easily actionable by a closed fist, elbow and hand, or they will be automatic. They will be visually contrasted from the surrounding elements.
Minimum illumination	An average measured at 80 cm in the washbasin area ≥200lux	≥100 lux
CHANGING ROOMS		
Number	Not defined	In each changing room: one accessible changing cubicle, one accessible bathroom and one accessible shower for every 10 units or fraction of those installed. If the changing rooms are not distributed in individual cubicles, at least one shall be accessible.
Doors, handles and chains	The same as the bathrooms	The same as the bathrooms
Dimensions of the wet showering area	90x130 cm.	80x120 cm.
Shower recess outside wet showering area	90x130 cm.	Where showers and dressing rooms are arranged in lines, the width to pass between the cubicles shall be ≥ 1.20 m. If it is a closed enclosure Ø≥150 cm.

PARAMETER	ISO 21542:2011	DBSUA
Shower gradient	2% - 1.66 % sloping towards the drainpipe located on the floor. Outside the shower recess will have a gradient between 1.4% - 1.25%	Levelled floor with an evacuation slope ≤2%.
Drain in the shower	Centrally located and be a round type outlet, not a channel type.	Not defined.
Shower flooring	Slip-resistant when dry and wet	Class 3 in the shower area and class 2 in the rest of the cubicle.
Shower fittings – positioning	90º from the wall where the seat is installed	Not defined
Shower fittings- characteristics	Taps should be mixer, lever or sensor operated to aid operation. It is recommended that a thermostat be installed to limit the temperature of the water to a maximum of 40º	Automatic, with a presence detector system or manual, of the single mixer type with a long gerontological lever.
Reach and heights of the shower fittings	Flexible hose measuring ≥120 cm long and a range of 100 cm high. There must be an adjustable support, which must: – Be installed on the horizontal grab rail. – Allow the graspable portion of the showerhead to be positioned and different angles and heights. – Allow the graspable portion of the showerhead to be placed at heights between 100 cm and 180 cm above the floor. The connection of the shower hose must be at a minimum height of 130 cm.	Height 70-120 cm. Horizontal reach from the seat ≤60 cm.

PARAMETER	ISO 21542:2011	DBSUA
Grab bars in the shower	A grab bar must be situated at 80 cm from the floor on the tap side, between 80-100 cm long. A vertical grab bar shall be placed on the seat side at 40-48 cm high up to 180 cm measured from the floor.	On the seat side: horizontal grab bars must be installed around the perimeter on at least two walls that form a corner, and a vertical grab rail must be fitted on the wall at 60 cm from the corner or back of the seat.
Minimum resistance force of the grab bars in the shower	1.1 kN	1 kN
Minimum resistance force of the shower seat	1,1 k.	1kN
Dimensions of the shower seat	45x45 cm.	40x40 cm.
Height of the shower seat	40-48 cm.	45-50 cm.
Features of the shower seat	Separated at maximum 40 mm from the wall located behind. Foldable, self-draining; stable and slip-resistant; when folded it should not represent a risk for the user and the grab bar must be accessible from the seat.	Foldable and with a backrest. Side transfer space ≥ 80 at one side and a differentiated colour finish with the surroundings.
Height of the shower accessories	90-110 cm.	70-120 cm.
Signage	Accessible bathrooms and changing room cubicles must be signalled with the International Accessibility Symbol ISO 7001, PI PF 006 standard, accompanied by the standard pictogram by sex PI PF 003 of the ISO 7001 standard.	Accessible hygienic services (bathroom, changing room cubicle and accessible shower) shall be signalled by the International Accessibility Symbol and supplemented, where necessary with a directional arrow.

PARAMETER	ISO 21542:2011	DBSUA
PUBLIC TELEPHONES		
Location and number	On an accessible route that allows a front and side approach. At least one of them in each cluster must be equipped with a magnetic loop and a text screen.	Not defined.
Characteristics of the elements	Maximum height of the control panel 110 cm. All the information must be in two formats at least, between: Visual, auditory and tactile. The telephone keypad must have a tactile reference on the number five.	Not defined.
ANCILLARY BUILDINGS: ACCESSORIES SHOP AND RESTORATION		
ENTRANCE TO THE ESTABLISHMENT		
Tactile Walking Surface Indicators	When there are no other indications that show the route to the building, there should be Tactile Walking Surface Indicators	To signal an accessible route up to an accessible call point or an accessible information desk, there will be a 40 cm wide parallel channelling, in a contrasted colour to the flooring and with an embossing of 3±1 mm high inside and 5±1 mm outside.

<table>
<tr><th>PARAMETER</th><th>ISO 21542:2011</th><th>DBSUA</th></tr>
<tr><td>Threshold on access doors</td><td>≥2cm high and be bevelled down and visually contrasted.</td><td>≥1.2 cm and the protrusion that exceeds 6 mm on the opposite side to oncoming people must not form an angle exceeding 45º from the floor. Inclinations that do not exceed 5 cm will be solved with a slope that does not exceed 25%.</td></tr>
<tr><td>Accessible kerb ramps</td><td>With a maximum gradient of 7.5 cm, the slope can be up to 12.5%, for up to 11 cm the slope can be up to 11.1% and up to 15 cm, 10%. No handrail is required if the length of the kerb ramp is less than 80 cm.</td><td>Not defined.</td></tr>
<tr><td>Accessible ramp. Relation between the longitudinal slope and maximum sections</td><td><table><tr><th>Max. S</th><th>Max. L</th></tr><tr><td>5.9%</td><td>6.54 m</td></tr><tr><td>7.7%</td><td>3.18 m</td></tr><tr><td>10%</td><td>1.50m</td></tr></table></td><td><table><tr><th>Max. S</th><th>Max. L</th></tr><tr><td>6%</td><td>6.00-9.00m</td></tr><tr><td>8%</td><td>3.00-6.00m</td></tr><tr><td>10%</td><td>>3.00m</td></tr></table></td></tr>
<tr><td>Cross gradient slope – Accessible ramp</td><td>≤2%.</td><td>≤2%.</td></tr>
<tr><td>Accessible ramp - width</td><td>≥120 cm.</td><td>≥120 cm.</td></tr>
<tr><td>Accessible ramp – depth of the landings</td><td>≥150 cm.</td><td>≥150 cm.</td></tr>
<tr><td>Height to require protection barriers</td><td>60 cm.</td><td>55 cm.</td></tr>
<tr><td>Height of protection barriers</td><td>Not defined.</td><td>90 cm when the difference in the level they protect does not exceed 6 m and 110 cm for the rest of the cases.</td></tr>
</table>

PARAMETER	ISO 21542:2011	DBSUA
Design of the protection barriers	Not climbable.	Not climbable, the opening between lower elements at 10 cm.
Design of the handrails	Continuous, easily prehensile, visually contrasted and the design will prevent being climbed.	Firm and easy to grab, it must be separated from the wall in at least 4 cm and the holding system will not interfere with the continued passing of the hand.
Section of the handrail	Rounded profile that can be inscribed into a 45 mm and 35 mm circle. Rounded edges.	Not defined.
Height of the handrail	85-1 00cm. 60- 75cm.	90-110 cm. 65-75 cm.
Height of the upstand on the ramp	10 cm.	10 cm.
Flooring on ramps and stairs	Rigid, with a flat surface and slip-resistant resistant, both in wet and dry conditions.	Ramps with a slope less than 6% shall be of Class 2 and ramps with slopes equal or higher than 6% shall be of Class 3.
Access doors – width clearance	80 cm, but preferably 85 cm	78 cm.
Access doors – height clearance	200 cm	
Access doors- height of the door knob	80-100 cm, preferably 90 cm	70-120 cm.
Operation of the opening mechanisms	Automatic or by pressure or with a lever.	Automatic or by pressure or with a lever.
Maximum distance from the door knob to the wall surface	25 cm	Not defined

PARAMETER	ISO 21542:2011	DBSUA
Unobstructed space on either sides of the door	150 cm.	120 cm.
Signalling strips on glass doors	Upper height: 130 -140 cm. Lower height: 90 -1.00 cm.	Upper height: 85 -110 cm. Lower height: 150 -170 cm.
Automatic powered doors	An automatic sliding or folding door must be equipped with detection measures that prevent impact with the users. They will be fitted with a safety mechanism that leaves them open in the event of an emergency.	Automatic pedestrian doors will be CE marked pursuant to the Directive 98/37/CE on machines.
DESIGN OF THE INTERIOR SPACES		
Widths of the corridors	120 cm, recommended width of 180 cm	120 cm
Unobstructed manoeuvre space in the corridors	Ø≥150 cm	Ø≥150 cm.
Maximum dimension of hanging elements	≥10 cm of vertical projection	≥15 cm
Vertical projection of hanging elements below 210 cm	With a fixed element between 10 and 30 cm high.	With fixed elements that restrict the access to them and enable being detected by the canes used by blind people.
Occasional narrowing points	Not defined.	Occasional narrowing of 1.00 m is allowed if the length is ≤ 50 cm. The separation of passing nodules or change of direction in occasional narrow areas is ≤ 65.

PARAMETER	ISO 21542:2011	DBSUA
Maximum longitudinal slope	5%.	4%.
Maximum cross gradient slope	2%.	2%.
Admissible slopes without a ramp in interior areas.	A maximum slope of 12.5% shall be allowed to solve gradients with a difference in height of ≤7.5 cm	Occasional and small protruding elements on the floor level (for example, door locks) must not project in more the 1,2 mm. Any protrusion that exceeds 6 mm on the opposite side to the direction people are travelling in must not form an angle with the floor exceeding 45º.
Flooring	The flooring must be resistant to deformation, slip-resistant in dry and wet conditions, and must not cause glares	In dry interior areas they shall be of Class 1 with 15 <Rd ≤35 and in inside wet areas, such as the entrances to buildings from outside shall be Class 2.
Illumination in corridors	Not defined	≥100 lux.
INTERIOR DOORS		
Interior doors - Width	80 cm, recommended 85 cm	78 cm.
Height	200 cm	
Height of the opening and closing mechanisms	80-110 cm.	70-120 cm.
Horizontal unobstructed space on either side of the door without invading the space used by the door	Ø≥150 cm.	Ø≥120 cm.
Door finishes	Contrasting with the environment	Not defined

PARAMETER	ISO 21542:2011	DBSUA
Maximum admissible force to open and close	F≤25 N (≤65 N if they are fire resistant).	F≤25 N (≤65 N if they are fire resistant).
Design of the handles and pullers	Rounded with no edges that facilitate being used with one single hand or with another part of the body. Visually contrasted.	Not defined
Maximum admissible space between the elements located on the floor.	That allows a secure transit. Measurement not defined.	Ø≥ 1.5 cm.
FURNITURE		
Finishes of the furniture	Visually contrasted. All the corners and borders of the furniture shall be rounded or bevelled off to minimise the risk of injuries caused by knocks	Not defined
Location of the accessible counters	Communicated with an accessible route	Communicated with an accessible route
Tactile Walking Surface Indicators up to the counter	Tactile Walking Surface Indicators can help people with visual impairment to locate the reception counters.	Tactile channelled flooring parallel to the direction, 40 cm wide with an embossing of 3 ±1 mm inside and 5 ±1 mm outside.
Minimum width of the work plane	100 cm	80 cm
Top height of the work plane in the lower area	74-80 cm	≥85 cm
Lower unobstructed space	Height: 70 cm, depth on the upper part: 20 cm and toe clearance: 30 cm high and 60 cm deep.	70 x 80 x 50 cm (height x width x depth).

PARAMETER	ISO 21542:2011	DBSUA
Space for people to write while standing up	Height 95-110 cm, width 100 cm	Not defined
Magnetic loop at information desks	Required and with the standard symbol	Compulsory only if there is an intercommunication system.
Counter illumination	200 lux inside and 350-450 lux on the worktop.	100 lux
Signage of accessible elements and services	All the adaptations, adjustments and accessibility services shall be duly identified.	With the purpose of facilitating the access and independent, non-discriminatory and safe use of the buildings, the following elements shall be signalled: Entrances to accessible buildings, accessible routes, accessible lifting platforms, designated accessible parking spaces, areas equipped with a magnetic loop and other adapted systems for people with hearing impairment, accessible parking spaces, accessible hygiene services (accessible bathroom, shower, dressing room cubicle). Accessible routes that link the street with the accessible call points or, lacking thereof, with accessible information desks.

PARAMETER	ISO 21542:2011	DBSUA
Characteristics of the accessibility signage: International Accessibility Symbol	The International Accessibility Symbol ISO 7001, PI PF 006 and UNE 41501 are also acceptable in standard colours. The background, graphic symbols and logotypes should have a matte or low gloss finish. Dimensions, location of the touch signage and other characteristics are gathered in chapters 39, 40 and 41.	International Symbol of Accessibility - UNE 41501 Standard.
Signage for toilets and changing rooms	Standard symbols for bathrooms pursuant to the ISO 7001 PI PF 003, PI PF 005 and PI PF 004 standard.	Standardised embossed gender pictograms with chromatic contrast at a height between 0.80 and 1.20 m, beside the frame, on the right-hand side door and seen while entering


REPSOL