

Summary: Electric vehicle accessible charging standard PAS 1899

Energy Saving Trust

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Background

In October 2022, an accessible electric vehicle (EV) charging standard was launched to support the rollout of accessible and inclusive public charging infrastructure.

The standard, known as PAS 1899:2022, has been produced by the British Standards Institution (BSI) and co-sponsored by Motability, the national disability charity, and the UK Government's Office for Zero Emission Vehicles (OZEV).

PAS 1899 sets out the minimum specification for an accessible public chargepoint, by providing designers, procurers, and installers with detailed requirements and recommendations on how to provide accessible public charging infrastructure for EVs.

It is predicted that by 2035, the number of disabled drivers or passengers will increase to 2.7 million. With the sales of new petrol and diesel vehicles due to end in 2030, it is essential that the transition to electric vehicles (EVs) is accessible to all. The provision of clear standards is expected to improve the experiences of disabled people using public chargepoints and to ensure the transition to zero emission transport is inclusive for all.

This document summarises the key points in the standards for chargepoint procurers, such as local authorities.

Read the [full PAS 1899](#) here.

Instruction for using PAS 1899

The ultimate onus of responsibility for conforming to the requirements within PAS 1899 is on the procurer of public chargepoints.

The procurer can comprise a range of different bodies including the chargepoint operator, the service provider, a local authority, or other landowners or leaseholders such as a car park owner.

The PAS has three main focus areas:

- Core standard for minimum requirements for accessibility for all public chargepoints.
- Supplementary best practice accessibility guidance for all public chargepoints.
- Best practice accessibility guidance for chargepoints installed adjacent to designated accessible parking bays which differentiates between the levels of accessibility which can be achieved depending on the chargepoint location (i.e., rapid hub, off-street and on-street).

Minimum requirements

Physical chargepoint design (Clause 5)

The physical design of a chargepoint and its components should take into account the range of needs of users, including disabled people, in order to achieve inclusive design. Key considerations for clause 5 include:

- The **heights of the various components** of public chargepoints (such as the height of the chargepoint socket-outlet, charging cable, screen and/or visual interface height and the height of a payment terminal) should be suitable for all users. (pg.8)
- The **usability and manoeuvrability of chargepoint cables** are amongst the biggest barriers facing disabled people. Aspects to be addressed include the weight of the cable and cable management systems, the length of the cable and associated distance from the chargepoint to the vehicle, and the cable connector grip and visibility. (pg.11-14)
- The **physical connection of a chargepoint** should be operable without excessive force for a wider range of users. (pg.14)
- The content and composition of any **screen or visual interface** on a public chargepoint should be designed to ensure it is accessible for a range of users. Aspects to address include screen orientation, screen light and colour, font size, interactive features and considerations for language and instructions. (pg.15-17)

Chargepoint placement (Clause 6)

The placement and positioning of a public chargepoint has a large impact on the accessibility of the chargepoint. Key considerations for clause 6 include:

- For all public chargepoints, the **positioning and orientation of the chargepoint** shall be such that its components can be easily viewed, reached, and operated from a seated or fully standing position. (pg.18-19)
- The **provision of a smooth and stable ground surface** type below and surrounding public chargepoints shall be uniform to allow a user full and easy access from the chargepoint to plugging in their vehicle. (pg.20)
- Where possible, chargepoints should be installed without any **low-level obstacles** in the vicinity of the chargepoint and where there is no need for **reach** (pg.20-21)
- Should **bollards and/or impact protection barriers** be installed adjacent to chargepoints, it is crucial that the placement of the bollards and/or impact protection barriers does not obstruct the points of access to chargepoint components. (pg. 21-23)

Streetscape and public realm around the chargepoint (Clause 7)

The built environment surrounding a public chargepoint should be accessible to all users. Aspects such as obstructive street furniture, inability to approach a chargepoint at the intended level, and the distance between chargepoints and amenities, can impede the accessibility of chargepoints for disabled people and other users. Key considerations for clause 7 include:

- **Street furniture** (i.e., any infrastructure installed on a street or in a built environment, such as streetlights, electrical feeder pillars and post-boxes) should not present obstacles to disabled people. (pg.24-25)
- Where feasible, **provision of level access** to a public chargepoint is considered the most accessible installation for public chargepoints. Where a **dropped kerb** is necessary, the dropped kerb should preferably be provided adjacent to a parking bay and suitable marking and protection should be provided. (pg.25-26)

- Due consideration should be given to the situation and installation of public chargepoints to ensure they are in prominent and visible locations in **close proximity to amenities or a venue** to improve accessibility of amenities or a venue from public chargepoints. (pg. 26-27)
- For public chargepoints which disabled people are unable to effectively use and operate, continuous **provision of additional assistance** must be available. (pg.27)

Digital platforms and information provision for chargepoints (Clause 8)

Operation of and interaction with public chargepoints is often carried out via remote digital platforms such as smartphone applications. It is therefore essential that these are designed in consideration of accessibility for disabled people and other users. Key considerations for clause 8 include:

- Operation of and interaction with public chargepoints shall be **supported by a remote digital platform**, including all necessary back office operational requirements. (pg.29)
- The **content and composition** of remote digital platforms used for public chargepoint operation and usage shall be designed such that the content is accessible to a broad range of user, including font, size, colours, contrast and layout. (pg.29)
- **Provision of data and information** regarding the locations and characteristics of public chargepoints shall be provided in an openly available format to consumers to assist disabled people in knowing in advance where they are able to charge their vehicles, thereby giving greater confidence to disabled drivers to plan their journeys in advance. (pg.29)

Supplementary best practice accessibility guidance

Annex A - Establishing an inclusive and safe environment around public chargepoints

There are additional considerations that can assist in ensuring that the environment surrounding chargepoints can be more inclusive for disabled people and can improve the usability of the chargepoints and the safety of the surrounding environment.

The best practice provided within Annex A can fall outside the direct responsibility of the procurer of public chargepoints; however, it is strongly recommended that the procurer of public chargepoints engages with relevant bodies to ensure an inclusive environment is established around public chargepoints.

Considerations include:

- **Provision of sufficient lighting** can contribute to providing an inclusive, safe, and secure environment for all users including disabled people. (pg.31)
- **Provision of security cameras** in the vicinity of public chargepoints can help establish an inclusive, secure, and safe environment for all users. (pg.32)
- **Provision of signage** indicating where public chargepoints are located, once public chargepoints are installed in an accessible manner, is desirable to ensure they are easily identifiable to disabled people and other users. (pg.32)
- **Provision of positive forms of feedback** (e.g., tactile, audible, or visual feedback such as lighting) to indicate when the various aspects of the charging process have initiated or concluded, or when payment has occurred. (pg.33)

Annex B - Designated accessible parking bays – off-street chargepoints

Public chargepoints in off-street locations specifically installed adjacent to designated accessible parking bays can benefit from implementing best practice accessibility guidance to enable access to the chargepoints by disabled people, along with establishing a more inclusive environment around chargepoints.

Considerations include:

- **Placement of chargepoints and the surrounding built environment.**
 - Surface gradient (pg.34)
 - Reach distance and space in front of public chargepoints (pg.35)
 - Space around vehicles, as well as around chargepoints and points of access to chargepoint components (pg.35-36)
 - Placement of wheel stops (pg.37)
 - Distance from parking bay to a dropped kerb or level access (pg.38)
 - Considerations for larger vehicles such as wheelchair accessible vehicles or minibuses equipped with side or rear access (pg.38-39)
- **Establishing an inclusive environment.**
 - Overhead weatherproofing at service areas (pg.39)
 - Road markings (pg.39)
 - Signage (pg.40)
 - Distance between parking bays and amenities or a venue (pg.40)

Annex C - Designated accessible parking bays – on-street chargepoints

Accessibility of on-street public chargepoints situated adjacent to accessible parking bays can be more difficult than for off-street chargepoints due to highly variable streetscapes and the presence of existing

street furniture and access to footways. This additional guidance can help the primary users of these chargepoints access the chargepoints and the surrounding built environment with greater ease.

Considerations include:

- **Placement of chargepoints and the surrounding built environment.**
 - Surface gradient (pg.41)
 - Reach distance and space in front of public chargepoints (pg.42)
 - Space around vehicles, as well as around chargepoints and points of access to chargepoint components (pg.42-45)
 - Distance from on-street chargepoints to a dropped kerb or level access (pg.45)
- **Establishing an inclusive environment.**
 - Road markings (pg.46)
 - Distance between on-street chargepoints and amenities or a venue (pg.46)

Annex D – Wireless/inductive chargepoints

Where wireless/inductive chargepoints are placed and installed in a public location, the placement, installation, and information provision of these public wireless/inductive chargepoints shall follow the requirements within Clause 5, Clause 6, Clause 7, and Clause 8. (pg.47)

Annex E - Checklists

Annex E provides checklists summarising the minimum requirements for accessibility and the good practice accessibility guidance, as outlined throughout the PAS, to support users of the PAS in implementing its requirements and good practice.

There are different checklists provided, as follows:

- E.1 - Checklist for core standard for minimum requirements for accessibility for all public chargepoints. (pg.48)
- E.2 - Checklist for supplementary best practice accessibility guidance for all public chargepoints. (pg.56)
- E.3 - Checklist for good practice accessibility guidance for chargepoints installed adjacent to off-street designated accessible parking bays. (pg.58)
- E.4 - Checklist for good practice accessibility guidance for chargepoints installed adjacent to on-street designated accessible parking bays. (pg.62)
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Annex F - Determining forces required for charging cable manoeuvrability

Prominent issues facing disabled people include the weight of the cable, the length of chargepoint cables, the stiffness of chargepoint cables, and the ease of holding, manoeuvring, and positioning a cable.

Annex F outlines the testing method that should be used to assess when disabled users might have difficulty in operating chargepoint cables under excessive forces through single-handed use and whether charging cables can be considered accessible for all chargepoint users.

The twisting, tilting and rotational forces required to operate a charging cable and to connect it to a vehicle socket-outlet should be assessed so that the resultant forces do not exceed the maximum force requirements outlined in Clause 5.