



Department  
for Transport

# Rail Vehicle Accessibility: Exemption application Glasgow Subway

**Moving Britain Ahead**

The Department for Transport has actively considered the needs of blind and partially sighted people in accessing this document. The text will be made available in full on the Department's website. The text may be freely downloaded and translated by individuals or organisations for conversion into other accessible formats. If you have other needs in this regard please contact the Department.

Department for Transport  
Great Minster House  
33 Horseferry Road  
London SW1P 4DR  
Telephone 0300 330 3000  
Website [www.gov.uk/dft](http://www.gov.uk/dft)  
General enquiries: <https://forms.dft.gov.uk>



© Crown copyright 2019

Copyright in the typographical arrangement rests with the Crown.

You may re-use this information (not including logos or third-party material) free of charge in any format or medium, under the terms of the Open Government Licence. To view this licence, visit <http://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/> or write to the Information Policy Team, The National Archives, Kew, London TW9 4DU, or e-mail: [psi@nationalarchives.gsi.gov.uk](mailto:psi@nationalarchives.gsi.gov.uk)

Where we have identified any third-party copyright information you will need to obtain permission from the copyright holders concerned.

# Foreword

The Rail Vehicle Accessibility (Non-Interoperable Rail System) Regulations 2010 (RVAR) set standards for the accessibility features of a rail vehicle operated on particular types of rail systems. The Secretary of State has powers under section 183 of the Equality Act 2010 to allow operators of regulated rail vehicles to continue to operate a vehicle if it does not fully comply with the standards set in the Schedules to these RVAR 2010.

This consultation contains the application from Strathclyde Partnership for Transport for exemption from standards set out in Schedule 1, Part 1 (General Requirements) RVAR 2010 for trains operated on the Glasgow Subway

The consultation period shall run until 31 October 2019. To share your views and comments on the application please contact us at

Rail Vehicle Access: Glasgow Subway

Department for Transport

Great Minster House

33 Horseferry Road

London

SW1P 4DR

Email: [railvehicleaccess@dft.gov.uk](mailto:railvehicleaccess@dft.gov.uk)



Strathclyde Partnership for Transport  
**SPT Glasgow Subway Application for  
RVAR Exemption for Metro Cammell  
Vehicles**

EM-GEN-REP-0008



**Document Properties**

Document Title	SPT Glasgow Subway Application for RVAR Exemption for Metro Cammell Vehicles		
Document No.	EM-GEN-REP-0008		
Classification	Restricted	Review Cycle	N/A

**Issue Record**

A02	23/09/2019	Updated addressing comments from ORR	John Campbell		John Campbell
A01	09/08/2019		John Campbell		John Campbell
Rev.	Date	Reason for Issue	Author	Checker	Approver

**Amendment Record**

Rev.	Section	Description
A02	4	Description added about type of operation and passenger numbers
	7	Clarity provided on staffing of stations and management of the Persons with Reduced Mobility
	8	Clarity provided to wording
	9	Timescales of rolling stock replacement provided
	11	Clarity provided on system management structure
	App 3(1)	LRV values added and photos of rolling stock
	App 6 & 7	Clarity provided on current arrangements for wheelchair users
	App 10(1)	Photo provided of the position of the handrail
	App 10 (4) d	Photo provided of the contrast / visibility of the handrail
	App 11(1)	Photo provided of route map, and clarity on calling pattern of trains
	App 13(3)	Clarity provided on the restriction of height of seating

## RVAR 2010 – Application for Accessibility Standards Exemption

This application form sets out the minimum required information in support of applications for exemption from the accessibility standards prescribed in the schedule to the **Rail Vehicle Accessibility (Non-Interoperable Rail System) Regulations 2010** as prescribed by the **Rail Vehicle Accessibility (Applications for Exemption Orders) Regulations 2010 SI 427/2010: Schedule 1 - Particulars to be provided with applications for exemption orders for rail vehicles**

1	Full name of the applicant	<b><u>Strathclyde Partnership for Transport</u></b>
2	The address of the applicant which, in the case of a company, must be the address of its registered or principal office	131 St Vincent Street Glasgow G2 5JF
3	A description of the rail vehicle to which the application relates, including the—  (i)class number;  (ii)unit number;  (iii)vehicle number;  (iv)name of the manufacturer;  (v)place of manufacture; and  (vi)date the vehicle first brought into use, (unless not yet brought into use);	<p>i) There is no class number of the vehicles on Glasgow Subway, it is a single class fleet, built in the 1970s</p> <p>ii) Unit numbers are not used on Glasgow Subway. Each car of the three car train are individually numbered.</p> <p>iii) All vehicle numbers in the fleet are included in this exemption application. Note that each vehicle number applies to a single car, trains are made up of 3 cars, specifically car numbers:  Power Cars – 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133  Trailer Cars – 201, 202, 203, 204, 205, 206, 207, 208  In total, 32 power cars, 8 trailer cars</p> <p>iv) Metro Cammell</p> <p>v) Birmingham</p> <p>vi) March 1980</p>

<p>4</p>	<p><b>A general description of the services which the rail vehicle is likely to be used to provide and the routes on which it is likely to be operated;</b></p>	<p>Since the introduction of the Metro Cammell fleet in 1980 the same fleet of vehicles have operated solely on the Glasgow Subway network. The network is made up of two adjacent tunnels which cover a distance of 10.5 Km, with 15 stations stretching from Buchanan Street in central Glasgow in the east, out to the west side of Glasgow at Partick / Govan. There is one section (between Govan and Ibrox) where a ramp system allows access from the Subway system up to Broomloan Depot at ground level.</p> <p>The service provided by the Subway is a city centre Metro system, carrying circa 13 million passengers per annum.</p> <p>The only change of fleet size during the last 40 years has been the removal of car number 122 which was scrapped.</p> <p>The operation and network coverage of the fleet will remain the same until the vehicles are retired in the next 3 years as part of the Subway Modernisation Programme.</p>
<p>5</p>	<p><b>The provisions of RVAR from which exemption is sought</b></p>	<p>The detail of the clauses against which the rolling stock is non-compliant, and the reasons, is attached as an Appendix A.</p> <p>The specific clauses from which exemption is sought are:</p> <p><u>Part 1</u></p> <p>Clause 3 (1)          Clause 3 (3)          Clause 3 (5)          Clause 6          Clause 7          Clause 8 (2)          Clause 10 (1)          Clause 10 (4) a          Clause 10 (4) c          Clause 10 (4) d          Clause 10 (6) a</p>


		<p>Clause 10 (6) b          Clause 10 (6) c          Clause 11 (1)          Clause 11 (10)          Clause 13 (3)          Clause 13 (6)          Clause 18          Clause 19          Clause 20          Clause 21</p> <p><u>Part 2</u>          Clause 1          Clause 3</p>
6	<p><b>The technical, economic and operational reasons for the application;</b>  <b>(Please attach any relevant documentation)</b></p>	<p>The current Subway rolling stock is approaching 40 years of service, and the equipment and systems are approaching their end of life.</p> <p>The structural gauge of the vehicles and the design of the rail vehicle preclude any sensible alterations to achieve compliance with RVAR 2010. The only viable approach to achieve compliance is to build new trains. This is being carried out at present as part of the Subway Modernisation project, with timescales outlined in section 10.</p>
7	<p><b>The effect which non-compliance with the provisions referred to in sub-paragraph (e) (box 5) would have on a disabled person's ability to use the rail vehicle;</b></p>	<p>The layout of the Glasgow Subway has strong challenges for those passengers who wish to travel and are unable to utilise stairs.</p> <p>Out of the 15 stations, only two have a lift and the remainder have steps and escalators which need to be negotiated. The current fleet of trains do not have any wheelchair accessible area.</p> <p>In addition, there are strong challenges to provide Operational Procedures which ensure that PRMs are catered for at times when a train has to be evacuated.</p> <p>The current carriage of passengers requires that a person in a wheelchair should have sufficient mobility to be able to stand and climb, or descend stairs, whilst carrying their wheelchair.</p>





		<p>Currently there is no specific passenger assistance team to manage this limitation, however all stations are manned and therefore any passengers who would be unable to self evacuate from a train are advised accordingly and offered advice on how to reach their destination by an alternative means.</p> <p>Reasonable adjustments have been made throughout the system to aid PRM and this has been provided through the specification of suitable materials / aids which were provided as part of the station refurbishment programme. This has included the provision of tactile paving on the platforms, colour contrasting solutions in the stations and the de-cluttering of wayfinding signage.</p> <p>Non-compliance with those clauses referred to in Box 5 will restrict wheelchair users from using the existing rolling stock in the Subway system in line with the current operational procedures (outlined above). There are a number of other issues which SPT are addressing as part of the Modernisation project however the rolling stock is not the key limiting factor. The layout of the tunnels, entrances, space and narrow island platforms all have to be considered when developing a safe journey offering for PRM.</p>
<p>8</p>	<p><b>The measures proposed, if the application is granted, to enable a disabled person to use the rail vehicle;</b></p>	<p>In this application there are no measures which are proposed to enable a disabled person to utilise the existing Subway rail vehicles.</p> <p>The entire fleet will be replaced by 17 trains which are currently being procured and introduced over the next 3 years.</p>


<p>9</p>	<p>The period for which the exemption order is requested to be in force;</p>	<p>April 2020 to June 2022.</p> <p>It is anticipated that the vehicles will commence being retired from operational service prior to this date, however the June 2022 date is the forecast date by which all the existing fleet will have been scrapped.</p>
<p>10</p>	<p>Unless an exemption order is sought for an indefinite period, the proposed timetable of action, before it would cease to be in force, to render the rail vehicle compliant with any RVAR provisions from which it had been exempt;</p>	<p>The new rolling stock for Glasgow Subway has been designed and is currently in production and testing.</p> <p>3 of the 17 trains are already in Glasgow (September 2019) undergoing testing.</p> <p>In 2020 the remainder of the 17 trains will be manufactured and delivered to Glasgow.</p> <p>During 2020, testing will commence on the Subway system which will then result in the introduction of the new stock into passenger service during 2021. This will be carried out on a phased basis, and once certain performance requirements are proven, new trains will be brought into revenue service, and the old rolling stock (those units which are the subject of this exemption application) will be removed from public service.</p> <p>It is anticipated that this transfer will take place by mid 2022, which is therefore the date limit for this exemption.</p>
<p>11</p>	<p>Where prior consultation with the operator of the rail vehicle is required by regulation 3(2) of the Rail Vehicle Accessibility (Applications for Exemption Orders) Regulations 2010, please set out the response of the operator to the consultation</p>	<p>The owner and operator of the Subway rolling stock fleet is Strathclyde Partnership for Transport (SPT). The owner of the transport system is the same as the operator whilst also being responsible for the maintenance of the trains and all infrastructure. This specific consultation is therefore not required.</p>


**APPENDIX A**  
**Specific Details of Clauses Against**  
**Which Concession is Requested**

Specific Clauses from RVAR 2010 Against Which A Concession is Requested:		
Clause	Summary of Clause requirement	Subway current position, and reason for non compliance request
3 (1)	Doorway in the side of a rail vehicle must be indicated clearly by doors which on their exterior contrast with the exterior of the vehicle to each side of the doors	<p>The standard livery on Subway trains is applied to all trains except for two.</p> <p>Dependent on the door position within the livery there are different colours around the door area:</p>  <p>The Light Reflectance Values of the paint are as follows:</p> <ul style="list-style-type: none"> <li>White – 86.3%</li> <li>Orange – 40.3%</li> <li>Light Grey – 37.0%</li> <li>Dark Grey – 13.9%</li> </ul> <p>The predominant eye level contrast is</p>


		<p>between the orange and light grey which gives a contrast of 3.3%</p> <p>Car 101 is a replica of early Subway stock:</p>  <p>Light Grey – 45.8%</p> <p>Maroon – 8.2%</p> <p>Cream – 67.8%</p> <p>The main eye level contrast is between the cream and the grey which gives a contrast of 21.8%.</p> <p>Car 130 has a body which is all light grey</p>  <p>Light Grey – 41.8%</p> <p>Orange – 29.9%</p> <p>This provides a contrast of 11.8%.</p> <p>All LRVs are below 30%.</p>
<p>3 (3)</p>	<p>Each passenger doorway in the side of a rail vehicle must be fitted with an audible warning device which must emit warning sounds in accordance with sub-para (5) inside and outside the vehicle in the proximity of each control device for the doorway or, if there is no such device, adjacent to the doorway.</p>	<p>There is a sounder which is mounted within the rail car, however there is no external device with a sounder, or any control devices for users. Due to there not being an external sounder, the units do not comply with the requirement.</p>

<p>3 (5)</p>	<p>The audible warning device must -</p> <p>(a) Where the unlocking of all passenger doors in the side of a rail vehicle is activated by a member of the operator's staff, emit a distinct sound for a period of not less than 3 seconds commencing when the doors become openable by passengers</p> <p>(b) Emit a different distinct sound to that required by paragraph (a) and, where applicable, para 1 of Part 2 of this Schedule, commencing not less than 3 seconds before the door starts to close.</p>	<p>a) The design of the units mean that there is no sound emitted prior to the opening of the doors – the doors, when operated by the train driver, simply open</p> <p>b) The warning sounder for the closure of the doors does not comply with the requirement to commence not less than 3 seconds before the doors start to close. The current units' sounder sounds just momentarily before the doors close.</p>
<p>6 &amp; 7</p>	<p>If a rail vehicle has a wheelchair space...</p>	<p>The Subway rolling stock does not have any provision for a wheelchair space. Any wheelchair users who are able to stand, fold their wheelchair, and descend and ascend stairs to the platform level are able to travel on the trains, with their wheelchairs folded in the passenger vestibule.</p>
<p>8 (2)</p>	<p>Subject to sub paras (3) and (5), the floor of a vestibule to a passenger doorway in the side of a rail vehicle must contrast with the adjoining floor of the passenger saloon of the vehicle.</p>	<p>Some vehicles comply with this clause, however a high proportion have a uniform flooring from the vestibule into the saloon area. The fleet as a whole are considered not to comply with this requirement.</p>
<p>10 (1)</p>	<p>A handrail must be fitted in the following positions:</p> <p>(a) In every rail vehicle, on the inside as close as practicable to, and on either side of, the passenger doorways in the side of the vehicle, extending vertically from a point not more than 700 mm above the floor to a point not less than 1200 mm above the floor</p>	<p>Handrails are positioned on either side of the entrance doorways but not as close as practicable to the doorway (they are located on the inboard side of the partition which sits either side of the doorway).</p>

		 <p>For position relative to the door, they are deemed non compliant.</p> <p>In addition, the bottom end of the handrail is 800 mm above the floor level and the top of the handrail is 1600 mm above floor level. It is therefore again non-compliant as the bottom of the handrail commences at a point greater than 700 mm above floor level.</p>
10 (4) a	Handrail must have a circular cross section with a diameter of not less than 30 mm and not more than 40 mm.	The handrail on the Subway rolling stock has a diameter of 25 mm.
10 (4) c	The handrail must have a slip resistant surface	The handrail has a brushed / polished steel finish to it and is not slip resistant.
10 (4) d	The handrail must contrast with the parts of the rail vehicle adjacent to the handrail	The handrail is silver, and the colouring of the surrounding area is not sufficiently contrasting to comply with this requirement.

		
<p>10 (6) a</p>	<p>The handrail fitted on the inside of the vehicle above the doorway must have a maximum width, at its major axis, of not less than 30 and not more than 40 mm</p>	<p>The handrail above the entrance doorway has a dimension on its major axis of 28 mm which is below the minimum requirement.</p>
<p>10 (6) b</p>	<p>The handrail fitted on the inside of the vehicle above the doorway must have a minimum width at its minor axis, of not less than 20 mm</p>	<p>The handrail above the entrance doorway has a dimension on its minor axis of 18 mm which is below the minimum width.</p>
<p>10 (6) c</p>	<p>The handrail fitted on the inside of the vehicle above the doorway must provide not less than 40 mm clearance for a passenger's hand between any part of the handrail and any other part of the rail vehicle.</p>	<p>The distance available between the handrail and the vehicle is 33 mm which is below the minimum requirement.</p>
<p>11 (1)</p>	<p>The interior of the vehicle must be fitted with a public address system for audible and visual announcements</p>	<p>The Subway rolling stock has an internal public address system for audible announcements, but there is no facility to provide visual announcements.</p> <p>All trains stop at the 15 stations, in the same order and no stops are missed for any reason. The journeys are therefore predictable.</p> <p>Internally there is a route map displayed at key points within the car:</p>



		
11 (10)	Displays inside a rail vehicle must, when all passengers are seated, be viewable from at least 51% of passenger seats	The Subway rolling stock does not have any visual announcements.
13 (3)	Each priority seat and the space available to its user, must comply with the specification in C1.	C1 requires clear headroom of a min of 1680 mm. This is available in the forward part of the seat, however towards the back of the priority seat, towards the outside of the rail vehicle, this minimum dimension is not available due to the restrictive gauge of the tunnels, and hence the vehicles.
13 (6)	There must be a sign on or near to a priority seat indicating that disabled persons have priority for the use of that seat.	There is no provision of spaces for disabled persons on the Subway. For those which are designated as being Priority Seats, the wording is simply "Priority Seat – Please offer this seat to those less able to stand".
18	For a train consisting of 3 carriages (as the Glasgow Subway units do) it must have at least 2 wheelchair spaces.	The current rolling stock, which will be in service post April 2020, as stated, does not have any provision for wheelchair spaces.
Clauses 19, 20, 21		All non compliant as a result of non compliance against Clause 18.
Pt 2 1	Where opening of passenger doors is activated by a member of the operator's staff, the audible warning device required by clause 3(3) of Part 1 must emit a distinct sound for a period of not less than 3 seconds commencing when the doors begin	The design of the current rolling stock does not have provision for any sounding device to emit a sound prior to the doors being opened. The doors simply open at the command of the train driver. This requirement cannot be complied with.

---

	to operate.	
Pt 2 3	At a passenger doorway in the side of a rail vehicle the edge of the floor along the entrance must be illuminated by a light placed within or immediately adjacent to that edge	The Subway current rolling stock does not have any lighting which specifically illuminates the doorway threshold area.