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Case Ref  
**PRM-IOP-0402**

IN Number  
**UK/60/2022/0009**

11<sup>th</sup> May 2022  
**Contact: Matt Gillen**

Dear Chris

**THE RAILWAYS (INTEROPERABILITY) REGULATIONS 2011, AS AMENDED  
MAIN ROUTEWAY FROM WESTBOURNE PARK TO PUDDING MILL LANE AND  
ABBAY WOOD (INF & SRT REQUIREMENTS)**

I refer to your application for authorisation, originally received on 1<sup>st</sup> April 2022. Following review of your application, I can confirm that ORR grants authorisation under regulation 4(1)(a) of the Railways (Interoperability) Regulations 2011, as amended.

This authorisation is for the main routeway from Westbourne Park to Pudding Mill Lane and Abbey Wood. This authorisation is for placing into service under Infrastructure (INF) and Safety in Railway Tunnels (SRT) requirements. This covers:

- Track;
- Structures (the main tunnels are regarded as uniformly supported and have not been assessed; portal ramps and other complex structures have been assessed against INF TSI);
- Gauging, including platform height and offset for each station (excluding Abbey Wood); and
- Safety in Railway Tunnels (SRT) requirements.

Crossrail, under Regulation 14 of RIR, was granted advanced stage exemptions against the latest NTSN requirements by the Department for Transport on 10<sup>th</sup> March 2021. The project has adopted requirements from the 2014 TSIs, as well as retaining some elements from the 2008 TSIs, where design was already in an advanced stage.

This authorisation is defined by the following limits:

Location	Track	Chainage (m)
<b>Westbourne Park (including turnbacks A/B/C)</b>	Eastbound	-286.65
	Westbound	175.809
<b>Abbey Wood</b>	Eastbound	24,518
	Westbound	25,238
<b>Pudding Mill Lane</b>	Eastbound	14,666
	Westbound	14,840

The restrictions or limitations of use on the structural subsystem are those listed on the UK Declaration of Verification (Reference CRL1-XRL-O7-LRC-CR001-50161, version 01, dated 01/04/2022) and contained in your technical file assessment report (Reference X2228-LLO-O-RGN-CR001-50137, version 03, dated 29/03/2022). As per “Addendum to Approved Body file 137951-TF-GEN-003 INF+SRT ApBo File, Issue 3” (Reference X2228-LLO-O-COL-CR001-50367, dated 10/05/2022), it is confirmed that two of these conditions, relating to verification of gauging evidence and the installation of caged areas at Whitechapel, have now been closed by the ApBo.

**Limitations:**

Traffic Code	Gauge	Axle load [t]	Line speed [km/h]	Usable length of platform [m]
Crossrail	Crossrail-specific gauge	16.5	100	240 (sponsor requirement for track layout) 200 (design capacity at opening)

- The platform height is 1100mm to allow level access boarding.
- **Trains which use eddy current braking systems should not be used on the line unless they have been shown to be compatible with the infrastructure with INF TSI Clause 4.2.6.2.2.(2).**

## Conditions:

Condition	Clause	Requirement
1	SRT (1303/2014) 4.2.1.1.R1	(a) Unauthorised access to technical rooms shall be prevented. (b) Where emergency exits are locked for security purposes, it shall always be possible to open them from inside.  Awaiting final construction evidence from C660 (testing of door alarms at Bond Street)  Completion date: <b>by 14<sup>th</sup> November 2022 (by full APIS for Bond Street Station)</b>
2	SRT (1303/2014) 4.2.1.6.R2	(1) The width of the walkway shall be at least 0.8m. (2) The minimum vertical clearance above the walkway shall be 2.25m.  Walkway width non-compliant at Plumstead Portal westbound.  A risk assessment has been provided covering the period until the end of August 2022. Walkway widths are to be made compliant and accepted by the ApBo.  Completion date: <b>by 31<sup>st</sup> August 2022</b>
3	SRT (1303/2014) 4.2.1.6.R4	(4) Local constrictions caused by obstacles in the escape area shall be avoided. The presence of obstacles shall not reduce the minimum width to less than 0.7m and the length of the obstacle shall not exceed 2m.  Walkway width non-compliant at Plumstead Portal westbound.  A risk assessment has been provided covering the period until the end of August 2022. Walkway widths are to be made compliant and accepted by the ApBo.  Completion date: <b>by 31<sup>st</sup> August 2022</b>

4	SRT (1303/2014) 4.2.1.6.R5	<p>(b) Continuous handrails shall be installed between 0.8m and 1.1m above the walkway providing a route to a safe area.</p> <p>(1) Handrails shall be placed outside the required minimum clearance of the walkway.</p> <p>(2) Handrails shall be angled at 30° to 40° to the longitudinal axis of the tunnel at the entrance to and exit from an obstacle.</p> <p>Handrails installed but non-compliant at:</p> <ul style="list-style-type: none"> <li>• Plumstead Portal</li> <li>• Royal Oak Portal</li> </ul> <p><i>(Note: reference also made to non-compliance at Paddington Station. This has been captured as a condition within the Paddington station authorisation letter and has now been confirmed as closed.)</i></p> <p>A risk assessment has been provided covering the period until the end of August 2022. Handrails are to be made compliant and evidence accepted by the ApBo.</p> <p>Completion date: <b>by 31<sup>st</sup> August 2022</b></p>
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The Infrastructure Safety Assessment Report (Reference X2228-LLO-O-RGN-CR001-50154, issue 2.0, dated 18/03/2022) undertaken by the Assessment Body supports Authorisation for Placing into Service, on the condition that the Tunnel Systems ADC P6-1 regarding the provision of remaining CSM-RA safety compliance evidence is closed prior to the commencement of revenue services on the Elizabeth Line. A Letter of Support from the AsBo for Safety in Railway Tunnels (Reference X2228-LLO-O-RGN-CR001-50154, dated 31/03/2022) has also been provided. No conditions were identified in relation to the SRT scope.

The Declaration of Control of Risk (Reference CRL1-XRL-O7-LRC-CR001-50162, issue 1.0, dated 01/04/2022) notes the condition made within the Infrastructure SAR, requiring closeout before entry into passenger service. The AsBo has confirmed by email (dated 11/05/2022) that they have now received evidence sufficient to close this condition for entry into passenger service at Crossrail Stage 3a.

The DoCoR raises the interference issue discovered from functional witness testing with the London Fire Brigade (LFB) in specific areas within the running tunnels. As per your letter *“Re:Application for Authorisation under Reg. 4(1) of Railways (Interoperability) Regulations 2011, as amended by up to and including (EU Exit) SI 2020 (2020/786)–acceptance by London Fire Brigade of Interim LFEPA solution”*

(Reference CRL1-XRL-O7-COL-CR001-50017, dated 09/05/2022), an interim solution has been implemented, accepted by LFB and relevant witness testing completed. 21 Letters of Acceptance from LFB have been provided as evidence. In addition, we have been provided the acceptance letter from LFB (dated 05/05/2022), which confirms that the system provides a suitable level of performance for LFB use in event of an incident, subject to some ongoing requirements. This solution has only been accepted as an interim solution, and the expectation is that the modifications will be made to the systems to meet LFB's original requirements. This is expected to take up to 18 months to complete. This forms Condition 5 below.

Condition	Requirement
5	<p>An interim solution has been put in place for radio communications used by London Fire Brigade (LFB). This interim solution has been tested and accepted for use by LFB, subject to their stipulated ongoing requirements. This has only been accepted as an interim solution and there is a requirement for the original system to be modified as soon as possible to meet LFB's original requirements.</p> <p>The project entity is required to adhere to LFB's ongoing requirements and make the necessary amendments to the original system to achieve LFB's original requirements.</p>

Completion date: **by November 2023**

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Closure of the above conditions is to be completed by the date specified, confirmed by an appropriate Conformance Assessment Body and reported to ORR.

The infrastructure subsystem(s) authorised by this letter must be operated and maintained in accordance with Regulation 20.

You should be aware that any future modifications to the authorised subsystem may constitute a 'renewal' or an 'upgrade' as defined in Regulation 2. If a project entity, in relation to the project, considers that the modification meets either of these definitions they may apply, in accordance with the provisions of Regulation 13, to the Department for Transport (DfT) for a decision on whether a new authorisation will be required. Should DfT decide that an authorisation is not required they must consult with ORR whether authorisation is required on safety grounds.

As the project entity you are responsible for retaining the technical file, keeping it up to date and making it available to the ORR in accordance with Regulations 18 and 19.

If you are not the owner of the authorised subsystem you shall within 60 days, in accordance with Regulation 19(3), transfer the technical file, certificate of verification and verification declaration to the owner of the subsystem and the owner shall then be regarded as the project entity. If the owner, in accordance with Regulation 19(4),

disposes of their interest in the authorised subsystem, they shall within 60 days of the disposal transfer the technical file, certificate of verification and verification declaration to the person acquiring that interest and that person shall be regarded as the project entity.

Please note that the person who applied for the authorisation shall send particulars to the owner of the infrastructure to enable the owner of the infrastructure to enter the items on the Register of Infrastructure in accordance with Table 1 of Commission Implementing Regulation (EU) 2019/777. This will include such further information as the registration entity may reasonably require set out in the relevant standard.

If you are the operator, may I remind you of the need to have adequate arrangements within your Safety Management System to control the risks associated with this infrastructure subsystem(s).

This decision letter will be published on ORR's website.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Steve Fletcher', with a stylized, cursive script.

**Steve Fletcher**  
**Deputy Director, Engineering & Asset Management**

Cc

Ian Jones	Head of Interoperability, Safety and Standards DfT
Michael Ainsworth	Approved Body Lead for Crossrail, Ricardo Certification
Maya Petkova	Interoperability Manager, Crossrail
Ian Prosser	HM Chief Inspector of Railways, ORR
Pete Gracey	Head of Interoperability and Rail Vehicle Engineering
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