

Guidance Document

G0135 Guidance on Premises Finishes

Issue No.: A2

Issue date: February 2014
Review date: February 2019

MAYOR OF LONDON

 **Documents**
Document Sharing Hub

Contents

1	Purpose	3
2	Scope	3
3	Guidance	3
3.1	Ceilings	3
3.2	Floors	5
3.3	Walls	9
3.4	Roof coverings and finishes	11
3.5	Access Covers	13
3.6	Escalator Floortrays and Floorplates	14
3.7	Cable Management Systems	15
3.8	Station Entrance Matting	17
4	Responsibilities	18
5	Supporting information	19
5.1	Background	19
5.2	Safety considerations	19
5.3	Environmental considerations	19
5.4	Customer considerations	19
5.5	Other information	20
6	References	20
6.1	Person accountable for the document	20
6.2	Document history	20
6.3	Appendix 1	20

This document must not form part of Contractual terms and conditions between London Underground and Suppliers.

Neither London Underground nor Suppliers are bound to provide any of the items or services or follow any processes described in this document unless they are also required to provide them explicitly by other, Contractually binding, documents.

The information within this document must not be used by London Underground or Suppliers to raise or moderate expectations of delivery by Suppliers or London Underground over and above Contractual requirements.

1 Purpose

- 1.1 The purpose of this Guidance Document is to support the delivery of project or maintenance works on assets required to comply with LU Cat 1 standard S1135 Premises - Finishes.
- 1.2 The purpose of this Guidance Document is to assist architects, designers, specifiers and installers to provide a suitable finish for ceilings, floors, walls and roofs for the location it is required. This includes public and non-public areas both for sub-surface and above ground use on all LU premises. It is not to be read as the only solution, but if this guidance is adopted it will be deemed to satisfy LU requirements.
- 1.3 This guide is also applicable to buildings other than stations e.g. depots, staff accommodation buildings, control centres and remote equipment rooms etc.

2 Scope

- 2.1 This Guidance applies to finishes for ceilings, floors, walls and roofs in all new and modified London Underground (LU) premises.
- 2.2 The scope of this document excludes the structural elements upon which the finishes are “applied”, although it does include the fixings.
- 2.3 Finishes in public areas of stations should comply with the LU cat 1 standard S1351 Station Decor Design and guidance available via the LU Design Management pages. Finishes in Operational staff accommodation should comply with G-371C Operational Staff Accommodation - Design Guidance Document.
- 2.4 Surface coatings are addressed separately in G0230 Good Practice Guide for the Application of Surface Coatings to Premises.

3 Guidance

3.1 Ceilings

- 3.1.1 Ceiling materials should be selected to be appropriate to the particular function and constraints imposed on each space. Consideration should be given to the degree of usage, and the resultant requirements for durability, cleanability, acoustic properties, public safety and fire requirements.
- 3.1.2 The installation of the ceiling system should not compromise the minimum height requirements as defined in S1371 Station planning.
- 3.1.3 Where the installation of the ceiling conceals any asset, or part thereof, that requires regular inspection or maintenance, adequate access should be provided for efficient inspection and maintenance.
- 3.1.4 At many stations, ceilings, principally in ticket halls, may be lower than in other building types due to their location beneath streets or in basements of non-LU buildings and therefore, if not sensitively decorated and lit, they can be very oppressive, causing the space to feel unnecessarily claustrophobic. Every opportunity of introducing natural daylight by roof lights, light wells, atria or borrowed light should be taken.
- 3.1.5 There are three primary ceiling treatments:
 - a) Those where the soffit is left fairface
 - b) Where the finish is directly applied to the structure

- c) False suspended ceiling (in this case there is usually a void above which can vary in depth and which may be considered as a fire compartment).
- 3.1.6 **Fair-Face Soffits** – These can appear fine if designed to be left fair-face and quality control is rigorously enforced both throughout design and construction. Services – cables and trunking – should not be fixed to fair-face finishes and location of lights, illuminated signs, etc. and power supplies to them must be sensitively designed and installed.
- 3.1.6.1 Structure, such as brick or concrete, which is to be left as a fair-face finish may, in certain circumstances, be painted with water-based paints or with an approved clear sealant to improve cleanability and resistance to graffiti. Unpainted fair-face surfaces should be periodically cleaned and only painted as a last resort.
- 3.1.7 **Applied finishes to soffits** – The most usual finish in these circumstances is plaster. This can be floated to a fine finish, covering any irregularities. Plaster finishes usually have a paint finish applied to give colour. This should generally be white or of a light colour and tone to maximise light reflectance.
- 3.1.7.1 Other colours can be applied to the soffits of high ceilings if the character of the space suggests it, for example if the ceiling is divided into bays. Features such as cornices can be highlighted in an accent colour to provide interest and to assist in delineating areas or detailing.
- 3.1.7.2 Textured finishes can disguise surface imperfections but they are not recommended as they collect dirt and are difficult to clean. Rather than trying to disguise them, the imperfections should be cut out and the affected area re-rendered or re-plastered prior to the application of a new finish. A smooth plaster is relatively easily repaired and redecorated if damaged. Water based paints should be used.
- 3.1.8 **Suspended Ceilings** – There are two types of suspended ceiling – “open” and “closed”.
- 3.1.8.1 **Open type** – the ceiling grids are suspended to provide a visual stop. Various forms are available and they are usually in the form of “egg crate” or rows of slats with voids between, which may be used to accommodate lighting, PA speakers, sign suspension etc. Egg-crate ceilings are usually of a composite material and therefore prohibited from use in the Underground. Vitreous enamel slats, while acceptable for fire resistance and generally reasonably hard wearing, often mark badly and are prone to damage from contractors maintaining lighting or other services.
- 3.1.8.2 An advantage of the open ceiling is that no compartmentation for fire is necessary, the void above being regarded as part of the overall volume of the space. While the visual appearance can be acceptable in some circumstances, the plethora of services above the ceiling can often be seen due to the amount of reflected light, destroying the desired effect. Cleaning above an open ceiling is difficult, in all probability requiring removal of sections to permit access, with consequent risk of damage during removal and when being reinstated. This type of ceiling is therefore not generally specified.
- 3.1.8.3 **Closed type** – this type of ceiling is generally preferred. Traditionally the two most common materials have been Vitrified Enamel (VE) panelling and plasterboard however many proprietary systems are now available. Non-combustible materials must be used for false ceilings and with a closed ceiling system, as the void can be become a flue for the spread of fire, the void must be sub-divided into compartments with all service ducts fitted with fire dampers.
- 3.1.8.4 Services are invariably located in the spaces above false ceilings. Access must be provided to these services and also to permit inspection of the structure above. In public areas e.g. ticket halls and passageways where continuous access may be required, principal runs are taken round the perimeter. Where access to services is

required across such spaces, the access points must be designed to blend with the rest of the ceiling or be detailed in such a way as to become part of the overall design.

- 3.1.8.5 VE panels, although expensive, can provide a quality self finished ceiling. Lighting, Public Address (PA) speakers, alarms, etc. can be accommodated if designed in at an early stage. Similarly, access panels can be accommodated, being hinged down from the supporting grid. Durable supporting framework is essential along with the supporting structure. "Thin gauge" VE sheeting can be used to line platform, passageway and in escalator shafts. These sheets can be cut to size and retained in "top-hat" sections preformed to the tunnels' geometry. These can be colour matched to the sheeting (white or off-white is recommended) or contrasted, depending on the effect required. These ceilings are relatively inexpensive and quick to install, are easily cleaned and easy to replace if damaged. A feature of VE ceiling panels that needs to be considered is the reflectivity. Usually this design feature is of inherent use but, on occasion, it can lead to "flare" or "bounce of light", and this would be unacceptable.
- 3.1.8.6 Plasterboard can be used either in panel form or with a plaster skim-coat as a homogeneous finish for decoration. A supporting grid is suspended from the structure and access panels can be fitted of the same material fitted with suitable fixings to allow easy removal. Drop in (loose) panels are not permitted as they would compromise the fire integrity of the ceiling. Some of these panels can be supplied self-finished but do not have the longevity of VE panels and in due course require decoration to maintain its appearance.
- 3.1.8.7 Another material for a panel system is the use of "Superlux" and is extensively used throughout the Underground but requires frequent decoration to maintain its appearance. It can be easily damaged and is not easy cleaned hence its use should be limited.
- 3.1.8.8 National Building Specification (NBS) clauses relevant to ceilings are:
- a) K10 Plasterboard dry linings/partitions/ceilings
 - b) K40 Demountable suspended ceilings
 - c) K45 Suspended ceiling system alterations
 - d) M20 Plastered/Rendered/Roughcast Coatings

3.2 Floors

- 3.2.1 This section defines the requirements for the design and performance of flooring and the selection of appropriate flooring materials and substrates within station and premises owned by London Underground (LU), to achieve flooring that is safe and aesthetically pleasing; balancing cost, durability and cleanability, maintainability and ease of replacement. It also defines requirements for maintaining the flooring in an acceptable condition.
- 3.2.2 This guidance sets out the requirements for flooring which must be firm, safe to walk on, free of trip hazards, meet the slip resistance requirements and present a clean and aesthetically acceptable environment to passengers and staff in accordance with LU Cat 1 standard S1135 Premises - Finishes.
- 3.2.3 Flooring in public areas is subjected to:
- a) high density foot traffic
 - b) walking at above average speed
 - c) affected by unpredictable wetting (seepage, spillages, leaks and body fluids)

- d) often difficult to maintain in an acceptable condition due to inadequate provision for accessing the appropriate cleaning equipment.
- 3.2.4 Further guidance on flooring is given in CIRIA report number 184 'Screeds, flooring and finishes – Selection, construction, testing and maintenance' and CIRIA publication C652 Safer surfaces to Walk on - reducing the risk of slipping (Note that there is an on-line update to this guidance available both on the Construction Industry Research and Information Association (CIRIA) and Rail Safety & Standards Board Ltd (RSSB) websites).
- 3.2.5 An appropriate cleaning regime for maintaining the flooring to the standard required in this document should be developed early in the design. The provision of cleaning equipment rooms, storage space, access and service requirements to those rooms may all fundamentally affect building designs.
- 3.2.6 The design and use of flooring materials used shall be appropriate to the particular function and constraints imposed on each space and the degree of usage. Consideration shall be given but not be limited to:
- a) the characteristics and suitability of the structural element and sub-floor upon which the flooring is to be laid;
 - b) loading, durability and resistance to wear and impact;
 - c) fire characteristics;
 - d) slip resistance (Note: S1135 Attachment 2 - Risk Model – Hard & Resilient Flooring Slip Resistance)
 - e) environmental conditions, frost, weather resistance and drainage;
 - f) access of cleaning equipment;
 - g) whole life cost;
 - h) stain and graffiti resistance, and cleanability and appearance both new and in service;
 - i) maintainability and cleanability
 - j) asset management
 - k) LRV for the visually impaired
 - l) movement joints in floors
 - m) consideration to mortars, adhesives & grouts
- 3.2.7 Flooring to public areas should be designed with reference to corporate colour requirements and, where appropriate, should:
- a) provide a colour contrast between floor/ramp finishes and walls to assist the visually impaired;
 - b) not be patterned as per S1135;
 - c) for floor tiles be laid to a 300mm module to facilitate replacement, with exception of corduroys and tactiles which are usually 400mm modules;
 - d) harmonise with the design of any adjacent areas.
- 3.2.8 Flooring in public areas should comply with testing requirements for slip resistance, graffiti and cleanability defined in Appendix 1.
- 3.2.9 **Preferred Specifications:**
- 3.2.9.1 Ceramic and vitrified clay tiles should be designed and installed in accordance with NBS clause M40. This flooring may be used in most public and non public areas.
- Note:** Where appropriate refer to JNP Work Instruction EI-001 'ceramic floor tile installation', a current JNP work instruction for ceramic flooring.
- 3.2.9.2 Terrazzo tile and slab flooring should be designed and installed in accordance with NBS clause M41 and may be used in most public areas.

- 3.2.9.3 Natural stone flooring should be designed and installed in accordance with NBS clause M40 and may be used in most public areas.
- 3.2.9.4 Clay or silicate brick paving should be designed and installed in accordance with NBS clause Q25 and may be used in most public areas.
- 3.2.9.5 Concrete block paving should be designed and installed in accordance with NBS clauses M40 and Q25 and may be used in most public areas.
- 3.2.9.6 Precast concrete paving slabs should be designed and installed in accordance with NBS clauses M40 and may be used in most public areas, generally platforms and ticket halls at most surface locations.
- 3.2.9.7 Sheet and tile flooring should be designed and installed in accordance with NBS clause M50 and may be used in most non public areas e.g. ticket office suites, and staff areas.
- 3.2.9.8 Textile floor coverings should be designed and installed in accordance with NBS clause M50 and may be used in most non public areas. Note: Where required an appropriate underlay shall be selected with reference to BS 5808.
- 3.2.9.9 Power floated structural concrete should be designed and installed in accordance with NBS clause M40 and screeded finishes to be in accordance with NBS clause M10. These floors may be installed only where use is considered to be low or where there is no requirement for dust prevention and water resistance. A flexible seamless coating shall be applied to the concrete to seal the surface and may be used in most non public areas e.g. equipment rooms.
- 3.2.9.10 High strength concrete toppings, granolithic and direct finished concrete slabs should be designed and installed in accordance with NBS clause M10 and may be used in most public and non public areas.
- 3.2.9.11 Hydraulically pressed precast concrete paving should be designed and installed in accordance with NBS clause M40 and may be used in most public areas.
- 3.2.9.12 Mastic asphalt flooring should be designed and installed in accordance with NBS clause M11 and may be used in most public areas e.g. platforms at surface stations.
- 3.2.9.13 Resin flooring should be designed and installed in accordance with NBS clause M12 and may be used in most public and non public areas.
- 3.2.9.14 The design and installation of flooring that requires electrostatic discharge properties should comply with the limits laid down in BS EN 100015. For the static propensity of textile floor covering reference shall be made to DD 68 – BSI standard withdrawn.
- 3.2.9.15 Where flooring is likely to be soiled with oil and grease, consideration should be given to the provision of raised metal flooring in accordance with BS 5395: Part 3. This