





UCL ESTATES & FIRE STANDARD - GENERAL PERFORMANCE FOR SITE HOARDING AND CONTRACTOR CABINS

UCL general hoardings details - what you need to know:

 Prohibited	<p>Construction sites, ancillary storage areas, general waste areas, and portable cabins can all be significant fire hazards. This can have a bearing on fire within a building, as well as an external fire spreading into a building.</p> <p>The following conditions are therefore prohibited:</p> <ul style="list-style-type: none"> • Unseparated construction site internally (<i>i.e. a construction site that is not separated from UCL department areas or means of escape, such as corridors or staircases</i>). • Unseparated external construction site that is located near to a UCL building that has openings on a façade at a distance of less than six metres. • Unseparated external waste or store areas that are located at near to a UCL building that has openings on a façade at a distance of less than six metres. • Unprotected cabin or temporary accommodation in proximity to a UCL building.
 Acceptable	<p>*Proportionality - UCL will require protection proportional to the risk. The degree of proportionality needs to be determined at RIBA Stage 3 in conjunction with any 'fire safety and logistical constraints' identified, the agreed constraints outcome then included in tender enquires to ensure that all costs and requirements can be tendered for;</p> <p>Smaller works - for example painting & decorating, minor maintenance tasks etc. may not need to be fully separated by fire-resisting construction to protect UCL staff, students & visitors, but will be required to demonstrate through comprehensive Risk Assessment & Method Statement (RAMS) and a phasing programme that clear separation of activities from means of escape etc. is maintained at all times.</p>

Note - See Table 1 below for further guidance on the minimum fire separation ratings required.

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1.0. INTRODUCTION OBJECTIVES FOR HOARDING STANDARDS

This document identifies specific requirements for fire rating, material, visual impact and other considerations for hoardings based on a risk-based approach, to ensure correct design, installation and maintenance.

- Consistent and safe use of hoardings and branding around project sites will create secure compounds whilst reducing the visual impact of the works on students, staff and the public, using appropriate branding, as well as providing the opportunity for safety and way finding signage;
- All UCL Project Officers (UPOs) and Project Managers (PMs) must take account of these Standards when putting together project documentation or entering into contracts;
- UCL Estates is responsible for the design, deployment, maintenance and inspection of site boundary hoardings;
- The Contractor is responsible for the design, deployment, maintenance and inspection of all hoardings internal to the construction site or works area.
- This document identifies specific requirements for fire rating, material, visual impact and other considerations for hoardings based on a risk-based approach, to ensure correct design, installation and maintenance.
- All hoarding and fence lines are classified as temporary works and need to adhere to an agreed temporary works design produced by a competent person;
- This document outlines the strategy and notional information that will be required to facilitate UCL hoarding and temporary fencing;

2.0 HOARDING

All proposals for hoarding and skip locations must be approved by the UCL fire safety team (fire@ucl.ac.uk).

All hoarding must be fit for purpose and consideration must be given to each individual site requirement, as the conditions for each scenario will be unique. It is imperative that each hoarding or gate is designed by a temporary works engineer and checked to 'Category One' in accordance with temporary works procedure.

2.1. **External Site Boundary Hoardings** - site boundary hoarding will be typically constructed of a timber frame using proprietary panels with bespoke restraints. Foundation systems will vary dependent on the location and internal requirements and these will be identified in the temporary works design brief.

- UCL Estates will be ultimately responsible for the design, installation, maintenance, relocation and subsequent demobilisation of all external site boundary hoardings. They will ensure designs are prepared and that inspections and maintenance is carried out to an agreed regime.
- Timber facing panels must be 'fair faced' and be of such material that is with the visual effect that UCL has for its construction sites and additionally be capable of supporting branding in the form of aluminium or dibond sheets that can be applied and remain for a pre-determined period.
- All timber hoardings are to be painted in the UCL branded colour of '**Stone**' (*pantone 7527*). All hoardings are to incorporate fixed wooden 'header' and 'kicker' trimming panels (150mm vertical measurement) – painted to a good quality finish in 'Stone' colour.
- 'Vision' cut out panels, approximately 250mm x 250 mm, are to be provided by the hoarding provider, as and when directed by the UPO or PM or where required for safety reasons.
- No form of advertising is permissible to be affixed to hoardings by main or sub-contractors.
- All designs will be prepared and that inspection and maintenance is carried out to an agreed regime.
- Safety signage (including Fire escape signs) 'site rules', 'site entrance', 'Project Team' contact information, 'Considerate Contractor' or similar signage – must be approved in writing by the UPO/PM.

2.2. **Internal Site Hoardings** - a risk assessment will be undertaken by the contractor against the UCL criteria outlined in this document to determine the material, fire retardant properties and branding requirements.

3.0 TEMPORARY WORKS DESIGNERS BRIEF

During Project Stage Gate 3, a risk assessment of the hoarding requirements will be prepared by the UPO/PM. The following information will be provided to the Contractor during the ITT or the Logistics Partner four weeks prior to mobilisation or change request to enable them to provide the correct hoarding.

- PSO project number;
- Site Plan showing dimensioned extent of all internal and external hoarding and any change in levels;
- All elements of the hoarding must comply e.g. scaff wrap tags should be constructed of the appropriate level of fire retardant material. Gaps in the hoarding will be considered non-compliant with the fire rating;
- Any specific hoarding material and hoarding type, for example timber, foundation style;
- Height requirements;
- Branding requirements, including colour and use of graphics;
- Locations of any pedestrian or delivery gates including dimensions and type of security devices required;
- Any sensitive surface where foundations or floor or wall fixings may not be suitable;
- Ground survey for services (including depths) or any other restrictions where posts or ground fixings are required, including identifying any adjacent excavations;
- Anticipated period during which the hoarding will be in position and the date proposed to be installed;
- Any other special requirements: vehicle strike protection, crowd loading, vision panels;

4.0. FIRE-RATED HOARDING

4.1. Fire-rated hoardings mitigate fire, spreading from:

- an **internal construction site** - between construction site within an occupied building and the occupants;
- an **exterior construction site** - in close proximity to occupied premises for the safety UCL staff, students & visitors;
- an **exterior construction site** - to separate and protect occupants using adjacent escape routes and circulation areas from construction site;

4.2. Fire spread may be a significant risk due to the contractor's activities and therefore in all cases construction sites are to be fire separated. The following note provides high-level information in relation with the fire

performance required for the provision of site hoardings and contractor’s cabins on the UCL Construction Sites.

- Fire-rating requirement will be based on:
 - use, storage of materials;
 - proximity to adjacent buildings & projects;
 - whether it needs to protect fire escape routes or fire service access;
- Where Herras fencing with fire-retardant wrapping is considered appropriate, the wrapping material should be secured with fire-retardant tags to the same standard as the wrap.
- All plastic hoardings must meet the fire retardant requirement for its use and adhere as close as possible to the UCL branding colour of ‘Stone’.

Table 1 - Overview (See Table 2 for more details):

Location of Hoarding or Cabin	Fire Rating (for exposure from each side separately)	Comments
Internal Location - separating construction or storage areas from occupied areas	*60 minutes (FR60) fire separation required	See more specific details and how to achieve at Table 2 below:
Internal Location - part of a <u>fire fighting shaft</u> (stair, lobby, access corridor)	120 minutes (FR120) fire separation required	
External Location - <u>office use</u> , adjacent to escape routes or other buildings	*30 minutes (FR30) fire separation required	
External Location - <u>storage use</u> , adjacent to other buildings or escape routes	60 minutes (FR60) fire separation required	
External Location SKIPS** - Skips waste removal located adjacent to buildings (unless located greater than 3m from any structure) then must be fire horded between the skip and the building	30 minutes (FR30) fire separation required	
External Location - more than 20m from other buildings, escape routes	No fire separation required	

Notes:

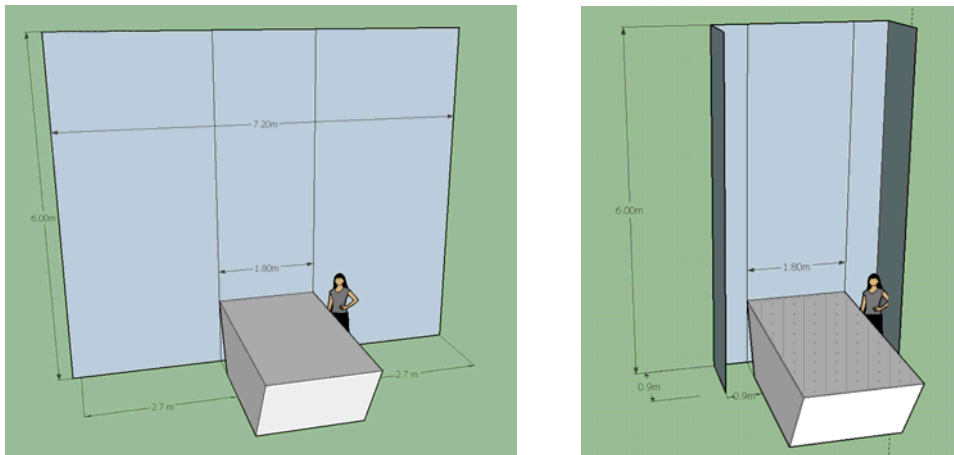
***Proportionality** - generally hoarding provision shall be initially assessed in respect to duration, surrounding activities and nature of the site particularly where the hoardings required, are to be reusable / movable UPVC type, Herras with Monarflex or the timer stone coloured hoarding required to enhance the student, staff and visitor experience. The degree of proportionality needs to be determined at **Stage 3** in conjunction with any ‘fire safety and logistical constraints’ identified, the agreed constraints outcome included in tender enquires.

4.3. **Skips**** - the fire separation of skips and their loading area adjacent to a building or structure suggestions are summarised below:

A potential fire size for a waste fire (3820 kW and 1500kW) based on these fire have provided two alternative protection solutions for waste bins/skips located within 3m of the building envelope..

- (a). **Clear height above skips** - it is calculated for 6.1m³ skips with a fire size of 3820kW that it is feasible to locate waste within 3 meters of a building, if the façade is made of fire resisting construction and there are no windows located up to 6m high. For windows above 6m, it is

recommended to have the windows permanently shut to reduce the risk of hot smoke in the unlikely event of a fire.



Minimum dimensions required for a solid wall to prevent fire spread

- (b). **Covered skip of any size** - if there are windows above the skips that are below 6m, and the skips cannot be located 3 m away from the building, a possible solution is using covered skips or using fire resisting blankets above the skips.



Example of a covered skip.

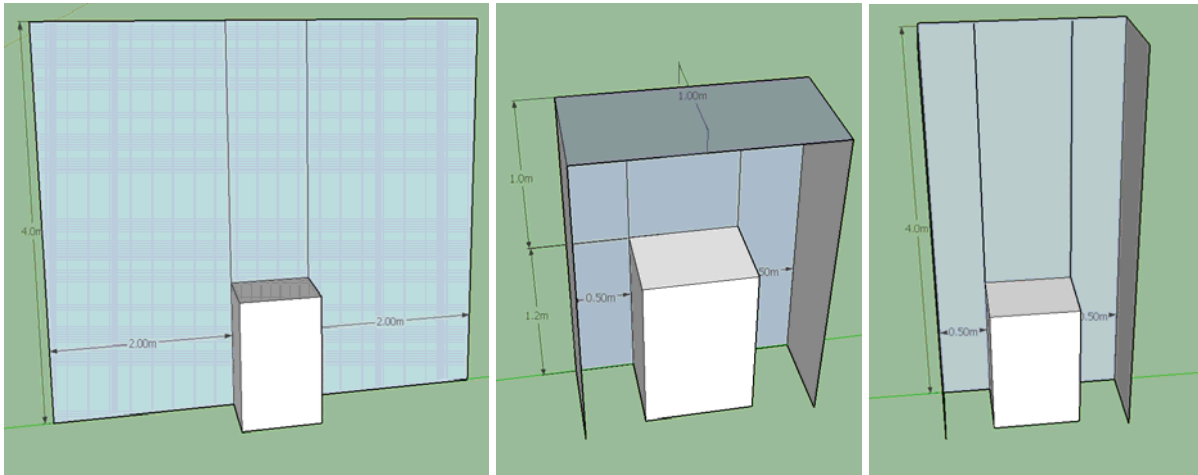
- (c). **Clear height above waste bins** - it was calculated for a 660L bin that it is feasible to locate the bins within 3 meters of a building, if the façade is made of fire resisting construction and there is no windows located up to 4m high. For windows above 4m, it is recommended to have the windows permanently shut to reduce the risk of hot smoke in the unlikely event of a fire. There are various rubbish bin sizes ranging from 90L to 1100L, as illustrated in the image below.

Capacity	Open/Closed	Height	Depth	Width	Approx Bin bags
240l	Closed	1.10m	0.60m	0.75m	3-4
360l	Closed	1.10m	0.60m	0.86m	4-6
660l	Closed	1.34m	0.70m	1.20m	6-8
1100l	Closed	1.37m	0.98m	1.28m	12-15



Illustration of different type of rubbish bins

- (d). **Waste Type and Fire Size** - as a difference from the waste skips, the rubbish bins are normally made of high-density polyethylene, which is a combustible material. Therefore, a fire on a rubbish bin is likely to melt the container and subsequently feeding in the combustion process.



Minimum dimensions required for a solid wall to prevent fire spread

- (e). In accordance with HSG 168 the barrier/covering should be designed to achieve a minimum fire resistance of 30 minutes (stability, integrity and insulation). The insulation criteria can be reduced to 15 minutes fire resistance, by placing reliance on fire service intervention in line with Approved Document B (ADB).

5.0. FIRE RATED TECHNICAL STANDARD & SPECIFICATIONS

- 5.1. Table 2 below, summarises the minimum fire performance required for the site hoarding or cabin provided in the UCL construction site, to provide adequate UCL life safety, property protection and business continuity goals.
- 5.2. Unless specifically identified, any fire rating is to be provided for fire exposure from each side separately.
- **Surface spread of flame:** Class 0, or B-s3-d2 – this needs include any surface treatment such as printing, when tested to BS 796-6 & 7 or BS EN 13501-1. Any materials used overhead of escape routes should be B-s3-do – i.e. not produce flaming droplets.
 - **Fire rating** performance of the hoarding, may require a fire resistance rating in both directions of between 30 and 120 minutes, depending on its location. It may be more efficient to build this as a second skin behind the hoarding where needed, rather than include this into the hoarding specification. Relevant tests would be to BS476 or BS EN 1363.
 - **The material** used for the hoarding should be of limited combustibility – this includes insulation materials. Relevant tests are BS476-11 or Class A2-s3, d2 in accordance with BS EN 13501-1:2007, when tested to BS EN ISO 1182 or BS EN ISO 1716 and BS EN 13823.
- 5.3. The exact specification will depend on where the hoarding is located and if it needs to for example, protect escape routes and fire service access or is needed to prevent fire spread between buildings, which will need to meet the more stringent requirements from a fire-rating point of view.

Other Information:

- 5.4. This note is to be read in context with other fire safety documents for UCL construction sites:
- *'Fire prevention on Construction Sites: The Joint code of Practice on the Protection from Fire on Construction Sites & Buildings Undergoing Renovation', 9th Edition, October 2015 - available from the UCL Fire Safety on request.*
 - *This note does not cover fire safety requirements required for Building Regulations compliance, which may apply to site cabins that are in place and occupied for more than 28 day*

Table 2* - Specific Details:

Location of Hoarding or Cabin	Fire Rating (for exposure from each side separately)	Insulation Material	Surface Spread of Flame
Part of a fire fighting shaft (stair, lobby, access corridor) internal.	120 minutes (stability, integrity, insulation) In accordance with the BS 476-20, BS 476-21, and/ or BS 476-22, the standard performance delivered by the element of construction may also be achieved based on the equivalent rating (measured in minutes) when tested against EN 1363-1:2012 and associated relevant harmonised testing standards.	<p>National Class</p> <p>Non-combustible</p> <p>Tested to BS 476-4: 1970 or BS 476- 11: 1982</p> <p>Limited combustibility</p> <p>By reference to the test method specified in BS 476-11:1982</p>	<p>National Class</p> <p>Class 0</p> <p>to BS 476-4:1970 or, BS 476-11:1982 or, BS 476-6:1989 and BS 476-7:1997</p>
		<p>European Class</p> <p>Non-combustible Classified in accordance to BS 1350-1:2002 and tested to BS EN ISO 1182:2002 and BS EN ISO 1716:2002</p> <p>Limited combustibility</p> <p>Classified in accordance with BS EN 13501-1:2002 and tested to BS EN ISO 1182:2002 or BS EN ISO1716:2002 and BS EN 13823:2002</p>	<p>European Class</p> <p>BS3 d2 to BS EN 13501-1</p> <p>Tested to BS EN ISO 11925-2 and BS EN ISO 13823</p>
Separating construction or storage areas from occupied areas; internal	60 minutes (stability, integrity, insulation) In accordance with the BS 476-20, BS 476-21, and/ or BS 476-22, the standard performance delivered by the element of construction may also be achieved based on the equivalent rating (measured in minutes) when tested against EN 1363-1:2012 and associated relevant harmonised testing standards.	<p>National Class</p> <p>Non-combustible Tested to BS 476-4: 1970 or BS 476- 11: 1982</p> <p>Limited combustibility</p> <p>By reference to the test method specified in BS 476-11:1982</p>	<p>National Class</p> <p>Class 0</p> <p>to BS 476-4:1970 or, BS 476-11:1982 or, BS 476-6:1989 and BS 476-7:1997</p>
		<p>European Class</p> <p>Non-combustible Classified in accordance to BS 1350-1:2002 and tested to BS EN ISO 1182:2002 and BS EN ISO 1716:2002</p> <p>Limited combustibility</p> <p>Classified in accordance with BS EN 13501-1:2002 and tested to BS EN ISO 1182:2002 or BS EN ISO1716:2002 and BS EN 13823:2002</p>	<p>European Class</p> <p>BS3 d2 to BS EN 13501-1</p>
Office use, adjacent to escape routes or other buildings; external	30 minutes (stability, integrity, insulation) In accordance with the BS 476-20, BS 476-21, and/ or BS 476-22, the standard performance delivered by the element of construction may also be achieved based on the equivalent rating (measured in minutes) when tested against EN 1363-1:2012 and associated relevant harmonised testing standards.	<p>National Class</p> <p>Non-combustible Tested to BS 476-4: 1970 or BS 476- 11: 1982</p> <p>Limited combustibility</p> <p>By reference to the test method specified in BS 476-11:1982</p>	<p>National Class</p> <p>Class 0</p> <p>to BS 476-4:1970 or, BS 476-11:1982 or, BS 476-6:1989 & BS 476-7:1997</p>
		<p>European Class</p> <p>Non-combustible Classified in accordance to BS 1350-1:2002 and tested to BS EN ISO 1182:2002 and BS EN ISO 1716:2002</p> <p>Limited combustibility</p> <p>Classified in accordance with BS EN 13501-1:2002 and tested to BS EN ISO 1182:2002 or BS EN ISO1716:2002 and BS EN 13823:2002</p>	<p>European Class</p> <p>B S3 d0 to BS EN 13501-1</p> <p>Note that a 'd0' performance (no flaming droplets) is recommended for materials on escape routes</p>

Table 2 - Specific Details (Cont.):

Location of Hoarding or Cabin	Fire Rating (for exposure from each side separately)	Insulation Material	Surface Spread of Flame
Storage use, adjacent to other buildings or escape routes; external	60 minutes (stability, integrity, insulation) In accordance with the BS 476-20, BS 476-21, and/ or BS 476-22, the standard performance delivered by the element of construction may also be achieved based on the equivalent rating (measured in minutes) when tested against EN 1363-1:2012 and associated relevant harmonised testing standards.	National Class Non-combustible Tested to BS 476-4: 1970 or BS 476- 11: 1982 or Limited combustibility By reference to the test method specified in BS 476-11:1982	National Class Class 0 to BS 476-4:1970 or, BS 476-11:1982 or, BS 476-6:1989 and BS 476-7:1997
		European Class Non-combustible Classified in accordance to BS 1350-1:2002 and tested to BS EN ISO 1182:2002 and BS EN ISO 1716:2002 Limited combustibility Classified in accordance with BS EN 13501-1:2002 and tested to BS EN ISO 1182:2002 or BS EN ISO1716:2002 and BS EN 13823:2002	European Class B S3 d0 to BS EN 13501-
More than 20m from other buildings or escape routes	No requirements	No requirements	No requirements

*Guidance provided by Arup Fire Engineering