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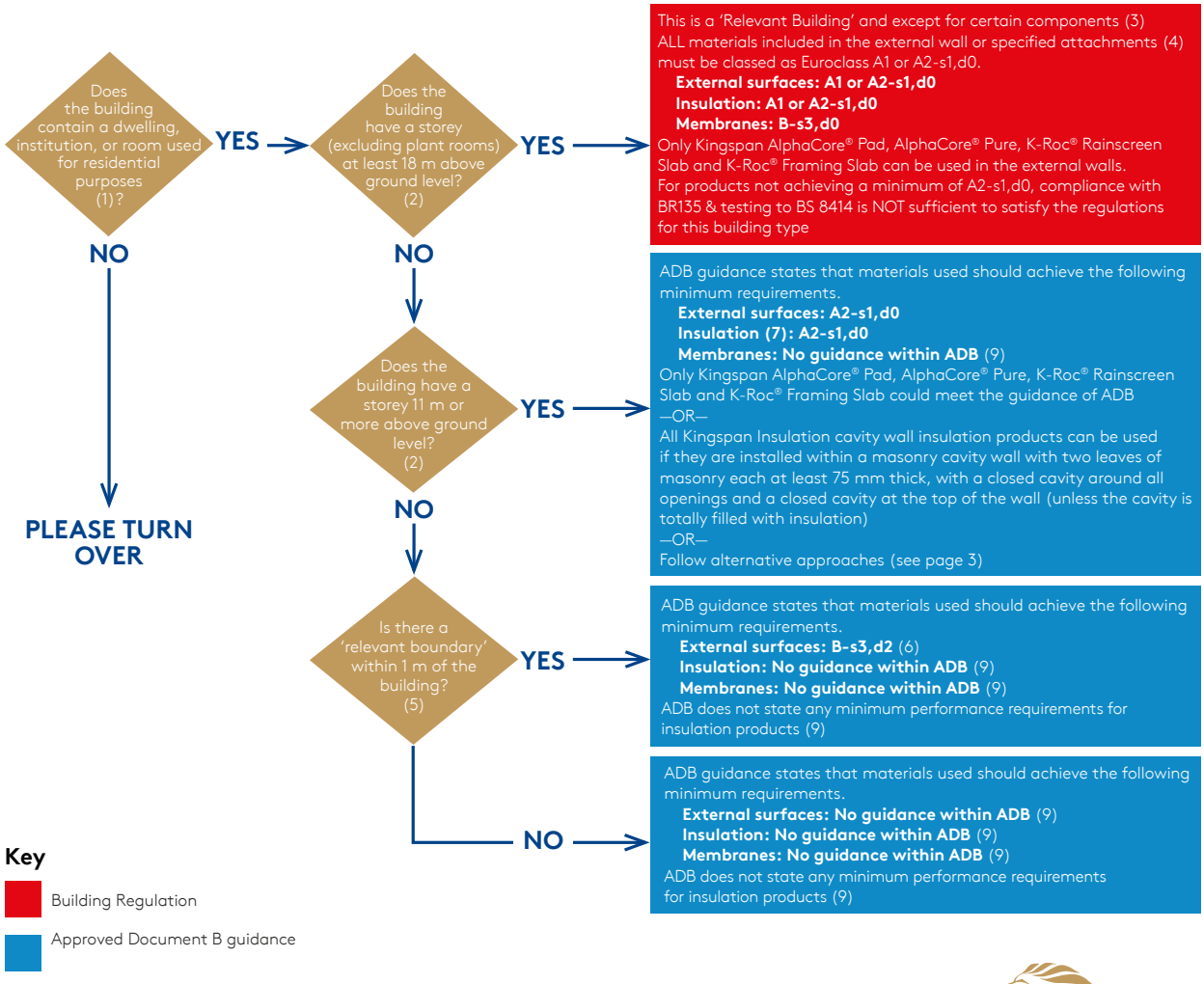
England - fire safety for insulation in external walls

The flowchart is based on the English versions of Approved Document B (ADB) 2019 edition with 2020, 2022 & 2025 amendments, and forthcoming 2026 and 2029 changes. The information presented here is intended only to provide a simplified overview of the fire performance regulations and guidance for external wall systems (including rainscreen and ETICS type cladding, but not curtain walling). The flowchart looks at the reaction to fire requirements; there are other requirements, for example cavity barriers or fire resistance, which should also be considered - please see Approved Document B.

Note that complying with the guidance in the Approved Document does not guarantee that building work complies with the requirements of the regulations. There may also be other ways to comply with the requirements than those described in the Approved Document. The project Principal Designer (during design stages), Principal Contractor (during construction) and relevant consultants (such as Fire Engineers) should be consulted to ensure compliance with the Building Regulations.



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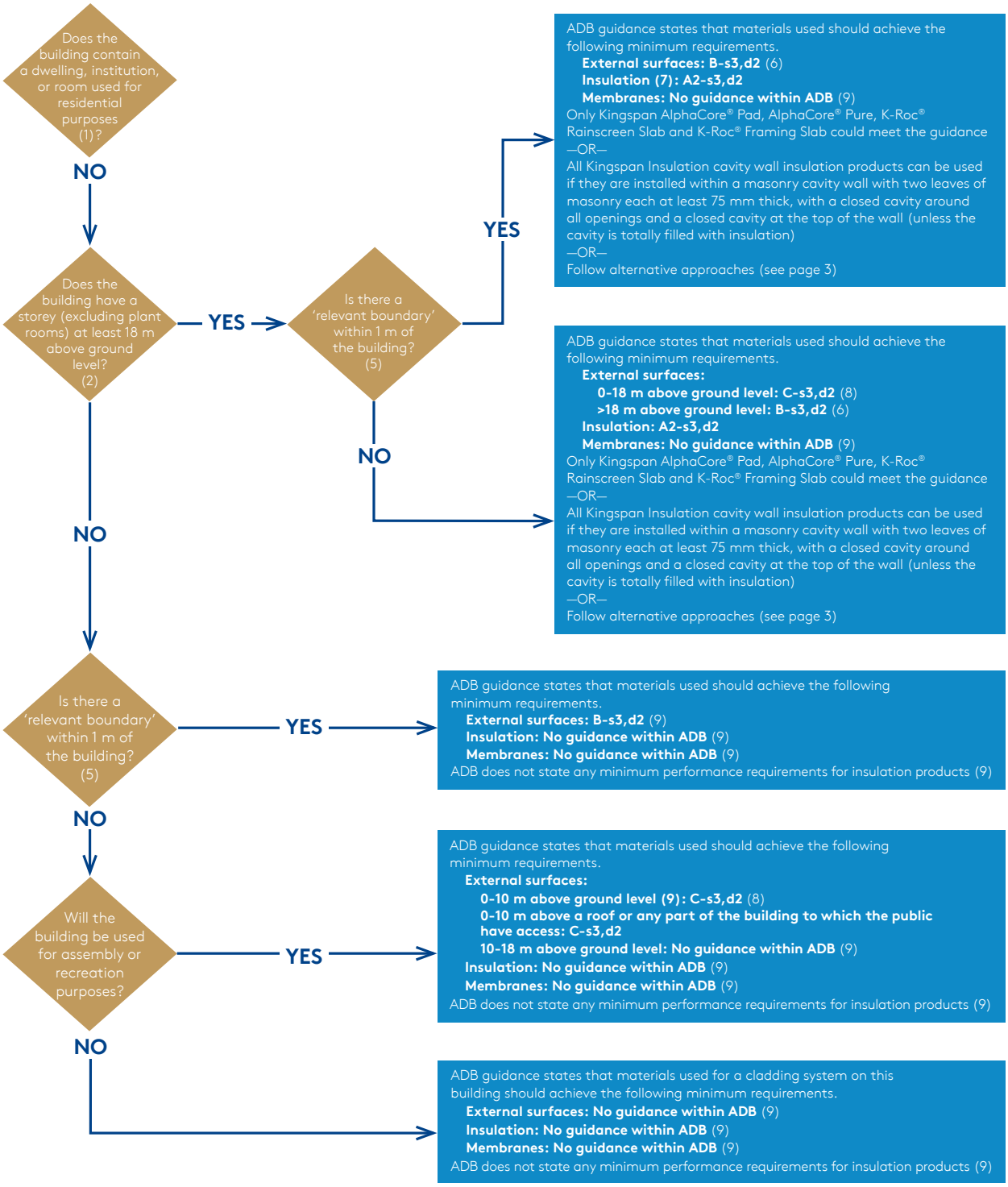

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Alternative approaches

Meet the performance criteria given in BRE report BR 135 for external walls using full-scale test data from BS 8414-1 or BS 8414-2 (click here for details of Kingspan Insulation test data).

—OR—

Assessment in lieu of test to BS 9414 using BS 8414 test data (note the tested system must match what is built)

—OR—

Fire safety engineering might provide an alternative approach to fire safety. Fire safety engineering may be the only practical way to achieve a satisfactory standard of fire safety in some complex buildings and in buildings that contain different uses. Fire safety engineering may also be suitable for solving a specific problem with a design that otherwise follows the provisions of Approved Document B. A fire engineering professional should be consulted. Please note that when using this route you will need to consider the certification for the products, for example BBA approvals of some products restrict the use above 11 m. Please contact **highrisetechnical@kingspan.com** for further advice.

NOTES:

(1) The term relevant building includes student accommodation, care homes, sheltered housing, hospitals, dormitories in boarding schools, hotels, hostels and boarding houses. For more information on relevant buildings, please click here.

(2) The height of the top storey in a building is determined by Diagram D6 of ADB. The height of the top storey is measured from the upper floor surface of the top floor to ground level on the lowest side of the building. The height of the top storey excludes roof-top plant areas and any top storeys consisting exclusively of plant rooms

(3) This includes:
- (a) cavity trays when used between two leaves of masonry
- (b) any part of a roof (see paragraph (iv) of regulation 2(7)) if that part is connected to an external wall
- (c) door frames and doors
- (d) electrical installations
- (da) fibre-optic cables
- (e) insulation and waterproofing materials used below ground level or up to 300 mm above that level
- (f) intumescent and fire stopping materials where the inclusion of the materials is necessary to meet the requirements of Part B of Schedule 1
- (g) membranes (however, note that **membranes used as part of the external wall construction above ground level should have a minimum rating of B-s3,d0)**
- (h) seals, gaskets, fixings, sealants and backer rods
- (ha) components associated with a solar shading device (excluding components whose primary function is to provide share or deflect sunlight, such as the awning, curtain or slats)
- (i) thermal break materials where the inclusion of the materials is necessary to meet the thermal bridging requirements of Part L of Schedule 1
- (j) window frames and glass (however, window spandrel panels and infill panels must comply with Regulation 7(3))
- (k) materials which form the top horizontal floor layer of a balcony which are of European Classification A1fl or A2fl-sl (classified in accordance with the reaction to fire classification) provided the entire layer has an imperforate substrate under it

(4) Specified attachments include: (a) balconies attached to an external wall; (b) solar panels attached to an external wall; (c) devices attached to an external wall to deflect sunlight (sun-shades)

(5) This is typically the distance between a side of a building and the site boundary (see section 13, diagram 13.2 of Approved Document B)

(6) Profiled or flat steel sheet at least 0.5 mm thick with an organic coating of no more than 0.2 mm thickness is also acceptable

(7) This includes any insulation product, filler material (such as the core materials of metal composite panels, sandwich panels and window spandrel panels but not including gaskets, sealants and similar) etc. used in the construction of an external wall

(8) Timber cladding at least 9 mm thick is also acceptable

(9) Whilst ADB does not provide any specific requirements for this cladding element, the document does state: "In relation to buildings of any height or use, consideration should be given to the choice of materials (including their extent and arrangement) used for the external wall, or attachments to the wall, to reduce the risk of fire spread over the wall."

(10) Based upon scientific principles and in line with the BS 7974 suite of documents from an integrated or a 'whole building' perspective, fire safety engineering not only considers the performance of structures, systems, products and materials when exposed to fire, it also includes human behavioural aspects, fire prevention and active and passive fire protection measures e.g. effective means of egress and adequate measures for alarm, detection, control and extinguishment

NB The fire safety requirements of the Building Regulations will probably be satisfied by following the relevant guidance in Approved Document B. However, approved documents provide guidance for some common building situations and there may be alternative methods of complying with the Building Regulations' requirements. If alternative methods are adopted, the overall level of safety should not be lower than the approved document provides. It is the responsibility of those undertaking the work to demonstrate compliance. If other standards or guidance documents are adopted, the relevant fire safety recommendations in those publications should be followed in their entirety. However, in some circumstances it may be necessary to use one publication to supplement another. Care must be taken when using supplementary guidance to ensure that an integrated approach is used in any one building. Guidance documents intended specifically for assessing fire safety in existing buildings often include less onerous provisions than those for new buildings and are therefore unlikely to be appropriate for building work that is controlled by the Building Regulations. Buildings for industrial and commercial activities that present a special fire hazard, e.g. those that sell fuels, may require additional fire precautions to those in Approved Document B.

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