



**Subject: Minimum Periods of Fire Resistance for TEK**

**What Does a Minimum Period of Fire Resistance Mean?**

A minimum period of fire resistance is the length of time (in minutes) which a structural element must remain physically stable in the event of a fire to assist adequate escape/rescue of any occupants within a building and resist further spread.

**Meeting the Requirements with TEK**

The following table and footnotes have been extracted from Approved Document B (Fire Safety) of the Building Regulations (England and Wales).

**Extract From Table A2 of Approved Document B of the Building Regulations**

| Purpose group of building | Minimum periods (minutes) for elements of structure in a:                         |                  |                  |               |
|---------------------------|---|------------------|------------------|---------------|
|                           | Ground or upper storey  |                  |                  |               |
|                           | Height (m) of top floor above ground, in a building or separated part of building |                  |                  |               |
|                           | Not more than 5   | Not more than 16 | Not more than 30 | More than 30  |
| Residential (domestic)    |   |                  |                  |               |
| a) Flats and maisonettes  | 30*   | 60**             | 90**             | 120**         |
| b) and c) Dwelling houses | 30*   | 60*              | N/A              | N/A           |
| Residential               |   |                  |                  |               |
| a) Institutional          | 30*   | 60               | 90               | 120#          |
| b) Other residential      | 30*   | 60               | 90               | 120#          |
| Offices                   |   |                  |                  |               |
| Not Sprinklered           | 30*   | 60               | 90               | Not Permitted |
| Sprinklered               | 30*   | 30*              | 90               | 120#          |
| Shops and commercial      |   |                  |                  |               |
| Not Sprinklered           | 60  | 60               | 90               | Not Permitted |
| Sprinklered               | 30  | 60               | 60               | 120#          |
| Assembly and recreation:  |   |                  |                  |               |
| Not Sprinklered           | 60  | 60               | 90               | Not Permitted |
| Sprinklered               | 30  | 60               | 60               | 120#          |

\* Increase to 60 minutes for compartment walls separating buildings.

\*\* Reduced to 30 minutes for any floor within a maisonette, but not if the floor contributes to the support of the building.



**Kingspan TEK™**



- # Reduced to 90 minutes for elements not forming part of the structural frame.
- α 30 minutes in the case of three storey dwellinghouses, increased to 60 minutes for compartment walls separating a building.

The Kingspan TEK system is only required to meet either 30 minutes or 60 minutes rating. 90 or 120 minute requirements only apply to buildings that are greater in height than the maximum 4 storeys allowable for the TEK system.

When tested in accordance with BS 476: Part 21: 1987, both the TEK 142 and 125 meet the requirements if lined as follows:

| Panel          | Timing: | 30 minutes  | 60 minutes   |
|----------------|---------|---|--|
| <b>TEK 142</b> |         | 1 x 12.5mm standard plasterboard (actual achieved 54 mins.) | 1x 12.5mm fire resistant plasterboard over 1 x 12.5mm standard plasterboard (actual achieved 73 mins.) |
| <b>TEK 125</b> |         | 1 x 15mm standard plasterboard (actual achieved 36 mins.)   | 1x 15mm fire resistant plasterboard over 1 x 12.5mm standard plasterboard (actual achieved 69 mins.)   |

Unless otherwise noted the fire ratings in the above extract from table A2 should refer to all storeys. An example would be to consider a 4 storey house in TEK. All 4 storeys will need to be 60 minute rated and not just the first 3 with the 4<sup>th</sup> storey being 30 minutes.

### **Conclusion**

The lining requirements for the TEK 142 and TEK 125 differ marginally from each other to achieve the requisite fire rating. 60 minutes is the maximum period of time needed to be achieved by any structure of a building using TEK building system.

- While the above is based on requirements from the ODPM, the final resolve is based on the discretion of the Local Authority Building Control or Approved Inspector and can be subject to variation due to interpretation.

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