# 5 Fire survival times

The minimum fire survival time of the power supplies and control cables should be categorized as follows:

1. Cable category 1, 30 min fire survival time;
2. Cable category 2, 60 min fire survival time; or
3. Cable category 3, 120 min fire survival time.

For specific life safety and fire-fighting applications refer to Table 1.

NOTE  The fire survival time of power supplies and control cables to life safety, fire-fighting and other critical systems within buildings is dependent on the fire survival time of the building fabric and the cable/busbar installation. In fire engineered buildings designed to BS 7974, the fire survival time of the building fabric might vary according to the fire strategy, as part of a fire engineered solution.

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| Table 1 – Recommended cable categories based on application | | | |
| **System** | **Related standards A)** | **Application** | **Minimum cable category** |
| Fire alarms | BS 5839-1 | Standard | (1) B) |
|  | BS 5839-1 | Enhanced | (3) B) |
| Evacuation systems | BS 8629  BS 8629 | Standard  Enhanced | (1) B)  (3) B) |
| Communications | BS 5839-9 | Disabled evacuation alarms (refuges) | (3) B) |
|  | BS 5839-9 | Emergency voice communication systems | (3) B) |
|  | - | Closed-circuit television (CCTV) | 2 |
|  | BS 5839-8 | Voice alarm systems – standard | (1) B) |
|  | BS 5839-8 | Voice alarm systems – enhanced | (3) B) |
| Emergency lighting | BS 5266-1 | Emergency escape lighting | (2) B) |
|  | BS 5266-1 | Escape route lighting | (2) B) |
|  | BS 5266-1 | Central battery and distribution | (2) B) |
| Sub-main power distribution (see Figure 1) | - | Fire-fighting applications | 3 |
|  | - | Means of escape applications | 1 or 2 |
| Smoke and heat control: Fire-fighting | BS 7346-7, BS 7346-8 | Car park smoke control | 3 C) |
|  | - | Wiring in other areas of special fire risk | 3 C) |
|  | BS EN 12101-8 | Motorized fire and smoke dampers (MFSDs) – supply and control | 3 |
|  | BS EN 12101-1 | Smoke barriers – supply and control | 3 |
|  | BS 8524 (both parts) | Fire barriers – supply and control | 3 |
|  | BS EN 12101-2 | Natural smoke and heat exhaust ventilation systems (SHEVS) – supply and control | 2 |
|  | BS EN 12101-3 | Powered SHEVS – supply and control | 2 or 3 D) |
|  | BS EN 12101-1 | Smoke curtains – supply and control | 3 |
|  | BS EN 12101-3 | Smoke fans | 3 |
|  | - | Smoke shafts – controlled MFSDs | 2 |
|  | - | Powered smoke shafts and controlled MFSDs | 3 |
|  | BS EN 12101-6 | Pressurization | 3 |
|  | - | Fire-fighting systems activation and monitoring | 2 or 3 E) |
| Means of escape | BS 7346-7 | Car park smoke clearance | 2 |
|  | - | Wiring in other areas of special fire risk | 3 C) |
|  | BS EN 12101-8 | Smoke control dampers – supply and control | 2 |
|  | BS EN 12101-1 | Smoke barriers – supply and control | 2 |
|  | - | Fire barriers – supply and control | 2 |
|  | BS EN 12101-2 | Natural SHEVS – supply and control | 1 or 2 F) |
|  | BS EN 12101-3 | Powered SHEVS – supply and control | 2 |
|  | BS EN 12101-1 | Smoke curtains – supply and control | 2 |
|  | BS EN 12101-3 | Smoke fans | 3 |
|  | - | Smoke shafts – controlled MFSDs | 2 |
|  | - | Powered smoke shafts and controlled MFSDs | 2 |
|  | BS EN 12101-6 | Pressurization | 2 |
|  | BS 7273-4 | Powered sliding doors | 2 |
|  | - | Means of escape systems activation and monitoring | 1 or 2 F) |
| Fire-fighting shafts | BS EN 12101-6 | Pressurization | 3 |
|  | - | Chimneys – controlled [MFSD] dampers | 3 |
|  | - | Powered chimneys and controlled MFSDs | 3 |
|  | BS 9999 | Fire-fighting shaft normal lighting | 3 |
|  | BS 9999 | Fire-fighting shaft system monitoring | 3 |
| Lifts | BS 9999 | Fire-fighting – Lift supplies | 3 |
|  | BS EN 81-72 | Fire-fighting – Communications | 3 |
|  | BS 9999 | Evacuation – Lift supplies | 2 |
|  | - | Evacuation – Communications | 2 |
| Fire suppression | BS EN 12094 | Gaseous extinguishing systems | 2 |
|  | BS EN 15004 (all parts) | Gaseous extinguishing systems | 2 |
|  | BS 8489 | Water mist | 3 |
|  | BS 8458 | Water mist - residential | 2 |
|  | BS EN 12416-1 and -2 | Powder systems | 2 |
|  | BS EN 12845 | Sprinkler systems | 3 |
|  | BS 9251 | Sprinkler systems - residential | 2 |
|  | BS EN 13565-1 and -2 | Automatic foam systems | 2 |
|  | BS 5306-1 | Hose reel systems | 3 |
|  | DD CEN/TS 14816 | Water spray systems | 3 |
|  | - | Suppression system monitoring | 2 |
| Fire mains | BS 9990 | Wet riser pumps | 3 |
|  | - | Valve and equipment monitoring | 3 |
| *NOTE Further guidance on power supplies is given in BS EN 12101-10.*  A) Refer to these standards for further information on the relevant system or application.  B) The categories given in parentheses are approximately equivalent to the cable performance recommendations given in the related standards, and are included here for information. The actual cable performance recommendations for these applications are given in the related standards.  C) See Clause **19** for information on areas of special ﬁre risk.  D) Use minimum Category 2 or 3 depending on the type of system (1 h or 120 min).  E) Use minimum Category 2 for automatic system activation, or Category 3 for firefighters’ manual override.  F) Use minimum Category 1 for automatic system activation, or Category 2 for firefighters’ manual override. | | | |