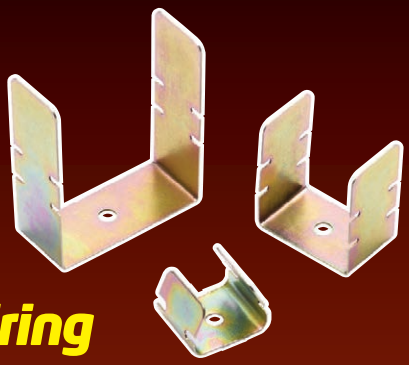
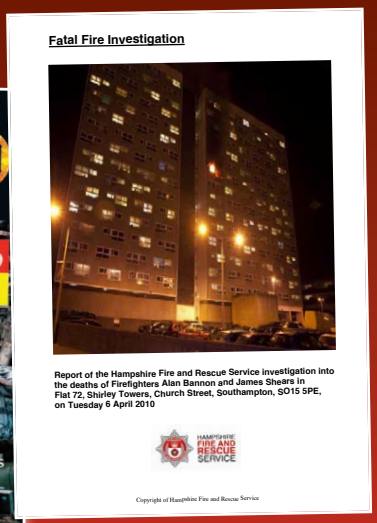
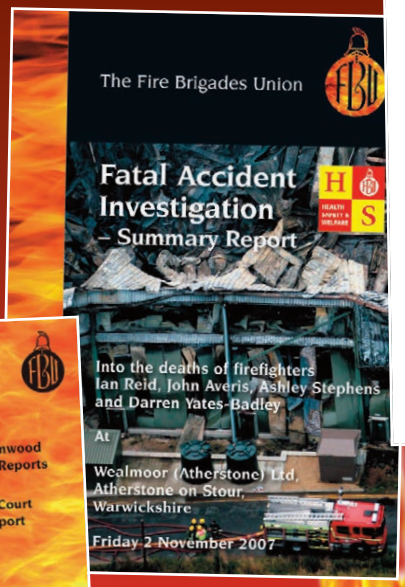
D-LINE®

Safe-D® Clips



Ignoring 17th Edition Wiring Regulations can be fatal





Explaining BS7671 Amendment 3

Ignoring 17th Edition Wiring Regulations can be fatal...

At around 3am on 2nd February 2005 a fire was reported in a flat on the fourteenth floor of tower block, Harrow Court in Stevenage. Two unextinguished tea-light candles - which had been burning for more than three hours directly on top of the plastic casing of a television - caused the TV to ignite, which in turn triggered a wardrobe alighting before engulfing the main bedroom. A reconstruction estimated the heat rose to approximately 900 celsius. Three people died; the mother-of-two resident trapped inside and two brave firefighters in the line of duty.

Plastic trunking which typically melts at 160 celsius, had disintegrated causing cables to drop across the doorway of the flat - making a web-like barrier that proved impenetrable amidst the frantic activity as one of the first crew made his way out to the lobby. Surviving support crew recalled the conditions 'like a jet engine coming out of the flat', and 'thick black smoke'; with horrific testimony describing how they found their entrapped colleague 'tangled and twisted up with cables... that were coming down from the ceiling... like he was stuck to the ground... with cables across his front, but mainly behind him... melted onto his breathing apparatus set and tunic'. From his struggle, doubtless trying in vain to untangle himself, melted cable insulation had adhered to the inside palm of his glove also. Note too how the air supply in breathing apparatus depletes quicker, from a 35 mins maximum volume, in such desperate conditions.

The subsequent Fire Brigade Union report, which devoted a section specifically to 'Cable Support Failure', concluded that the Social Housing provider *may* have contributed to death in that they *may* have failed to ensure their contractor complied with BS5839-1 2002; clause 26.2(f)...' (the fire detection and alarm system was installed in June 2002). The BSI issue in October 2002 had clearly precluded the use of plastic trunking as the sole means of cable support for securing fire alarm cabling. Harrow Court investigations make repeated reference to how the cabling of the alarm had become insecure as a result of it being secured by plastic-only and not metal clips, this being a factor attributable to the loss of life.

Soon after the Harrow Court coroners report, on 2nd November 2007 four firefighters died in a vegetable packing warehouse in Atherstone - on - Stour, Warwickshire. Arson allegedly started the blaze. It was reported that plastic conduit containing cables from the lighting system had melted, so the cables had fallen.

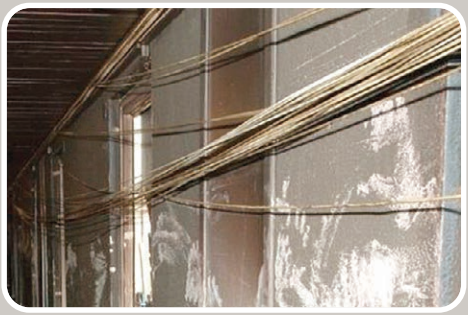
Estimates gauge that heat in parts of the warehouse might have reached 600 celsius in six minutes, with survivor's testimony recalling 'my hands starting to scald in wet gloves', and 'conditions were so poor I couldn't see where the cables were coming from'.

The helmet torch of one firefighter became entangled in cable. There are suspicions also that the hosereel may have caught on the cables, causing the crew to lose contact with the reel, so impeding the fire-fighting capability.

As Harrow Court reinforces how lost time can cost life from cable entanglement (with the potentially fatal consequence of diverted attentions also), the Wealmore Ltd warehouse deaths highlight the grave danger if rescue and extinguishing equipment such as water supply might be impeded by cables.

Tragedy struck again in the early evening of 6th April 2010, after a cotton curtain placed in the bowl of an up-lighting lamp ignited in the lounge of a ninth floor flat of Shirley Towers in Southampton. The family had evacuated. As the fire spread rapidly through its phases, plastic trunking all around the flat had melted. A variety of cables had completely collapsed to make a death-trap barely visible in the prevailing smoke and flames. While one firefighter managed with assistance to escape cable entanglement with burns, two were located inside the flat, lying off the corridor at the doorways of different bedrooms. Both were entangled as 'cables fell between their cylinder and breathing apparatus set making it extremely difficult to move without assistance'. Despite managing to cut the wires and drag colleagues out of the flat for emergency treatment, the fallen cables - which had severely hampered rescue efforts - proved fatal as both had been fatally exposed to the excessive heat of the inferno.

The Coroner's report advised an amendment to Building Regulations 'to ensure that all cables, not just fire alarm cables, are supported by fire-resistant cable support'... so covering twin & earth, flexes and co-axial cables, network wires and armoured cables, etcetera - whether on ceilings, or walls at high level (ensnaring heads and apparatus), or low level above skirting (trip hazards).



In a Rule 43 letter - one issued by HM Coroners with the intention of preventing deaths and learning lessons from the cause of death - in 2013 the Coroner went so far as to recommend all social housing providers consider removing all plastic-only containment in the Common Areas of all their premises and replace them '...with a method of cable support which as a minimum conforms to BS5839 part 1 : clause 26.2(f:)'

It followed that Regulation 521.11 was first published by the Institution of Engineering and Technology (IET) in January 2015 in BS7671: 2008 Amendment 3. It states in Chapter 52 (Selection and Erection of Wiring Systems) that 'Wiring systems in escape routes shall be supported in such a way that they will not be liable to premature collapse in the event of fire.'

In note 1, there is particular reference to failure of non-metallic trunking leading to cables hanging across access/egress routes hindering evacuation/fire-fighting activities.

In note 2 it specifically precludes the use of plastic cable clips, ties or trunking, 'where these products are the sole means of cable support'.

In other words Amendment 3 of BS7671 - that covers general wiring regulations – has effectively widened legislation to ensure ALL cables in escape routes are secured using non-combustible fixings.

For several years D-Line have pioneered market-leading fire-rated solutions for holding cables in PVC trunkings or direct to substrates. Now Safe-D® Clips can secure bundles of cable in PVC trunking profiles up to 50mm wide...

Frequently Asked Questions

Are Safe-D® Clips fully certified as fire-rated?

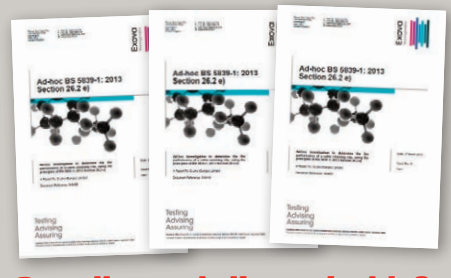
Yes! To provide assurance and peace-of-mind, all 3 sizes of Safe-D® Clip have been certified by Exova Warringtonfire confirming compliance to the highest standards of BS5839-1 section 26 (e). Tests confirmed that all Safe-D® Clips, when containing Enhanced Fire Performance 1.5mm 2c cables, and subjected to 930°C (+40 -0°C) for 2 hours at a voltage of 500V rms, kept the cables secure and maintained their circuit integrity. And the Safe-D® Clips withstood required levels of shock, vibration and water spray. Copy reports on request.


4 new enhanced FP cables


after 2 hour burn test

Note the 2 hour test is significant, as it affords the maximum time usually required for the evacuation of buildings classified as 'BD4: High density occupation, difficult conditions of evacuation'.

Maintaining circuit integrity means for example that supplies to emergency lighting, mains-wired detectors and alarms will not be compromised by cable failure. Safe-D® Clip certifications ensure compliance to all other standards and regulations relevant to BS7671 Amendment 3.



Are all metal clips suitable?

No! Stainless Steel for example can fail above 538°C, so unsuitable in typical fire conditions. And clips with untreated edges will corrode if exposed to any condensation, to compromise functionality and reliability. As a life-safety issue, for peace-of-mind certified products should always be used... where actual recorded tests in fire conditions confirm that the assured material and the design will always be suitable and fully fit-for-purpose.

How should we fix Safe-D® Clips?

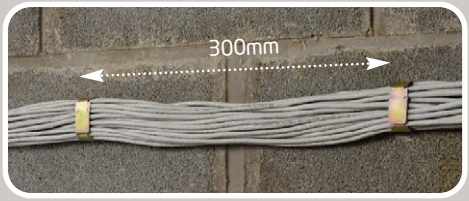
Most plastic wall-plugs will soften and fail later, disintegrating between 100°C - 200°C, so provide inadequate support in fire conditions for the time required. We recommend fire-rated fixings such as the DeWalt® Wall-Dog®. Simply drill a 4mm pilot-hole in the substrate, through the PVC trunking if applicable, insert the Safe-D® Clip and the Wall-Dog. Sharp flutes along the shaft negate the need for plastic wall plugs. Wall-Dogs are EN certified as 2 hour fire-rated.

For the very hardest surfaces Masonry Screws are ideal, and similarly there is no need for wall-plugs.

Shot-fired gas-nailing fixings are also popularly used for installing quantities of Safe-D® Clips.

What distances should Safe-D® Clips be spaced at?

Generally users are asked to consult cable manufacturer guidelines. Most suggest 300mm spacings for horizontal installations and 400mm for vertical cable runs. We appreciate how around door frames for example 300mm should be a maximum spacing.



Do Regs apply to domestic properties?

Yes! BS 7671:2008 incorporating Amendment 3 is the general standard for wiring in UK - and applicable to domestic properties. In common access/egress routes such as hallways, stairs and over front and rear doors, new installations of cables in PVC trunking - whether fixed to walls or the underside of ceilings - must be secured by non-combustible means to eliminate risk of entanglement.

Are there any equivalent fire-rated solutions?

Patent-pending Safe-D® Clips have **No** equivalent.

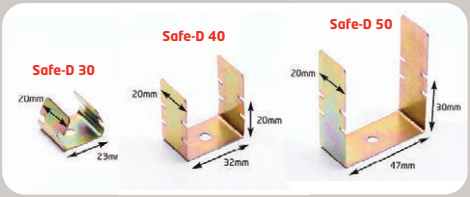
From start-to-finish Safe-D® Clips provide an exceptional consistency of performance and installer-experience. Compared to some alternatives here are three key points of difference -

1. Safe-D® Clips are manufactured in the UK using specific high-temperature pliable steel produced to BS EN standards with full traceability - and we've supplied millions without a single reported failure.

   Note we are not producing batches from random mixes that occur in non-specific steel alloy compositions... that would need a test for each and every batch! We are happy to provide full test reports and certification on request

2 Unlike punch-cut zintec versions with raw edges, Safe-D® Clips have a passivated finish to protect against corrosive elements, and minimise the risk of rust-failure.

3 Compared to narrower push-over tabs, Safe-D® Clips all feature 20mm tab-widths; while the specific pliable-gauge and smooth/rounded corners (as required by design-code BS7671 522.8.11) protect both cables and installers; unique features which make Safe-D® Clips the quickest and easiest to install.



Do Safe-D Clips fit all PVC trunkings?

They are extremely versatile, and ideal in ceiling voids also (no trunking). It should be noted however that while Safe-D30 Clips are widely used in traditional 25x16mm PVC mini-trunking, some profiles do have inverted base-tops... which reduce the aperture width so restricting space and making fitment difficult.

For best results use Safe-D30 Clips in D-Line 30x15mm ½-circle self-extinguishing mini-trunking, where Safe-D30 Clips snugly-fit in the base (& can accommodate 2 x 2.5mm T&E cables; not practical with narrower alternative clips).

Then there is the added benefit that the trunking is quick-to-install, with an appearance that blends with decor - often saving the need to channel walls and much preferred by clients!... ideal for surface socket installations, switch drops, aerial cables, and runs to smoke alarms and ceiling roses for example.

	SAFE-D30 Base Measurement = 23mm	**SAFE-D40** Base Measurement = 31mm	**SAFE-D50** Base Measurement = 46mm
Suitable for use with these trunkings	**Size 2** 25mm x 16mm* (w x h) **D-Line 30x15mm** * see above text	**Size 3** 40mm x 16mm (w x h) **Size 4** 40mm x 25mm (w x h) **Size 5** 40mm x 40mm (w x h)	**Size 6** 50mm x 25mm (w x h) **Size 7** 50mm x 32mm (w x h) **Size 8** 50mm x 50mm (w x h)

Safe-D30 in Size 2 Trunking

Safe-D40 in Size 3 Trunking

Safe-D50 in Size 8 Trunking

Safe-D30 in D-Line 30x15mm Mini Trunking

Safe-D40 in Dado Trunking

Safe-D50 in D-Line 60x30mm Trunking

What is an escape route?

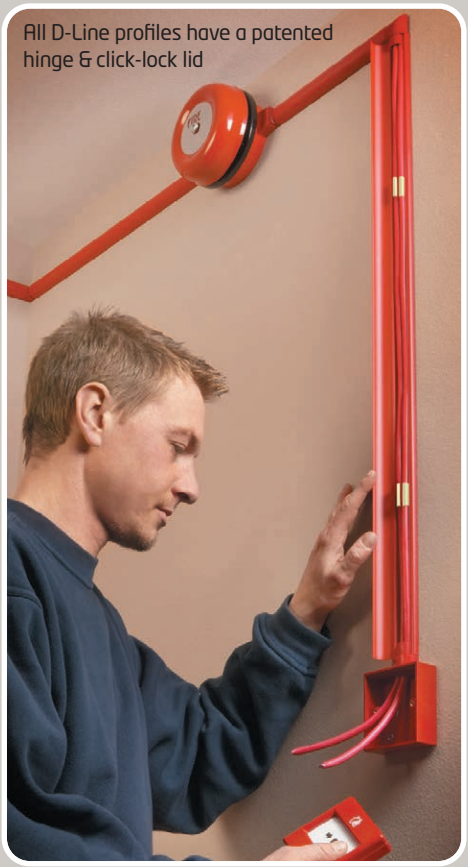
An escape route is a route designated for escape to a place of safety in the event of emergency. These may include not only defined routes such as corridors, stairways and hallways, but also open areas through which escaping persons might reasonably be expected to need to pass on their way to a place of safety.

2x1.5 2c FP cables, Safe-D30 Clips, D-Line 30x15mm Mini Trunking

No sharp edges; D-Line's subtle appearance blends with decor

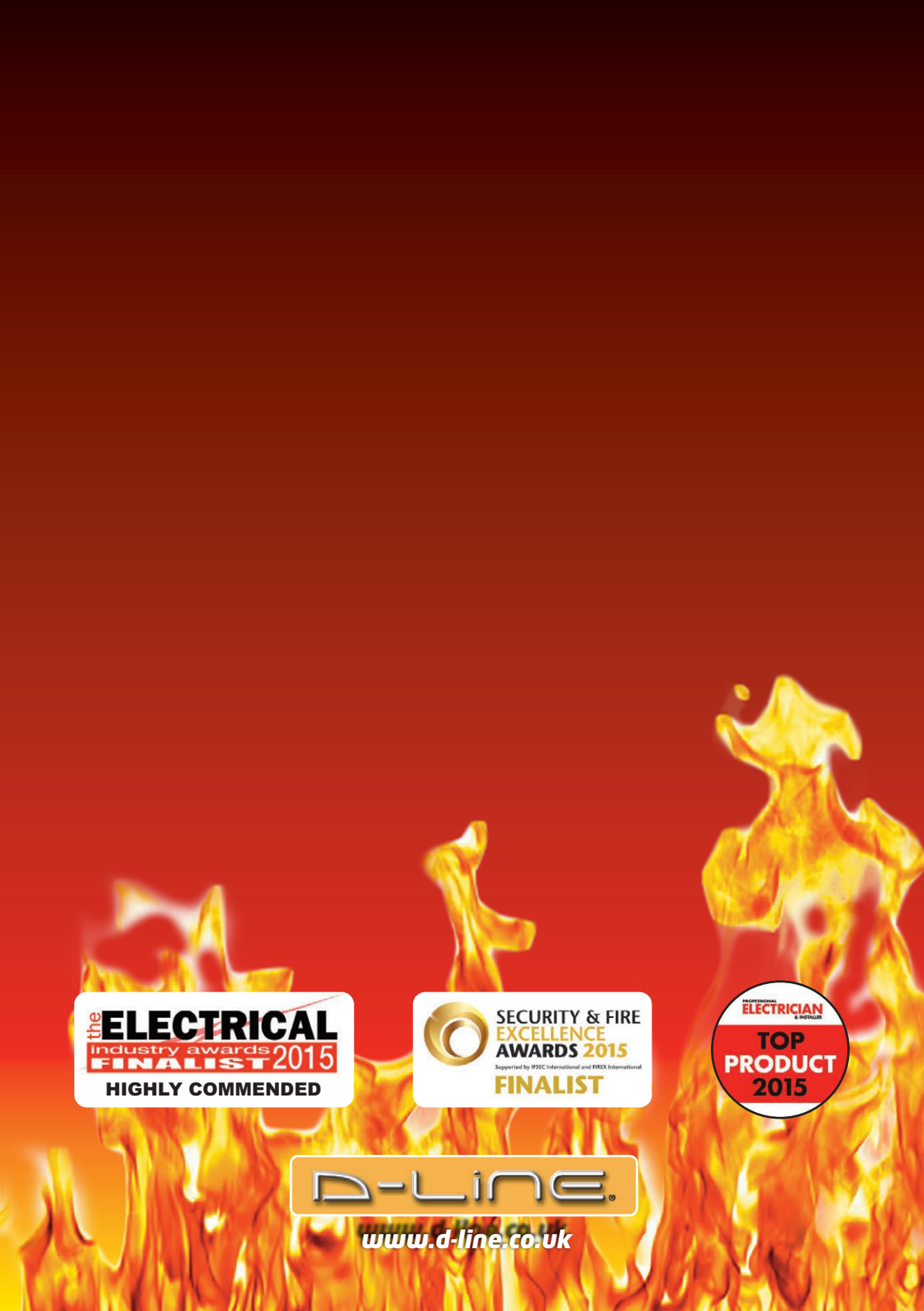
Cable management where time, safety & appearance matter

All D-Line profiles have a patented hinge & click-lock lid



Decorative mini trunking that is 'quick to fit & looks great!'

2x2.5 T&E cables, Safe-D30 Clips, D-Line 30x15mm Mini Trunking above skirting


the ELECTRICAL
industry awards
FINALIST 2015
HIGHLY COMMENDED
SECURITY & FIRE
EXCELLENCE
AWARDS 2015
Supported by IFSEC International and FIREX International
FINALIST
PROFESSIONAL ELECTRICIAN & INSTALLER
TOP
PRODUCT
2015
D-LINE
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