Fire Rated Enclosures

In a recent independent test CE-TEK's fire-rated enclosures met all the stringent conditions set out in the British Standards: BS5839-1: 2013 Section 26.2e (which states that enclosures should be able to support cables so that circuit integrity is not reduced below that afforded by the cable when exposed to fire and meet PH120 classification for continuity of power supply), BS EN 50200: 2006 (2 hours fire and mechanical shock at 840ºC) and BS 8434-2: 2003 + A2 2009 (2 hours at 970ºC, the first hour as combined fire and mechanical shock, the second hour as fire, mechanical shock and water combined).

The BS tests replicate a fire scenario, rapid heat build-up (enclosures were tested up to 970ºC) and the process of extinguishing with water, and mechanical shock associated with masonry collapse.

CE-TEK's fire-rated enclosures are designed to meet the exacting specifications for building fire safety, over ground and underground rail applications, road tunnels and other public places where electrical power supply, emergency lighting and public address systems are required to be fully operational in the event of a fire.

CEX Fire Test Report

CEP Fire Test Report

CEA Fire Test Report

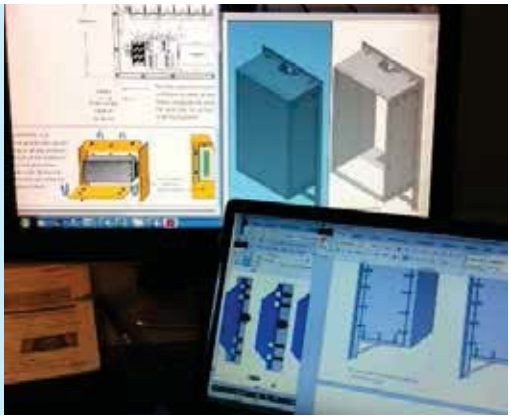
London Underground approved for FR enclosures LU ID 2101

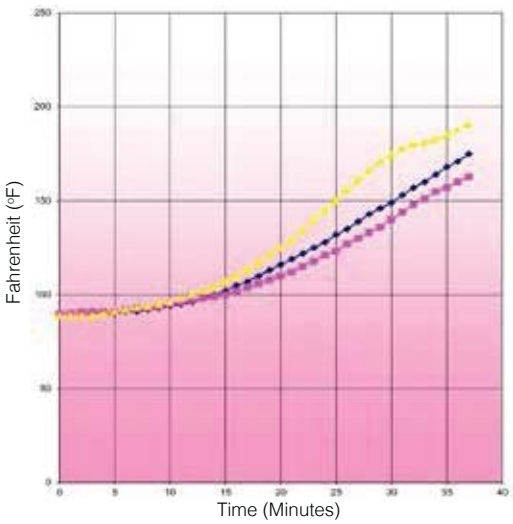
Product Code	Specification	Height mm	Width mm	Depth mm
CEX 151590FR	5 X 4mm² terminals, linked with separator plate	150	150	90
CEX 191910FR	5 X 4mm² terminals, linked with separator plate	190	190	100
CEX 151590FRF	5 X 4mm² terminals, linked with separator plate and fuse	150	150	90
CEX 191910FRF	5 X 4mm² terminals, linked with separator plate and fuse	190	190	100

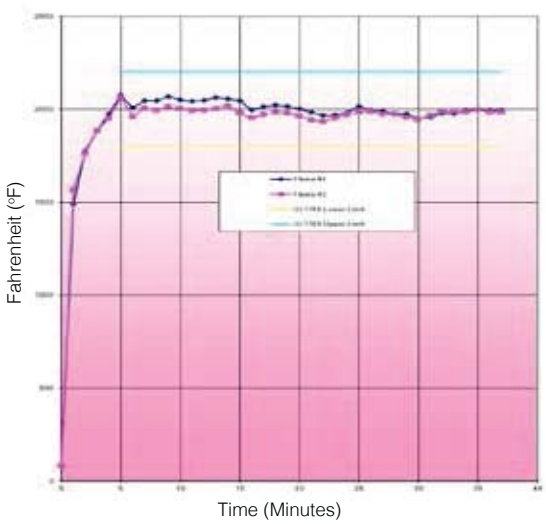
CEX PFP and FS Fire Protection

Overview and Key Features

- Manufactured from 316L or 304L stainless steel using CEX or ACEX designs
- Passive protection fire-rated to 1093ºC for 30 mins to UL 1709 or Passive protection fire-rated to 950ºC for up to 120 mins to ISO 22899-1 Jet Fire Test.
- Passive Fire Suppressive Enclosures
- Bespoke designs and ATEX/IECEx versions available







Passive Fire Protection (PFP) and Fire Suppressive (FS) Enclosures are designed to protect essential electrical equipment in the event of a fire, the principle works in the same way as building compartmentalisation under building fire regulations, which use fire resistant doors and floors in order to provide life safety. In the case of CE-TEK's PFP enclosures, we have two different types which provide equipment protection for between 30 minutes and up to 2 hours (120 minutes). Our passive FS enclosures are designed to be fully sealed in a similar way to ATEX explosion proof enclosures so that any internal fire, caused by overheating equipment, can only draw upon the relatively small volume of oxygen trapped inside the enclosure when the door is closed. CE-TEK's efficient door and cable entry seals prevent the ingress of additional oxygen to "feed" the fire and thus combustion is rapidly extinguished, allowing the exterior of the box to remain cool enough to prevent distortion, or damage the high temperature seals, whilst also containing within the enclosure any toxic fumes caused by the initial conflagration.

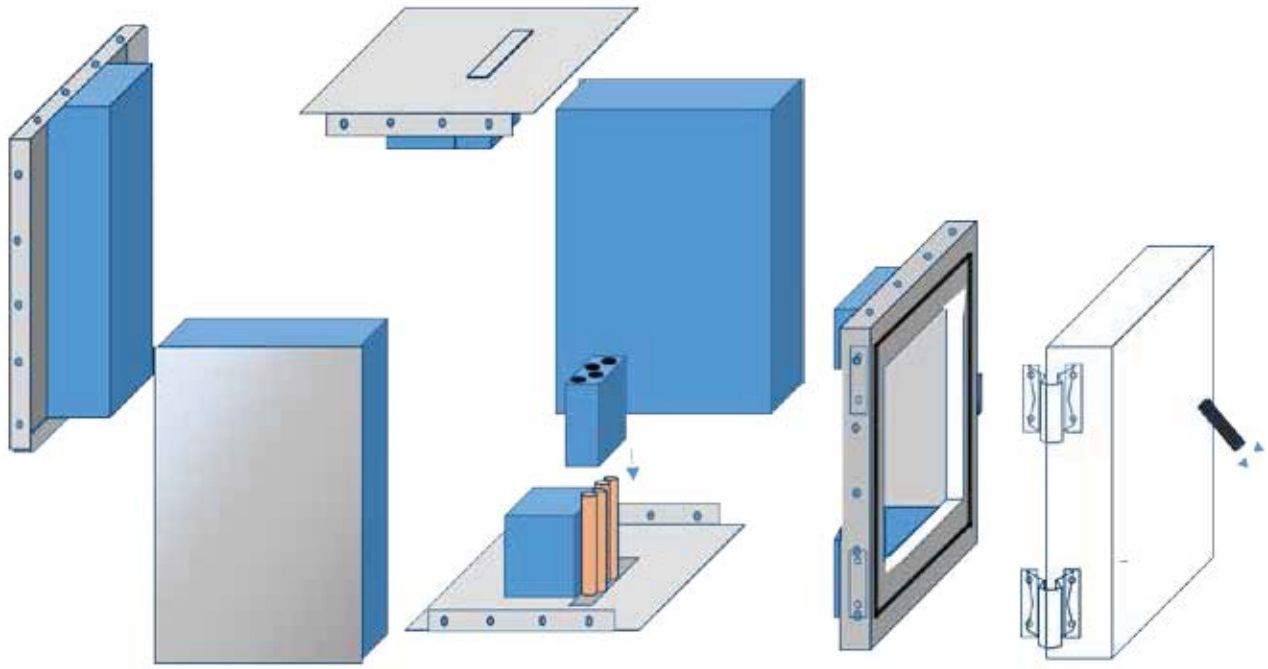
Fire damper systems work in a similar way to shut off any available oxygen source which, if present, would accelerate or prolong the fire.

All our fire protection enclosures are based on CE-TEK's highly successful CEX/ACEX design 316L or 304L stainless steel enclosures which are available as industrial or ATEX/IECEx versions (see pages15 & 16).

CE-TEK's standard PFP design uses Heat Guard, an intumescent coating, which is applied to the outer enclosure walls.

Heat Guard typically affords equipment protection for 30 minutes in hydrocarbon fires reaching 1093ºC (2000ºF) and has been tested to meet the UL 1709 rapid heat test used for testing structural steel. As there is no external bandaging/cladding or joint taping etc., to the external surfaces the physical appearance of PTP enclosures is also aesthetically pleasing as well as functional, as the enclosure operates in exactly the same as if were uncoated; this allows ease of maintenance and initial installation.

CE-TEK's other fire protection enclosure designs are reserved for bespoke applications or where a higher degree of passive fire protection is required. Firstly, CEX Passive Fire Protection enclosures feature an internal endothermic or silicate insulation layer, which is designed to be easily removable for maintenance without the need to remove existing cables, use specialist tools or require personnel training. Typical protection levels are for up to 2 hours (120 minutes) with internal temperature not exceeding 60ºC and jet fire tested to 1250ºC. CE-TEK are also able to provide PFP enclosures with ventilation.



CE-TEK can also provide reverse purge systems for larger cabinets using CO2 or Halogen in place of compressed air.

Applications

Protection of emergency shutdown equipment in all critical areas such as railway and underground station, tunnels, oil and gas extraction and production, nuclear energy production and processing, military sectors.

Accessories

Cable bosses, separate spreader boxes to house incoming cables, ventilation systems for PFP enclosures, reverse purge systems for FS enclosures.