



NMFS Intumescents & Accessories for use in Consumer Units for Domestic Household Premises

Amendment No. 3 BS 7671



NMFS INTUMESCENTS, NON COMBUSTIBLE ENCLOSURES & RETRO FIT UPGRADES

New Regulation

Regulation 421.1.201 in Amendment 3 (January 2015) requires consumer units (and similar equipment) to have enclosures made from non combustible materials (Steel) and the purpose of this new regulation is to (as far as reasonably practicable) contain any fire within the non combustible enclosure and to minimise flames from escaping.

Market Reaction

Those involved in this market e.g. social landlords, electrical contractors appreciate the fire containment capabilities of non combustible enclosures but have expressed concerns over cable entries, because these unavoidably penetrate the non combustible barrier that is formed by the steel enclosure through the removal of cable entry knockouts.

Installation practices may result in a reduction in the capability of the enclosure to contain any fire that may occur, with the concern being that a fire path could exist along the cables and through the cable entries to other combustible materials in the surrounding areas.

IET & BEAMA Guidance

The IET and other industry organizations have partly addressed these concerns with advice for installers to ensure that the requirements of BS7671 & BSEN61439-3 are met i.e. that the installed consumer unit achieves IP4X on the top elevation and IP2XC elsewhere.

Good workmanship and proper materials must be applied by the installer. The cable installation entry method shall, as far as is reasonably practicable, maintain the fire containment of the enclosure.

This can generally be achieved by the installer ensuring that the cable access holes they make in the enclosure do not leave gaps greater than:

- 1.0mm for the horizontal top surface and
- 2.5mm for all other surfaces

The installer could for example, select as they deem appropriate; trunking, conduit, cable gland or cable entry accessories to minimise the opening around the cables.

For rear cable access, the minimum number of rear knockout(s) shall be removed to accommodate the cable(s).

However, customer questions remain as to what further steps could be taken to ensure that the necessary cable entries do not undermine the intention of this new and important fire safety requirement.





Intumescent & How It Works

Intumescent material when exposed to heat rapidly expands and fills the surrounding area effectively smothering fire and preventing spread by extinguishing flames.

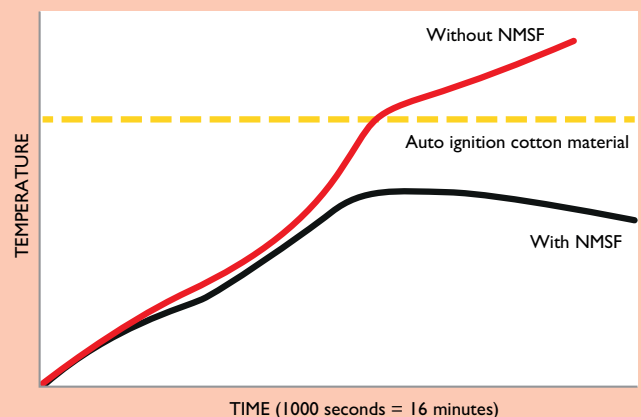
The Wylex Solution

Working with a leading UK manufacturer of intumescent, Wylex have introduced the NMFS range of intumescent material strips which fit inside the consumer unit (self adhesive). If this intumescent strip is exposed to heat the fire resistant “char” flows around the cables filling the enclosure smothering the fire by reducing the oxygen supply further, so extinguishing the fire at source.

Other Considerations

Once expanded this highly insulating char also restricts the heat of any fire from reaching the steel enclosure of the unit and thus minimises the external temperature of the units.

This is an important added consideration. If the unit were unprotected by intumescent and should a fire remain unchecked and undetected within a steel enclosure it is possible for the external surface to reach temperatures that can ignite surrounding materials that are in contact with those hot surfaces.



By incorporating the NMFS material a metal consumer unit does not reach such temperatures.

Background & Other Applications

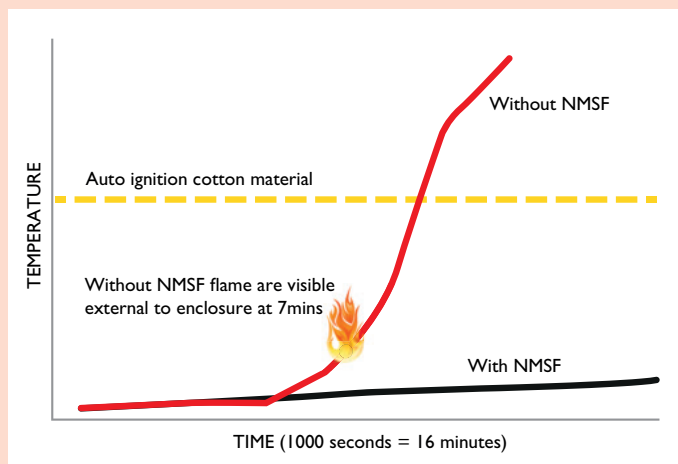
The potential fire risk with insulated consumer units has clearly been demonstrated by the findings of London Fire Brigade, however the use of plastic consumer units is still permitted in commercial (non domestic household) applications.

As with the steel consumer units the fitting of the NMFS intumescent strip dramatically reduces the risk of these units from causing a fire to propagate.

In testing carried out by BM Trada / Chiltern International Fire Ltd, an unprotected plastic consumer unit ignited after a few minutes. Whilst the same unit with the NMFS strip fitted ran for 90 minutes with very limited damage to the external unit or elevated temperatures which could lead to ignition occurring. The NMFS intumescent char was seen to fully smother and insulate the heat source from the rest of the unit minimising the chance of fire propagation.

NMFS intumescent strips can address the concerns of specifiers and installers alike and provides an additional means of reducing the effect of a fire.

We are not endorsing intumescent within plastic consumer units as a solution for new installations. However local authorities and housing associations with a large installed base of insulated units and an extended conversion programme may see this as a low cost enhancement of an existing consumer unit.



Insulated unit after 90 minutes testing with intumescent installed.



INTUMESCENT STRIPS

CAT REF	PRODUCT	CONSUMER UNIT	WIDTH
NMFS07	Intumescent fire barrier	7MOD	188mm
NMFS10	Intumescent fire barrier	10MOD	241mm
NMFS13	Intumescent fire barrier	13MOD	292mm
NMFS16	Intumescent fire barrier	16MOD	343mm
NMFS21	Intumescent fire barrier	21MOD	438mm

Application guidance covering the full consumer unit range is available from Wylex Technical Department



FIRE RETARDENT MEMBRANE CABLE ENTRIES

CAT REF	PRODUCT
NMCE1	Membrane cable entries kit 1 3 x 32mm & 7 x 20mm
NMCE2	Membrane cable entries kit 2 10 x 20mm



MAINS TAILS GLAND

CAT REF	PRODUCT
EIU	Moulded cable gland kit for metal consumer unit to provide additional support and supplementary insulation similar to Class II construction for the incoming cables. Suitable for 16mm ² or 25mm ² double insulated cable 32mm knockout

As recommended in the IET On Site Guide



NON COMBUSTIBLE BLANK

CAT REF	PRODUCT	MODULE
NMMB	Metal blanking plate - Twist fit	1

- Wylex NMFS intumescent strips were designed and developed in association with Tenmat, a Queens Award winning fire protection company, for use with Wylex consumer units
- NMFS intumescent strips are fully tested under the most onerous conditions by UKAS approved fire laboratory BM Trada / Chiltern International Fire Ltd.
- NMFS intumescent strips will dramatically subdue or fully extinguish any fire which may occur in a steel consumer unit and exceed the requirements and intentions of Amendment 3 Regulation 421.1.201
- NMFS intumescent strips have a 30 year lifespan
- NMFS can be fitted in seconds - self adhesive strips with no special tools required
- Tests confirm the intumescent suppresses fire propagation and reduces the enclosure surface temperature
- Use with Wylex EIU mains tails gland & NMCE semi blind cable entry fittings
- Include NMMB (non combustible blank in unused ways) for maximum non combustible performance
- Suitable for use with NH upgrade kits (replacement cover & lid assembly) for retrofit to existing NH metal cased units

Test criteria in metal consumer units included the use of Wylex membrane cable entries and mains tails entry glands as recommended in the IET On-Site-Guide 2015, furthermore Wylex recommends use of non combustible way blanks to ensure that as much of the enclosure as possible is manufactured from non combustible materials.



Electrium



ELECTRIUM SALES LIMITED A SIEMENS COMPANY

Commercial Centre, Lakeside Plaza, Walkmill Lane, Bridgtown, Cannock WS11 0XE.

eMail: info@electrium.co.uk Web: www.electrium.co.uk

UK SALES

Telephone: 01543 455020 Facsimile: 01543 455021 eMail: wylex.sales@electrium.co.uk

TECHNICAL

Telephone: 01543 438320 Facsimile: 01543 438321 eMail: wylex.technical@electrium.co.uk

EXPORT SALES

Telephone: +44 1543 455049 Facsimile: +44 1543 455048 eMail: export@electrium.co.uk

Although every effort has been made to ensure accuracy in the compilation of the technical detail within this publication, specifications and performance data are constantly changing. Latest details can be obtained from Wylex.

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