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Socket Box Inserts

Tenmat's UKCA Marked Socket Box Inserts are designed to maintain the fire resistance performance of fire rated partition (stud) wall constructions where electrical back boxes have been installed.

Passive Fire Protection - Service Penetrations

Product Description

Tenmat's UKCA Marked Socket Box Inserts are manufactured from halogen free, low smoke, fire resistant, mineral fibre material and are designed to maintain the fire performance of partition (stud) wall constructions when penetrated by steel or plastic electrical back boxes. The insert will also provide resistance to the passage of sound and air movement.

In the event of a fire the Socket Box Inserts mineral fibre material will prevent the fire passing through the electrical back box aperture, providing effective fire resistance, for integrity (E) and insulation (I) from 30 to 120 minutes (EI30 to EI120) depending upon the wall construction.

Product Details

Technical

- UKCA Marked
- EN13501-2 Classified for Fire Resistance Ratings of EI30, EI60, EI90 and EI120
- BS EN 1366-3 Fire Tested
- Tested in Single Layer & Double Layer Partition Systems
- Tested in 75mm thick walls and greater
- Tested in "Twin Wall" Fire & Acoustic Partitions
- Acoustically Tested
- Limits Air Leakage
- Back to Back tested in multiple applications
- Suitable and tested for both plastic pattress boxes and metal back boxes
- Available for single and double boxes (35mm and 47mm depths available)
- Tested with multiple cable penetrations

Installation and maintenance

- Pre-formed for easy installation – can be installed in seconds without assembly or adhesives
- No maintenance required
- Mess free installation – no need for adhesives, screws or drilling
- Can be retrofitted

Approved Applications

Socket Box Inserts / Fire Test Evidence

Tested in accordance with BS EN 1366-3

Socket Box Type	Socket Box Size	Socket Box Depths (mm)	Partition Minimum Overall Thickness (mm)	Minimum Plasterboard Requirements either side of wall	Cavity Insulation Required	Minimum Offset (mm)	Back Box Position in Wall (See notes below table)	Integrity (E)	Insulation (I)	Classification (EI)
Plastic	Single / Double	35/47	100	2 x 12.5mm[1]	Yes[4]	150	Flush	120	120	120
Plastic	Single	35/47	100	2 x 12.5mm[1]	No	150	Flush	120	120	120
Plastic	Single / Double	35	100	2 x 12.5mm[1]	Yes[4]	0 (Back to Back)	Flush	120	90	90
Plastic	Double	47	100	2 x 12.5mm[1]	No	150	Flush	90	90	90
Metal	Single / Double	35/47	100	2 x 12.5mm[1]	No	0 (Back to Back)	Flush	120	90	90
Metal	Single / Double	35/47	100	2 x 12.5mm[1]	No	150	12.5mm Recessed	90	90	90
Metal	Single / Double	35/47	75	1 x 12.5mm[2]	No	150	Flush	60	60	60
Plastic	Single / Double	35/47	75	1 x 12.5mm[2]	No	150	Flush	30	30	30

European Fire Performance tested in accordance with BSEN 1364-1 with guidelines from BS EN 1366-3

Socket Box Type	Socket Box Size	Socket Box Depths (mm)	Partition Minimum Overall Thickness (mm)	Minimum Plasterboard Requirements either side of wall	Cavity Insulation Required	Minimum Offset (mm)	Back Box Position in Wall (See notes below table)	Integrity (E)	Insulation (I)	Classification (EI)
Metal	Single / Double	35/47	190	2 x 12.5mm[3]	No[5]	150	Flush	60	60	60
Metal	Single / Double	35/47	190	2 x 12.5mm[3]	No[5]	150	Nom. 20mm Recessed	60	60	60

Test evidence

UKCA Certificate 0843-CPR-1313 UKTA 0843-UKTA-23/0021 Declaration of Performance QA029

- Minimum Offset relates to position of socket boxes either side of the wall, e.g. 150mm means the sockets on one side of the wall must be horizontally offset by minimum 150mm compared to the socket on the other side of the wall
- Minimum Offset of 0mm means that the socket boxes may be installed directly back to back either side of the partition or horizontally offset by any spacing =>0mm
- Plastic Pattress Boxes must be fitted flush with front face of outer plasterboard layer
- Metal Back Boxes can be fitted flush or recessed to the maximum stated in the above tables
- Where Metal Back Boxes are recessed, the Socket Box Insert may be fitted at any position from the front face of plasterboard or recessed to the back of the back box
- Cable Entry tested with either pre-made tight fitting hole or pre-slitting of Socket Box Insert to allow retrofitting around existing cables
- Testing in min. 75mm thick walls allows for up to 2No. 2.5mm Twin & Earth cables per socket
- Testing in min. 100mm thick walls allows for up to 3No. 2.5mm Twin & Earth cables per socket
- Testing in min. 190mm thick walls allows for up to 7No. 2.5mm Twin & Earth or up to 2No. 6mm Twin & Earth cables per socket

[1] Partition must be of the same or higher fire resistance classification in accordance with EN 13501-2 with 2x12.5mm thick Gypsum boards in accordance with EN 520

[2] Partition must be of the same or higher fire resistance classification in accordance with EN 13501-2 with 1x12.5mm thick Gypsum boards in accordance with EN 520

[3] Plasterboard tested was Siniat GTEC dB Board, Type D board in accordance to EN 520. Partition must be of the same or higher fire resistance classification in accordance with EN 13501-2 with minimum 2x12.5mm thick Gypsum boards in accordance with EN 520

[4] Cavity insulation must be min. 50mm thick / min. 100kg/m³ / stone wool

[5] Testing was carried out both with and without cavity insulation in place behind the sockets. Fire Resistance of EI60 was achieved in either scenario. Therefore, insulation is not required to achieve the fire rating. For info, the specification of insulation tested was 160mm thick / min. 9kg/m³ glass wool.

Acoustic Test Data

Tested for airborne sound insulation in accordance with BS EN ISO 140-3 and BS EN ISO 717-1.

Testing was carried out on a partition both with and without sockets installed.

The testing showed no relative/significant reduction in airborne sound insulation when sockets were protected by Socket Box Inserts.

Airborne sound insulation rating of the partition achieved:

Rw (C;Ctr)= 67 dB

Technical Information

Colour	Beige
Storage	Dry, ambient (see Safety Data Sheet)
Weight	0.01kg to 0.025kg
Fire Resistance	See Fire Test Evidence table.
Durability to EOTA TR024	Type Z1: intended for use in internal conditions with humidity equal to or higher than 85% RH excluding temperatures below 0°C, without exposure to rain or UV. [1]
Smoke Generation - BS EN 45545-2	Low Smoke Generation in material testing [2] Tenmat FF130 Results Ave. Ds(max)20 value =3 Max. limit 300 as per EN45545-2
Halogen Content	Halogen-free Tested Max. Values Fluorine = 0.0006% / 6ppm Bromine = 0.0001% / 1ppm Chlorine = 0.0007% / 7ppm Iodine = 0.0006% / 6ppm Max. limit 0.5% / 5000ppm [3]
Working Life	25 years[4]

[1] See UKTA No. 0843-UKTA-23/0021.

[2] Testing for Ds(max)20 records the greatest smoke density generated during twenty minutes, it is a logarithmic expression relating to how much light can be transmitted through the smoke. In the EN45545-2 standard, a maximum value of 300 must be demonstrated for the most demanding applications, typically underground passenger rail with autonomous vehicles. Tenmat's material can therefore be considered to be low-smoke. Test evidence in Doc. Ref. 401245.

[3] According to the IEC 60754-1 standard, halogen-free equates to less than 0.5% / 5000ppm hydrogen halide gas release on combustion. This means materials must contain below these levels for fluorine, chlorine, bromine, or iodine. Doc. Ref. 3802815

[4] See UKTA No. 0843-UKTA-23/0021

Sizes

Available for both single or double electrical back boxes, to suit the following dimensions:

- Single (35mm) Insert - Width 70mm x Height 70mm x Depth 35mm
- Single (47mm) Insert - Width 70mm x Height 70mm x Depth 47mm
- Double (35mm) Insert - Width 140mm x Height 70mm x Depth 35mm
- Double (47mm) Insert - Width 140mm x Height 70mm x Depth 47mm

Socket Box Insert nominal thickness 4mm

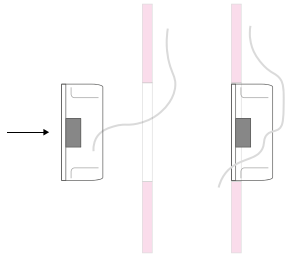
Packaging

DESCRIPTION	Per Box	Per Pallet	Units per container
35mm Single Insert	50	6,000	120,000
47mm Single Insert	35	4,200	84,000
35mm Double Insert	50	3,750	75,000
47mm Double Insert	35	2,625	52,500





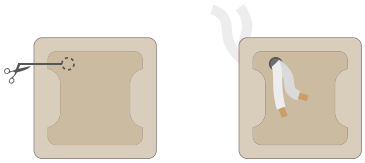
Fitting Instructions



STEP 1

Fit the electrical back box into the aperture in the wall following the manufacturer's instructions, ensuring the back box is fitted tightly, gaps between the sides of the back box and the hole cut through the plasterboard must be as small as practicable.

Plastic pattress boxes must sit flush to the face of the wall. Metal back boxes can be flush or recessed (see fire test data table for max. recess depth).



STEP 2

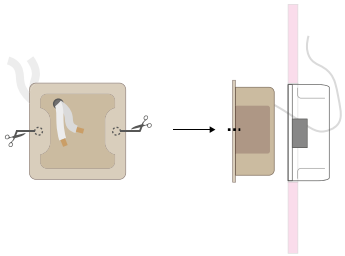
Cable Install Options:

Option 1) Pierce a hole, as small as possible, through the Socket Box Insert to allow cable to pass through.

Or

Option 2) Make a small slit in the Socket Box Insert to allow retro fitting around cables. Slit must be as small as possible and should close back up once cables installed. (As long as the slit is closed back up, it does not need to be sealed).

Tested 2.5mm Twin & Earth Cables have a cross sectional area of nominally 12mm x 6mm
Max 2No. Twin & Earth 2.5mm2 Cables in min. 75mm thick EI30/60.
Max 3No. Cables per Socket in min. 100mm thick EI30/60/90/120 partitions.
Max 7No. Cables per Socket in min. 190mm thick EI60 partitions.



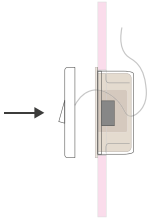
STEP 3

Fit the Socket Box Insert into the back box and pierce two small holes through the face of the insert in the position required for the face plate fixing screws.

Alternatively, the Socket Box Insert can be slit at the screw location point to aid installation around fixing screws.

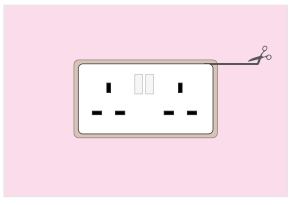
The flange of the Socket Box Insert should sit in front of outer plasterboard layer in all cases except in Metal Back Boxes in up to 60 Minute Rated Partitions where the Socket Box Insert may be recessed by up to 20mm.

The width of the flange of the Socket Box Insert may be trimmed to allow recessed fitting, however the depth of the Socket Box Insert must not be reduced.



STEP 4

Make the electrical connections as required to the switch/socket cover plate and fit the face plate in the normal manner.



STEP 5

Any excess insert material visible around the sides of the fitted switch/socket cover plate may be trimmed off.

Intended Use

Fitted inside recessed electrical back boxes within internal partition (stud) walls, to maintain fire resistance performance.

Limitations

To ensure compliance to the relevant test evidence detailed within this Data Sheet, the product must be installed as per the fitting instructions by competent installers.

Maintenance

No active maintenance required.

Where alterations are made around the product it should be checked visually to ensure that the product is still installed as per the approved original design and fitting instructions at the time of original installation.

Where product(s) is damaged or tampered, new product should be installed in line with installation guidance.

Storage Conditions

See Safety Data Sheet

Tools Required

- Sharp Knife
- Measuring Tape
- Screwdriver

PPE Required

- Hand protection
- Eye protection
- Follow project site requirements

Disposal

Outer packaging can be cleaned and recycled.

Rock mineral fibre is non hazardous waste and is categorised as “waste accepted at landfill for non-hazardous waste” and local regulations should be followed.

Please see Safety Data Sheet for more information.

Socket Box Inserts

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Tenmat warrants the materials it produces will conform to Tenmat specifications and approved drawings where applicable. It is entirely the customer's responsibility to make the final product choice and satisfy themselves of the suitability of the product for the intended application, carrying out testing where required. For construction projects, all products which the customer is intending to use on a particular project must be approved in writing by the customer's building designer, system designer or design control professional, to ensure compliance with the latest regulations.

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