



GRID GUARD



Grid Guard Manual
Version 4

Grid Guard Manual

Thank you for buying Grid Guard Anti-Rodent Flooring. You are now the owner of an incredibly effective rat and mouse repellent. It is effective against any animal which comes into direct contact with the tiles but will not work against animals with cloven feet or hair on the soles of their feet, such as some rabbits. The Grid Guard is safe, humane, low maintenance and works for years without any intervention.



This is a QR code. Simply point your smartphone camera at these for shortcuts to our instructional videos on Youtube.

Please read all the instructions through to the end before laying the tiles to make sure you understand them. Also make sure you watch all of our instructional videos here: <http://bit.ly/RatMatPlaylist>. These simplify the process. You can use

the QR code on the left to take you straight there. Ensure you read the Safety Instructions

before fitting or using the flooring. If you are not sure about anything please contact your supplier or fitter, alternatively you can contact us on our website at <https://www.thegridguard.com>.

Important Safety Instructions

- Installation must be performed by individuals who are trained and competent in doing so.
- It is important to orientate the Grid Guard and Energiser so that they are easily accessible in case the power needs to be turned off.
- The installer should ensure that it is not possible for the energiser to be plugged in accidentally during installation or maintenance of the system. It is also their responsibility to inform people who come into contact with the device that it should be deactivated prior to working in the area, as well as showing them how to do so.
- Do not switch on the energiser until finishing the installation of the Grid Guard.
- Children must be kept away from the Grid Guard at all times; the shock is harmless but unpleasant, they may not understand not to touch it. Do not fit the Grid Guard where children, pets, or members of the public can come into contact with it.
- The Grid Guard must not be used by persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge unless they have been given supervision or instruction concerning use of the


appliance in a safe way and understand the hazards involved.

- Do not switch on the energiser if there is debris on the Grid Guard. Keep it swept to prevent arcing.

- Do not install in areas where the presence of flammable vapour or explosive gases or excessive dust is possible or touch the mat with wet alcohol hand gel on your hands. Any mains electrical appliance can cause arcing and fire in these situations. Protect yourself by preventing leaks and install a flammable gas detector if required. The system has been fully UKCA tested.

- To avoid electric shock, deactivate the mat before cleaning up spilled liquid. Do not approach within 10cm of the mat when energised if a spillage has occurred.



-  Danger High Voltage. Inform all persons in the area of the Grid Guard not to touch it when activated and inform them how to deactivate it in an emergency.

- Do not connect more than one Energiser to an area of Grid Guard.

- Do not connect the Grid Guard to earth.

- Fit warning notices at every access point to the device.

- A shock from the Grid Guard is safe for humans and animals but could cause a person to fall, causing injury if

from a height. Take all precautions to prevent this happening, including using a safe work platform.

- The Grid Guard can be used in or outdoors. If the Grid Guard is used outdoors with mains voltage, the mains adaptor needs to be kept indoors or in a weatherproof environment. If used with a 12 volt battery make sure the Energiser is mounted level with the green light upwards as it is designed to drain when wet. The Energiser is IPV4 rated meaning it is resistant to water splashes from any direction.

How To Use The Grid Guard



Please read the FAQ on our website. It covers many important points you need to know when using the product. We update it regularly so you have access to the latest information.

<https://www.hammertechltd.com/faq>

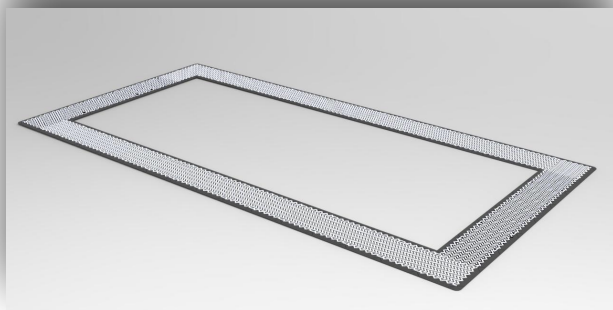
The Grid Guard can be used indoors or outdoors. The surface on which it

is laid must be level or the Grid Guard may be damaged. It must also be hard; smooth concrete is ideal. Do not lay on carpet, earth or gravel. Do not set into cement or concrete, it pushes between the contacts, as does sand if the tiles are mounted on an uneven or

shifting surface. The base is anti-skid but performs best if screwed down to prevent slippage, particularly if it will be driven over.

The tiles will be damaged if abused; they are hard-wearing enough for forklift trucks and cars to pass without harm but if they are hit by the fork on a forklift or a pump truck which is too low the tiles will be damaged. Make sure that pump trucks are pumped up and forks are raised. Notify people working in the area that they will need to give plenty of clearance.

Customers usually find a single tile depth Perimeter Solution effective against rodents. If you experience further problems then a double or triple depth Perimeter Solution will give more protection.



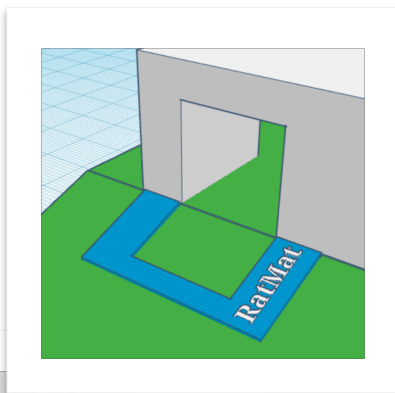
As the centre of a Perimeter Solution is not covered with tiles it offers less protection than a fully covered area. If you start with this and it is not sufficient to protect the

area then the coverage can easily be increased by adding more tiles.



The more of the ground under and around the area that you want to protect which is covered with tiles, the better the protection.

It is important to locate the Grid Guard away from a sharp change in gradient on the ground if it will be driven over by vehicles with minimal ground clearance, such as certain types of forklift truck. If not, the truck will hit the mat when it goes over the angled peak as the clearance drops. In this instance a U-shaped threshold arrangement, shown on the right, can be used inside or outside the building to bring the tiles away from the



angled area whilst maintaining effective coverage around the doorway. It is safe to walk on the floor when

it is activated if you are wearing dry shoes or wellingtons as they will insulate you from the shock. It is unpleasant but is not harmful to adults, children or small mammals and is tailored for rodents, being 40 times less powerful than that delivered by an electric fence used for farm animals.

It is important to position the mat and Energiser so that they are easily accessible in case you wish to switch off.

Remember that if you were to touch a conductive item such as a hammer or other metal object which is on the mat whilst it is activated you may get a harmless but unpleasant shock.

If an electric fence is installed in an area where members of the public have access the law states that visible warnings must be in place. There are currently no laws for electrified flooring but we recommend exhibiting warnings where it is in use. 'Electrified Floor' signs which are CE compliant should be clearly displayed at every approach to the electrified flooring. We have included a sign at the end of the instructions for you to use and photocopy.

The Energiser is able to deliver a shock more than 25m from source in ideal conditions. In damp and humid conditions this may be reduced. Use your electric fence tester to check that all of the tiles are active. When laying the tiles they connect electrically in all directions at multiple points on every tile. This means that if one or more tiles were to be damaged or removed from a

complete, infilled mat this will not affect the function of the rest of the mat; electricity will flow around the damaged area if the remaining tiles are connected. Grid Guard has a one year guarantee against defects but we expect it to last for more than ten years of normal use. If the tiles are exposed to heavy wear from large vehicles or heavy equipment it is important to perform a visual check and test periodically.

If a rodent or any non-hoofed animal not wearing shoes stands on the Grid Guard when activated it will receive a non-lethal, unpleasant shock and will leave the area. When laying indoors ensure there is a space around the edge of the flooring to allow rodents to leave the area by walking around the outside. If the flooring reaches the edges of a contained area, such as a garage, they will have difficulty leaving and are more likely to remain contained within the area.

The bases of the tiles are made from PVC which becomes more brittle as the temperature approaches freezing point. It is recommended to allow the tiles to reach room temperature before fitting to reduce the risk of damage. If you are using in an area with snow or freezing temperatures we recommend using underfloor heating to maximise function.

If you are using a Perimeter Solution, make sure you remove all food debris and, if possible, pressure wash everything inside which has been contacted by rodents, for example, car engine bays. Any residual smells will entice rodents in. Food will also draw them.

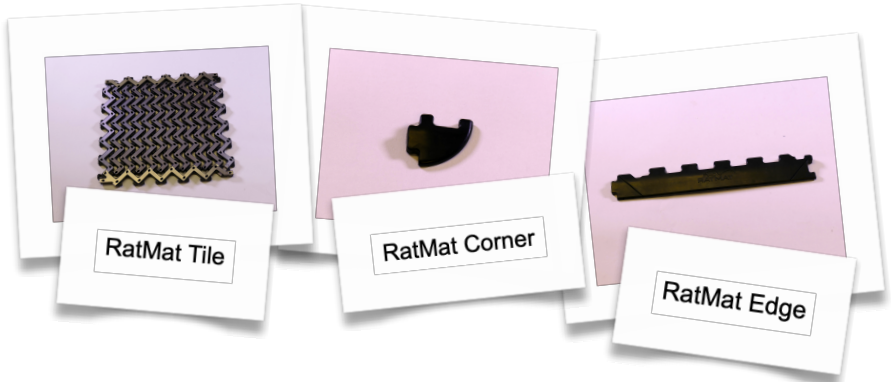
Having set up the system, please do not bait it as this can encourage rodents to learn new behaviours to access the bait. The system works best if enticements for the rodents to cross the tiles are minimised, after all, the aim is to keep them away, not draw them in. The system works best in conjunction with other measures such as blocking holes, removing piles of rubbish and organic matter and keeping all types of food out of the area. If you want to check that the system is repelling the rodents, look for signs of activity, droppings and damage in the protected area, rather than using bait. You could also set up a wildlife camera. Traps can be placed inside a perimeter or building with the system in use across the entrance for a belt and braces approach.

Avoid setting up the system in an area with overhanging structures which rodents could use to bypass the system or access items within the perimeter. Examples include trees and rafters.

You Will Need

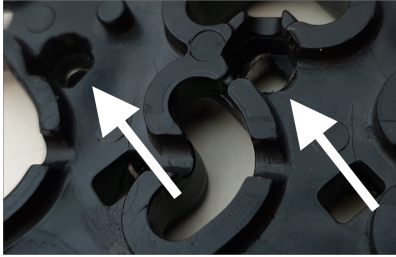
- Grid Guard Flooring Tiles, Corners and Edges
- Grid Guard Energiser
- A flat, level floor surface.
- Pliers, small adjustable wrench or spanner set
- Flat-head screwdriver to ease connection of the tiles and bend tabs on bridges
- Handsaw if setup includes internal corners
- Plumber's PVC pipe adhesive to attach edges and corners in situations with heavy traffic

Tiles And Edges



How To Lay The Flooring

1. Start by placing a tile near a socket in the area you want to cover. This first tile will be the Power Tile; you may have already been supplied with one with the bolts fitted. It is best positioned in an area where there will be less foot traffic and where it is unlikely to be driven over. It is also ideal to position it in an area where rats would need to cross the Grid Guard to reach it, in order to reduce the risk of them chewing the wiring. Don't turn on the energiser until everything is set up and you reach the end of the instructions.
2. Connect the Energiser cables to the Power tile. If you haven't been supplied with a Power Tile with the bolts pre-fitted they are simple to fit. Push them through from the back, make sure you use the holes with



hexagonal recesses in the back of the tile as shown overleaf to allow for the head of the bolt. It is very important that the screws are on two different,

unconnected tracks. Please watch the film overleaf for details. If your tile has earth and live symbols as shown below, you can use these to position the connection correctly in the corner of a tile. Ignore all the other symbols in the corners of the tiles, these are not required. The symbols halfway along the sides are to help you position the bridges later on. Don't worry if your tiles don't have the symbols, we will explain how to set it up without them.



3. Add the following to the screws in the correct order;

- A. Washer
- B. Standard nut





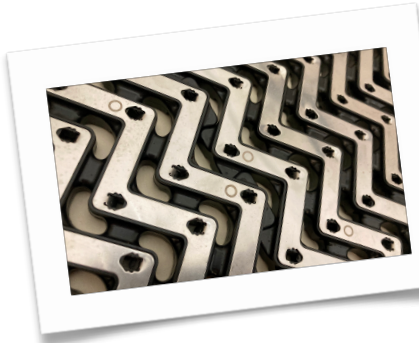
bit.ly/ConnectRatMatCable

- C.Washer
- D.Lug on end of connection wire
- E.Washer
- F.Locking nut (black plastic insert)

4. Screw the nuts on tightly. This is explained clearly in the video. Do not plug in the Energiser until you have finished

laying the flooring.

5. Lay the tiles out over the area you want protecting. If you have tiles with symbols, these will help you position the conductive bridges.



6. Place parallel to the wall with a space around the edge for the rat to exit. If you are laying the flooring across a doorway or other threshold, place the tiles against the wall so the rat can't walk round.

7. You can cut the edge strip down to fit around woodwork if you wish but make sure that the depth is minimal so rats can't get past. Do not cut down the electrified tiles without consulting your dealer as you can lose the electric connection.



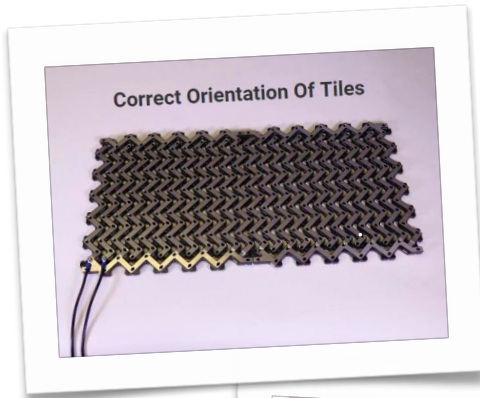
8. There are two holes on each tile and edge to screw the tiles down. It is important to do this if the tiles are driven over or have significant footfall to stop the Grid Guard moving. It is also important if covering a threshold, as in the image below.



bit.ly/FitYourRatMatTiles

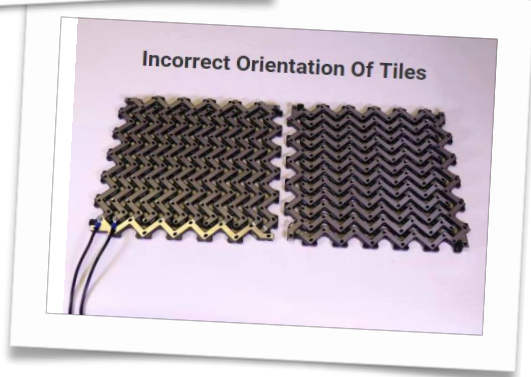
9. Fit the tiles together like a jigsaw with the zig-zags running in the same direction. If you try to lay a tile the



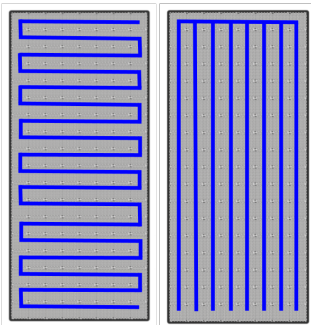


wrong way they will not fit together. This is so that the electrical connections are correct. Hold the tiles horizontally, trying not to

angle them as you connect them together. This allows the contacts to align. Placing the tip of a flat-headed



screwdriver between the contacts as the tiles are pushed together eases connection and prevents over-riding of the terminals.



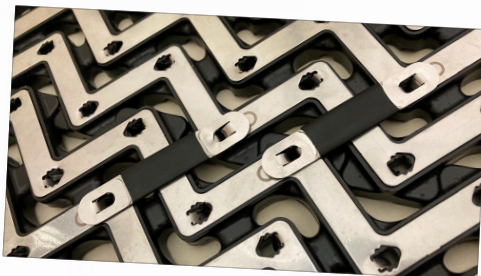
10. Add the conductive surface bridges. These create a robust electrical connection between the tiles. You have enough bridges to connect each tile to one

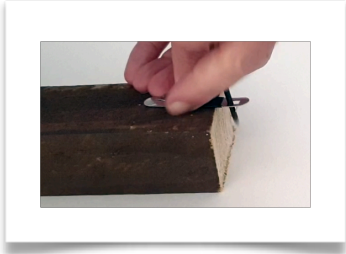
other. If you are using a perimeter or threshold arrangement, simply connect each to its neighbour in a line or circle. For a solid mat, either use a zig-zag pattern or go along one edge then at right angles across all the tiles, as shown in the pictures on the previous page.

bit.ly/3OqhUsd



11. The 'X's and 'O's in the middle of the edges of the tiles show you where to place the bridges. Watch the video and connect them as shown in the photos below.

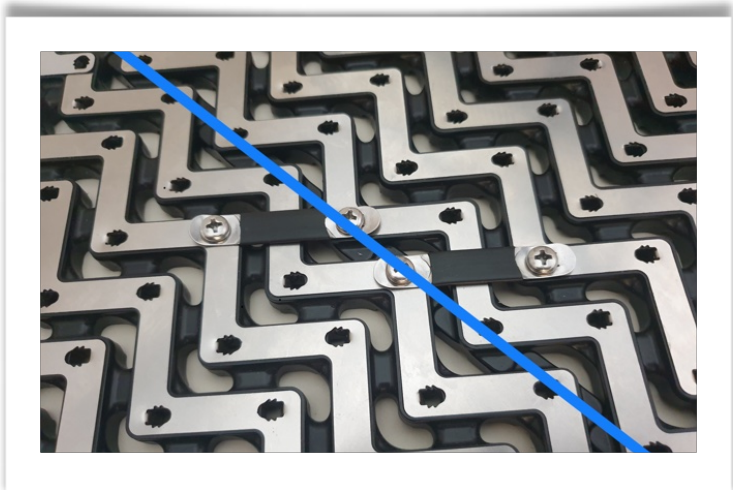
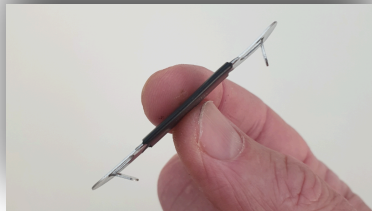




12. Place a bridge on the edge of a piece of wood or book and use a thin screwdriver to bend the tabs down on both ends. Don't bend them to

90 degrees or the bridges won't fit, bend them as shown in the picture below. The film demonstrates this clearly.

13. Place the bridges in the positions shown, making sure you are spanning the joint between the tiles. This is shown by the blue line in the picture.



14. Screw them down taking care not to over-tighten the screws. Only tighten until the underside of the head, the bridge and the surface of the tile are in contact. Do not use a power screwdriver as this will strip the thread and the screws may come out.



bit.ly/CutInsideCorner

15. Add the edging strips and corners. For an inside corner use a hacksaw, jigsaw or sharp shears to cut along the score of two of the edge pieces.

16. Mount the Energiser at least

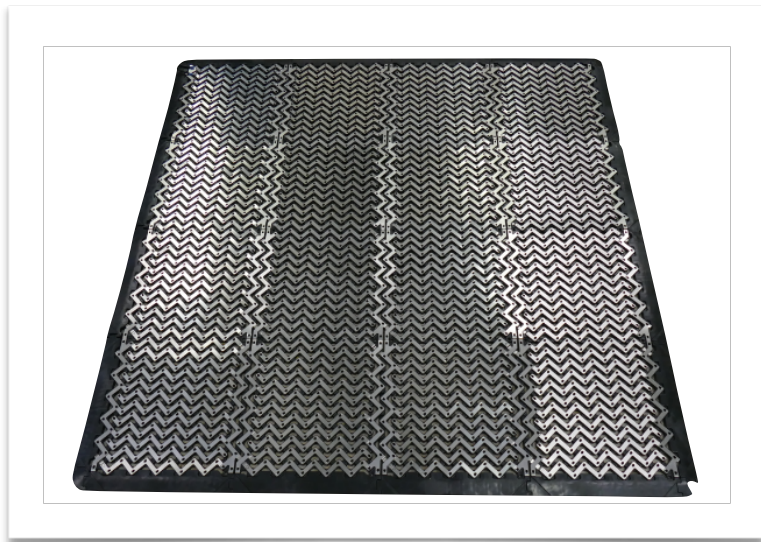
30cm off the ground using the mounting holes shown in the picture on page 20. Ideally run the cables off the ground in order to minimise trip hazard and the risk of damage by rats or mechanical forces. If there is a risk of rodent



bit.ly/FitEdgesAndCorners

damage to the wire then run it through PVC pipe or other resilient conduit. The energiser is resistant to splashes from any direction. Position it where it will

not be immersed or damaged, for example driven over. Do not earth the Energiser or the Grid Guard.

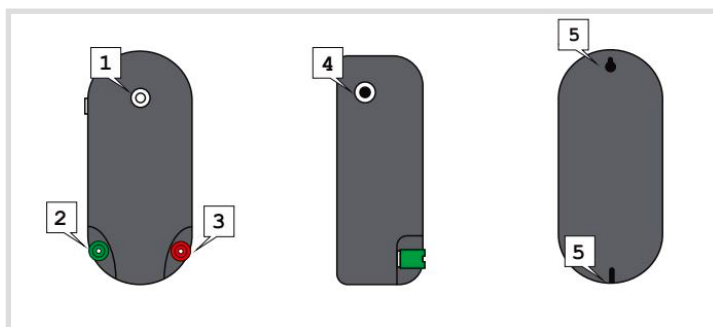


17. Unscrew the red and green nuts on the energiser, remove the washers and place the lugs (round metal connectors with holes) on the screws. Make sure you match up the live and earth symbols shown below on the Energiser with those on the tile. Replace the washers and nuts and do up tightly by hand. Watch the video for a demonstration.



18. When you have finished installing the Grid Guard, have informed everybody in the area not to touch it when activated and informed them how to deactivate it you can plug the power adaptor into the wall and the lead on the adaptor into the power input jack on the Energiser Box. Switching the power outlet on will activate the mat. The Energiser Box has a green light which is constant or flashes when a 3000v pulse is delivered, once every second; this tells you the box is working. There may be a click or the box may be silent, use your electric fence tester to check the tiles are live.

bit.ly/ConnectYourEnergiser



Key

- 1. Pulse/battery indicator
- 2. Ground connection terminal
- 3. RatMat connection terminal
- 4. Power input jack
- 5. Mounting holes

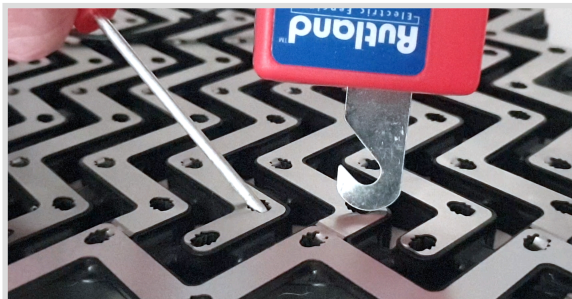
Testing Your Grid Guard

Use the electric fence tester supplied with your energiser to check all the tiles are working. If you are using a digital tester, make sure you put the live electrode on the live terminal and the earth electrode on the earth terminal on the tiles. If the voltage is reading lower than you would expect try the electrodes the other way round. The highest reading is the correct one.

bit.ly/TestRatMat



Sometimes contacts can be bent apart during fitting, leading to a poor connection. Also, during use, grit may force itself between the tiles if they are mounted on a surface which is not solid. In these situations it is important to test the tiles to check that they are active, although addition of the bridges will solve these problems. We also recommend testing regularly in areas with heavy traffic or if there is visible damage to a tile. Damaged tiles in a full mat can continue to be effective as electricity will conduct around the damaged area.



Cleaning Your Grid Guard

Your flooring can be swept, vacuumed and pressure washed.

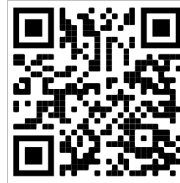


Do not paint, cover or allow debris to accumulate on the surface as this will act as a bridge and affect the function of the mat. If the metal is not exposed it will not deliver a shock to a rodent when required. The Grid Guard is not suitable for areas where a high volume of debris is

continuously deposited on the floor as this will prevent the mat from working. The surface needs to be kept reasonably clear to maintain function.

Troubleshooting

If the green light on the Energiser does not come on please ensure that the connection instructions



bit.ly/CleanRatMat

have been followed correctly. If this does not remedy the situation test the electrical socket by plugging in another appliance to ensure it is functioning. If the energiser is on but the tiles are not live check that you have not connected both the energiser connection cables to the same track on the tiles. This will short the system. Make sure you watch the 'How To Connect The Grid Guard Cable' and 'How To Connect The Grid Guard Energiser' videos carefully and follow the instructions.

Problems with voltage drop across the surface of the system are resolved by adding the bridges to the surface. In most situations, a single line of tiles across a threshold or as a perimeter is highly effective at keeping rodents away. Occasionally, an extra row or two may need to be added in order to fully exclude rodents. Contact your dealer or Grid Guard using the details at the end of this manual if you need further assistance.

Arcing

Arcing may occur on the Grid Guard in certain situations. This can be seen as an electrical spark, a brief flash or heard as a 'crack'. It does not cause a problem from a functional or safety point of view; it is a cosmetic problem.

Arcing occurs commonly in many electrical items; every time a light switch



is used, a vacuum cleaner is switched on or a car engine is started arcing occurs. Arcing is considered normal and unavoidable in electrical appliances. Using the supplied 3 kV energiser and adding the bridges will usually solve arcing. If it is occurring at the joints between the tiles, or if there is a voltage drop across the tiles and you are not using the surface bridges, follow the video guide to explain how to stop it.

Health And Safety

The shock from the Grid Guard is safe for humans and animals. It is far less powerful than the electric fences used to control large animals in public areas on farms but the shock is unpleasant and should be avoided. However, do not fit the flooring where children or pets can come into contact with it.

If the flooring becomes wet from a leaking pipe or other spillage, remember that you may be at risk of an electric shock from the liquid, however this is unlikely to happen. In tests, water in contact with the mat did not transfer a shock 10cm from the flooring. You are safe to approach up to 10cm from the mat wearing dry shoes or wellingtons. Avoid contacting the liquid and deactivate the mat before cleaning it up.

It is essential that the area is correctly surveyed and the system designed and installed correctly in order to ensure that the Grid Guard remains safe and effective in use. Avoid installing in areas that are prone to flooding

as the system will not work and there will be an increased risk of electric shock.

The ground may need to be levelled, elevated or have additional drainage in order to be suitable for the system to be installed. Always follow the instructions and relevant safety legislation and guidelines.

You must only use our components with Grid Guard and these components must not be used with any other products unless expressly recommended by us.

Do not connect more than one Energiser to an area of Grid Guard or connect the Grid Guard to earth.

Do not install in areas where the presence of explosive gases, vapours, liquids or excessive dust is possible. In these situations it is advisable not to use any electrical equipment as even a light switch can create an electrical arc and be a source of ignition.

Install the device at least a metre away from electrical equipment in order to minimise the risk of interference and at least 3 m horizontal distance from power lines supplying less than 1000 V and 15 m horizontal distance from power lines supplying over 1000 V.

It is the responsibility of the customer and user of Grid Guard to adhere to the safety information given by the installer and to pass on advice to people who come into

the area where the device is in use, according to the Health And Safety At Work Act 1974.

The shock is safe for humans but could cause a person to fall, causing injury if from a height. Take all precautions to prevent this happening, including using a safe work platform. Installation must be performed by individuals who are trained and competent in doing so.

Fit warning notices at every access point to the device.
Test energisers as part of routine Portable Appliance Testing.

The installer should ensure that it is not possible for the energiser to be plugged in inappropriately during installation or maintenance of the system. It is also their responsibility to inform people who come into contact with the device that it should be deactivated prior to working in the area, as well as showing them how to do so.

Relevant legislation includes:

Electricity At Work Regulations 1989
Management Of Health And Safety At Work Regulations 1999
Health And Safety At Work Act 1974

Declaration Of Conformity To Standards

The Grid Guard Energiser box and wiring components have been tested to all relevant CE and UKCA standards including EN 55014-1:2006 + A1:2009, EN 55014-2:1997, EN 61000-3-2:2006 + A1:2009 + A2:2009, EN 61000-3-3:2008, EN 60335-1:2002 + A11:2008 + A12:2010, 2014/30/EU, 2002/95/EG (RoHS), 2002/96/EG (WEEE) and 2004/108/EC (EMC), UKCA 55014-1:2006 + A1:2009, UKCA 55014-2:1997, UKCA 61000-3-2:2006 + A1:2009 + A2:2009, UKCA 61000-3-3:2008, UKCA 60335-1:2002 + A11:2008 + A12:2010 and deemed to comply to all.

The Grid Guard tiles have been tested to CE EN14041 and UKCA 1404 and the complete system has been tested to EN 62233: 2008 and EN 60335-1:2012+A11:2014+ A13:2017 UKCA 62233: 2008 and UKCA 60335-1:2012+A11:2014+ A13:2017 and 2014/35/EU, model E1, and deemed to comply to all.

For support visit our website at

<https://www.thegridguard.com>

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Manual updated June 2022**

WARNING



**ELECTRIC
FLOORING**



GRID GUARD