



USER MANUAL

# Safety Bonds



**Original Instructions**

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The Safety Bonds shown in the table below represent our standard range of stock items. We are able to supply any length bonds with fittings to suit individual requirements, including dedicated labels.

Part No.	Wire Diameter	Bond Length	Accessory	WLL
T2840001	Ø2mm	500mm	M4 x 40 Light Duty Snap Clip	5Kg
T22001	Ø3mm	585mm	M6 x 60 Round Carbine Hook	15Kg
T22101	Ø3mm	630mm	M6 x 60 Round Carbine Hook x 2	15Kg
T2841001	Ø2mm	600mm	M6 x 60 Round Carbine Hook	20Kg
T220025	Ø3mm	585mm	M8 x 80 Round Carbine Hook	25Kg
T2844001	Ø4mm	600mm	M8 x 80 Moving Light Carbine Hook	36Kg
T2844501	Ø4mm	1000mm	M8 x 80 Moving Light Carbine Hook	36Kg
T2820501	Ø4mm	700mm	Karabiner with clip	50Kg
T2830001	Ø5mm	480mm	Karabiner with clip	75Kg
T2830501	Ø5mm	700mm	Karabiner with clip	75Kg
T2849001	Ø3mm	600mm	N/A	100Kg

Our Safety Bond range consists of various crimped steel wire rope bonds. They are designed to be used as a secondary safety device in places of entertainment such as museums, event venues and theatres. They are not to be used as a lifting accessory. Safety Bonds are strictly for professional use only. Only competent persons are permitted to install and use Safety Bonds. A competent person in this respect is an individual with relevant technical education, training and/or experience enabling him or her to perceive risks and to avoid hazards occurring during use of a product.

Our Safety Bonds come in various lengths and widths and are suitable for most lighting fixtures. Our standard range comes in a black finish. To comply with the relevant safety standards all Safety Bonds must be marked with a working load limit. In the interest of traceability, they must display a serial number, company name and contact details, and these shall be printed on a heat shrink sleeve.

The load capacity differs depending on the bond. Special attention has been given to safety. Therefore, each batch of bonds are given their own test certificate. Depending on the application or local applicable legislation, maximum working loads can be chosen. Bonds are manufactured in-house at our UK factory and samples are regularly tested for quality assurance.

We can supply a full range of bespoke Safety Bonds to suit individual customer specifications. When ordering bespoke bonds note the bond length is from loop to loop excluding the hooks. If a hook is specified with a soft loop, the soft loop will be large enough for the hook to pass through. A thimble loop will allow the hook to be attached to the thimble loop. Special loop sizes can be made upon request. Our technical sales team will advise the wire diameter and hook specification depending on the working load limit required.

All communications will be carefully considered for future revisions of this manual and changes to our products.

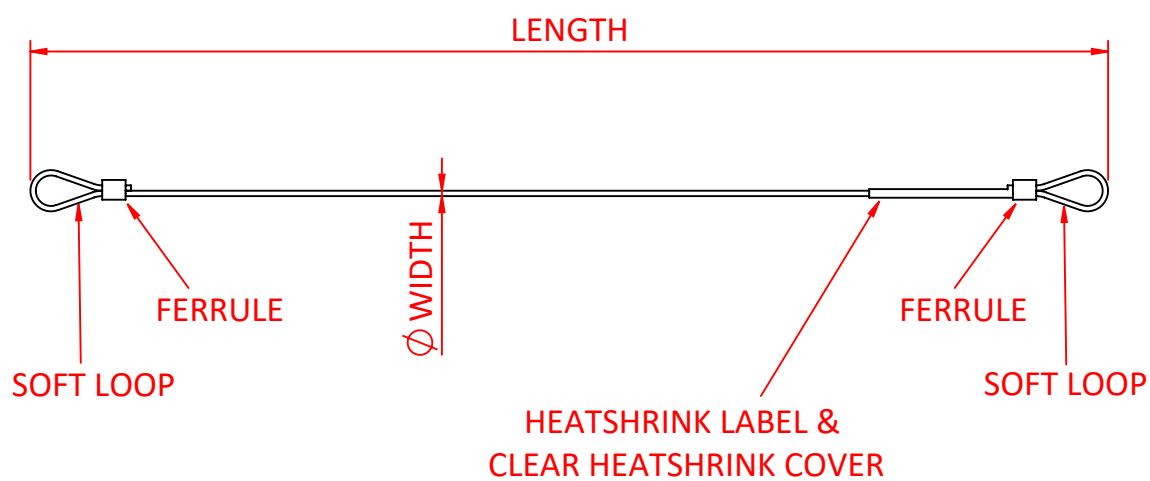
- Safety Bonds can be operated in -40° Celsius up to +100° Celsius.
- When used permanently outdoors it is advised to use the versions with stainless steel hardware in order to avoid galvanic corrosion.
- For salt water environments, please use our stainless bond range.
- When Safety Bonds are used as part of an outdoor lifting system special factors such as ground condition and profile, wind loading, water accumulation on temporary structures and other criteria shall also be taken into account.
- The use of Safety Bonds is the sole responsibility of the user.
- To use the Safety Bonds the user must also observe the safety regulations to be found in this manual.
- All persons who use and service Safety Bonds have to be acquainted with this manual and must be informed about their potential hazards.
- It is also imperative to observe the local accident prevention regulations and/or occupational health and safety regulations.
- The manufacturer is not liable for indirect consequential damage and financial loss. The manufacturer shall not be liable for any changes made to the device nor for any damage resulting from such changes.



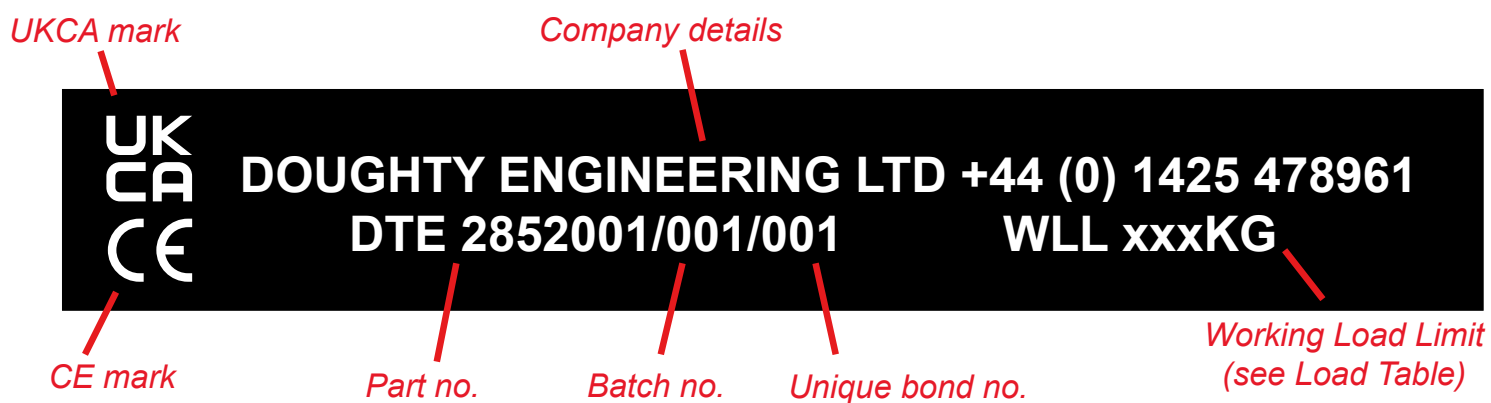
### Warning

**Any use other than that mentioned is considered to be a case of misuse. The user/operator and not the manufacturer shall be liable for any damage or injury resulting from such cases of misuse. The use of bonds for lifting purposes is explicitly excluded from the intended use.**

### TYPICAL SAFETY BOND



### TYPICAL SAFETY BOND LABEL



### Safety Instructions:

For health and safety reasons people assembling, disassembling, transporting, maintaining and cleaning the bonds should wear adequate Personal Protection Equipment such as, but not limited to: gloves, hard hats and safety shoes. In line with the use of PPE organisational measures may need to be implemented to keep the area beneath installations clear of personnel.

- Do not exceed the working load limit labelled on the bonds.
- Make sure the resulting forces on the supporting structure are approved by a competent person.
- When loads are using electrical power, equip-potential bonding shall be put in place.
- Bonds shall be inspected by a competent person as often as required but with a minimum of once a year.
- Inspect equipment before every use. Damaged bonds must be taken out of service.
- Ensure drop for shock load does not exceed 300mm
- Ensure bond is correctly fitted to object using appropriate location points.
- Do not attempt to choke, tie, shorten or knot Safet Bonds
- Do not use Safety Bonds in acidic conditions without consulting the manufacturer.
- Do not use inappropriate attachment points.
- Do not use Safety Bonds as general lifting equipment
- Do not use Safety Bonds at temperatures above 100°C or below minus 40°C without consulting the manufacturer.



### **SAFETY BONDS USED AS A LIFTING ACCESSORY:**

**2006/42/EC** - Machinery Directive.

**BS EN 13414-1: 2003 + A2: 2008**

**BS EN 12385** - Steel Wire Ropes - Safety

**BS EN 13411** - Terminations for Steel Wire Rope - Safety

### **TRANSPORT AND STORAGE**

- Before bonds are put into storage they shall be checked for defects. Defective clamps shall be clearly marked and put aside in such a way they cannot be re-used.
- Ensure the product is stored and kept in a dry, ventilated environment to avoid corrosion.
- Store safety bonds on a rack and not lying on the ground.
- Use appropriate packaging to prevent damage to parts and threads when transporting bonds.



#### **Warning**

**Do not attempt to alter, modify or repair a safety bond. Refer any issues to a competent person.**

## COMMISSIONING

- The bonds are not intended to serve as a means to secure electrical bonding and any fixtures must be grounded in accordance with accepted electrical practices.
- Do not use bonds in the immediate vicinity of pyrotechnics.
- If used in an outdoor environment, the support structure must be fitted with earth protection against lightning.
- Once fitted check that all connections are properly made.
- Check if all parts are in good order.

**Safety Bonds are to be checked for issues listed below, and if found, they are to be removed from service:**

- **Damage to labelling – illegible.**
- **Damage to wire – kinks or loose strands.**
- **Damage to thimbles – deformed shape.**
- **Damage to hook – deformed shape & not opening or closing correctly.**
- **Damage to ferrule – gouges or split.**

**INITIAL INSPECTIONS** - When first acquired, whether they are new or used, Safety Bonds should be inspected and a record of the inspection maintained.

**REGULAR INSPECTIONS** - Regular visual inspections should be carried out. Regular inspections should be performed by a competent person and should be carried out prior to each incident of use.

**PERIODIC INSPECTIONS** - Periodic visual inspections should be carried out and a record of the inspections maintained. Periodic inspections should be performed by a competent person and should be conducted at least once each year or in accordance with an inspection routine established by a qualified person. Bonds which are subject to any accident must be inspected according to the requirements as per periodic inspection.

## INSPECTION FREQUENCY

**BONDS IN REGULAR SERVICE** - Bonds in regular service should be subjected to regular and periodic inspections.

**PERMANENT INSTALLATIONS, STATIONARY** - Periodic inspections should be carried out on all bonds that are permanently installed in a stationary (not moving) configuration. The frequency of inspections should be determined on the basis of the prevalent conditions.

**PERMANENT INSTALLATIONS, MOVING** - Periodic inspections should be carried out every three months, or in accordance with an inspection routine established by a qualified person, on all bonds that are installed in a permanent configuration where movement of the truss system is an integral part of use.

**RECORDS** - Records of initial inspections and periodic inspections should be kept by the owner for each bond and should be signed and dated by the person carrying out the inspections.



### Warning

**In the event of re-sale and/or hire of equipment, this information must be relayed to the end user.**



### Safety Instructions

Although under normal use and environmental circumstances, bonds need little maintenance, for safety reasons, all parts must be checked regularly for damage, cracks and corrosion.

### NOTICE

Bonds shall be checked in compliance with the local law by a competent person. Checking shall take place as often as required but at a minimum of once a year. If in doubt contact the manufacturer.

- Approved personnel must carry out a visual and functional test before every useage.
- Check all components for damage and corrosion. Remove item from service if discovered.
- Only use hot water and soap to remove dirt from Safety Bonds – DO NOT use abrasive fluids.
- Approved personnel must carry out more detailed inspection and testing of the product on a regular basis depending on the usage of the product.
- Written records should be kept from the date the product was put into operation.
- Safety Bonds are for single use only. Discard once item has encountered shock load.



## Warning

- The installer/operator must read and understand the User Manual before using the equipment.
- Operators shall be adequately instructed and fully understand the safe use of the equipment before use.
- Failure to carry out maintenance as necessary, including the replacement of bonds to the correct standard could render equipment unsafe and the manufacturer cannot accept any responsibility in this respect.
- DO NOT modify the equipment as this could lead to a critical failure.
- DO NOT use this equipment for a purpose that it is not intended. This could lead to a failure of the equipment and a risk of falling objects.

## REPAIRS AND REPLACEMENT OF PARTS

If the Safety Bonds are damaged, contact the manufacturer.

### DISPOSAL

Products that are no longer needed can be scrapped. Preferably remove all steel parts, store part separately before offering them to a scrapping company. The following alloys are used:

- Galvanised Steel
- Q235 Steel
- Q195 Steel
- Q195L Steel
- Aluminium Alloy A7075
- Aluminium MAG2

### WARRANTY

- For a period of 12 months we undertake to repair, free of charge any damage attributable to faulty materials or workmanship, provided that the appliance is forwarded, freight paid, to our works or one of the Doughty appointed service agents.
- The guarantee-period begins on the day of the delivery, proven by a purchase receipt like an invoice or delivery note or their copies.
- The guarantee only is applicable for new equipment.
- The guarantee does not cover damage due to transport damage, negligent handling, overload or parts subject to normal wear and tear. Nor damages that originate from a case of misuse because of non-observance the instructions in this manual.
- The fitting of non-original replacement parts or modifications of design by third parties invalidates the guarantee.
- Guarantee repairs do not renew nor extend the guarantee-period.
- In case of a claim under the guarantee or spare part requirements please contact your Doughty service agent.
- The manufacturer is not liable for indirect consequential damage or financial loss.
- The manufacturer is not liable for any changes made to the clamp or for any damage resulting from such changes.

## Inspection List

Part Number	Serial Number	Date	Signature





Engineering Ltd

### EC-DECLARATION OF CONFORMITY

According to the Machinery Directive 2006/42/EEC Annex II

#### Doughty Engineering Ltd

Crow Arch Lane

Ringwood

Hampshire

BH24 1NZ

Herewith declares that:

#### Safety Bonds

Are in compliance with the following harmonized standards/standards/regulations.

#### Machinery Directive 2006/42/EEC annex II

- BS EN 13414-1: 2003 + A2: 2008
- BS EN 12385 Steel Wire Ropes - Safety
- BS EN 13411 Terminations for Steel Wire Rope - Safety

Signed for and behalf of **Doughty Engineering Ltd**

Name **Dan Phillips**

Position **Company Director** being the person responsible appointed by the manufacturer.

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**Note:** Whilst every effort has been made to ensure that the information contained within this manual is correct, Doughty Engineering does not accept any liability for errors or omissions. Specifications and technical data are intended for guidance purposes only and may vary.