DONAGHYS

User Instruction Manual

Response LSK Rope 10.5 mm

Response LSK Rope 11.0 mm

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Foreword

This User Instruction Manual presents the instructions for use as mentioned in the Council Directive of 21 December 1989 on the approximation of the laws of the Member States relating to personal protective equipment 89/686/EEC (OJ L399, 30.12.1989, p. 18) and all its related European Standards and regulations. This User Instruction Manual has been drawn up in conjunction with all relevant requirements of European Standard EN 365:2004.

Product Identification

1. LSK 10.5 mm

Commercial Name:	Response LSK 10.5
Reference:	Response LSK Rope 10.5 mm
Type of PPE:	A
European Standard:	EN 1891:1998
Class:	Prevention of falls against heights

2. LSK 11.0 mm

Commercial Name:	Response LSK 11
Reference:	Response LSK Rope 11.0 mm
Type of PPE:	A
European Standard:	EN 1891:1998
Class:	Prevention of falls against heights
Australian Standard:	AS4142.3-1993

Legal Notice

The Response LSK Rope fully complies with European product safety legislation for CE marking. The Response LSK Rope EC type examination has been carried out in conformity with EN-365 and EN-1891. Both the LSK 10.5 mm and LSK 11.0 mm models were subjected to an EC quality control system for the final product as required in Article 11(a) of the Personal Protective Equipment Directive 89/686/EEC.

Criteria procedure

Legislation:	89/686/EEC Personal Protective Equipment
Article/Annex:	Article 11(a), EC Quality Control System for the Final Product
Products:	PPE sample for protective equipment against falls from a height

Notified Body in charge of manufactured PPE control

Notified Body:	Number 2233
Name:	GÉPTESZT Termelőeszközöket Felülvizsgáló és Karbantartó Kft.
Full Address:	Jablonka Street 79 H-1037 Budapest Hungary

Notified Body in charge of EC type examination

Notified Body:	Number 0082
Name:	Apave SudEurope SAS
Full Address:	CS 60193 13322 Marseille Cedex 16 France

Table of Contents

Product Description

1. General Description

This product description regards both the LSK 11.0 mm and LSK 10.5 mm.

2. Intended Use

The Response LSK Rope – Low Stretch Kernmantle Rope – is designed for use in rope access applications like rescue, controlled descents, and cave exploration. The Response LSK Ropes are used with special ascent / descent clamping devices that control lowering and raising in various applications. The Response LSK Rope must be checked routinely for damage to the cover. The cover is most susceptible to damage from sharp objects and high frictional usage.

Warning! *This equipment may not be used outside of its limitations or for any other purpose than its intended use as described above.*

Diameter, *D*:	LSK 10.5: measured *D* 10.7 mm
	LSK 11.0: measured *D* 11.4 mm
Rope Classification:	A

Warning! *If type B ropes are chosen, users should be aware that the level of performance will be less than that of type A ropes; greater care will be required in protecting against the effects of abrasion, cuts, general wear and tear, etc. In use, great care should be taken to minimize the possibility of a fall.*

Warning! *Type A ropes are more suitable for use in rope access and work positioning than type B ropes.*

Warning! *For ropes used for protection during any free climbing activity in rope access, rescue or speleology, other European Standards shall be taken into account, e.g. EN 892 Dynamic mountaineering ropes.*

Safety Warnings

3. Medical

Warning! The Response LSK Rope should not be used in case of medical conditions that can affect the safety of the equipment user. Such conditions include but are not limited to:

- Heart disease or hypertension
- Peripheral Vascular Disease
- Bleeding Disorders
- Diabetes
- Severe back, neck, or shoulder problems
- Severe arthritis or tendonitis
- All forms of epilepsy, seizures or blackouts
- Impaired balance
- Severe hearing loss
- Need for medication that affects alertness, balance, judgment, or vision
- Psychiatric illness
- Anaphylactic shock

4. Safety

Warning! *This equipment is to be used only by persons who are competent and trained to do so safely.*

5. Rescue Plan

Warning! *A rescue plan for prompt rescue and self-rescue capable of dealing with any* kind *of emergency that can arise is to be put in place. The rescue plan must deal with the recovery and possible treatment of an injured or suspended person. Prompt rescue of a suspended person is vital as possibly fatal suspension traumas can occur.*

6. Alterations

Warning! *No alterations or additions shall be made to the Response LSK Rope without prior written consent from Donaghys Pty Ltd/Donaghys Ltd. Repairs may only be carried out in accordance with the procedures as set out by Donaghys Pty Ltd/ Donaghys Ltd.*

7. Limitations

Warning! *This equipment may not be used outside of its limitations or for any other purpose than for what it is intended use as described above.*

8. Personal Issue Item

Warning! *The Response LSK Rope is a personal issue item, and may not be used by more than one person at once.*

9. Compatibility

All karabiners, lifting tackle, safety lines, restraint systems and safety devices must comply with European Standards EN 795 (rigid/flexible anchors), EN 354 (lanyards), EN 355 (energy absorbers), EN 358 (belts for work positioning and restraint and work positioning lanyards), EN 360 (retractable type fall arresters), EN 361 (full body harness), EN 362 (connectors) and EN 363 (fall arrest systems) to ensure complete compatibility.

10. Combination Use

Warning! *The following dangers may arise when using the product in combination with these equipment items:*

Warning! *Dangers may arise by the use of combinations of items of equipment in which the safe function of one is affected by or interferes with the safe function of another.*

Equipment item	Possible Danger
Rigid anchors	If anchor is not capable of supporting 22 kN, fall could occur.
Energy absorbers	Toothed, lock-on type energy absorbers can cause serious rope damage. Always be aware of the length that the energy absorbers will extend.
Belts for work positioning and restraint	Belts should not be used for work support as the risk of injury during fall arrest is greater than that of a full body harness and suspension time is limited. Make sure the belt is worn properly.
Work positioning lanyards	Longer lanyards used as backup devices will result in a greater fall distance. The lanyard should be as short as possible and should be attached directly to the designated anchor point.
Retractable type fall arresters	Falls over an edge may cause the retractable lanyard to break, the braking system to overload to failure, or the fall not to be arrested in the distance available.

Equipment item	Possible Danger
Full body harness	Incorrectly fitted harnesses can result in injury or death. Users should connect the fall-arrest line to the attachment point that will provide the best protection in the current situation. Pay careful attention to potential fall distance, potential impact with surrounding structures and body position after a fall.
Connectors	The use of incompatible components may result in failure and “roll-out”. Snap hooks should be of the double action type (and should not be connected to one another) and screw connectors should always be favored over snap link connectors.
Fall arrest systems	Incorrect selection, installation and use of the equipment may result in serious injury or death.

11. Equipment Check

Before usage of the Response LSK Rope, users must carry out a pre-use check, in order to ensure that the Response LSK Rope is not damaged.

Warning! *The Response LSK Rope should be retired from use immediately in cases where:*

1. *There is any doubt about safe usage in its current condition;*
2. *It has been used to arrest a fall.*

In these circumstances, the Response LSK Rope should not be used again until the user has received written confirmation by a competent employee of Donaghys Pty Ltd/Donaghys Ltd stating it is acceptable to do so.

The maximum lifetime for this type of rope is 5 years, whilst the combined storage and use time must never exceed 10 years – regardless of storage and use history. The procedures should be carried out when inspecting the Response LSK Rope:

- Inspect the entire rope – start at one end and work down centimeter by centimeter
- Make loops at random intervals – check for inconsistencies in both the sheath and the core
- Make sure the Response LSK Rope is dry – a wet rope can prove difficult to inspect
- Keep a log – write down all observations in a rope log book (see page 12)
- One inspector per rope – do not split tasks

Warning! *Do not use this rope if it has not been properly inspected prior to use.*

12. Types of Damage

Repeated loading, abrasion, humidity and exposure to UV radiation all degrade the Response LSK Rope over time. The Response LSK Rope must be retired if it has an uncertain history or it has been subjected to uncontrolled and/or excessive loading, excessive heat, direct flame or severe abrasion. The following are some key aspects that should be checked:

- **External Abrasion** – the outer yarns on the sheath of the Response LSK Rope tend to break and fibrillate, creating a “furry” layer. This layer usually protects the yarns below. If the layer does not stabilize, it can lead to greatly diminished strength.

  Warning! *A rope with an excessively worn sheath should be retired immediately.*

- **Internal Abrasion** – the Response LSK Rope should be opened up at random intervals so as to inspect the core. If the core appears damaged in any way, abrasive particles may have entered the Response LSK Rope and caused irreparable damage. Depending on the severity of the abrasion, the Response LSK Rope may have to be retired.
- **Glazing** – excessive heat, generally as the result of friction, causes the outermost yarns to melt and weaken. Depending on the severity of the abrasion, the Response LSK Rope may have to be retired.

- **Inconsistencies** – any flat spots, lumps or thin areas found upon inspection could indicate internal damage. These are usually the result of shock loads and/or overloading. The Response LSK Rope should be retired immediately
- **Discoloration** – this can be the result of dirt or chemical exposure. If chemical exposure is suspected, the Response LSK Rope should be retired immediately. Other visual effects of chemical contact include a “powdery” or “dusty” appearance

  Warning! *The effects of chemical exposure are not always visible. It is imperative to keep ropes out of contact with chemicals.*

Portions of rope showing the aforementioned faults near the end of the Response LSK Rope can be cut off and resealed with a hot knife

Warning! *Cut and resealed ropes must be remarked with the altered length.*

13. Anchor Point

Special care must be taken so as to minimize sideways or pendulum falls. All slack between the anchor point and the user must be taken up. The anchor device or structural member chosen to serve as an anchor point shall possess at least the following capacities:

- Minimum required tensile strength of 12 kN
- The Response LSK Rope is to be positioned above or at the same height as the user. If the rope comes into contact with a sharp edge or rock between the anchor point and the user, an appropriate rope protector must be used in order to safeguard the rope from abrasion and other damage that might occur.
- When constructing the anchor system, a focal point must be created that is in line with the direction of force.
- When in doubt about a single anchor’s strength, multiple anchors must be used, always favoring the strongest anchor.
- Ensure that the angle between ropes connecting the focal point to the anchor is less than 90°.
- Avoid an anchoring system that loads a karabiner in any direction other than directly along its spine.
- Ensure that the anchor itself does not have any sharp edges that could damage ropes or tape. Use protection where necessary.

14. Harness Attachment

The Response LSK Rope is to be connected to a harness by a fall arrest attachment point in the following fashion:

- Use a karabiner that conforms to European Standard EN 362:2004 and a suitable knot (e.g. tight figure of 8) with a tail of at least 10 cm.
- Avoid loading a karabiner in any direction other than directly along its spine.

15. Fall Arrest

Warning! *The anchor device (EN 795) or anchor point should always be positioned, and the work carried out in such a manner, as to minimize both the potential for falls and potential fall distance. The anchor device is to be placed above or at the same height of the user at all times.*

Warning! *A full body harness is the only acceptable body holding device that can be used in a fall system.*

16. Free Space

Warning! *Before each occasion of use, free space required beneath the user needs to be verified, in order to ensure no collision with the ground or other obstacle will occur in case of a fall.*

17. Hazardous Environments

In order to ensure proper functioning of the Response LSK Rope, hazards that may affect the performance of the Response LSK Rope and corresponding safety precautions have to be observed. It is imperative that the Response LSK Rope does not come into contact with chemical reagents. Particular care needs to be taken when working in the presence of acids, oxidizing agents, oils and/or petrol. Though the Response LSK Rope is generally resistant to most solvents, a pre-use tensile strength test should be carried out if they come in contact with any chemical reagent.

The following precautions are to be taken into account when dealing with specific hazards:

Hazard	Precaution
Dust/Grit	Avoid contact with dust/grit by not placing rope on ground and storing rope in suitable rope bag.
UV Radiation	Avoid prolonged sunlight exposure by only exposing rope to UV radiation during use and storing rope out of direct sunlight.
Moisture	Avoid contact with all forms of moisture (especially saltwater). Do not leave rope to lie in water and store in dry area.
Chemicals	If rope is in vicinity of chemicals (whilst not in use), rope should be stored in suitable, sealed rope bag.

18. Storage and Transportation

The Response LSK Rope is to be stored in a clean, dry place at room temperature, away from direct sunlight, chemicals, petroleum-based products and other liquids. The Response LSK Rope should be exposed to air; not sealed in containers.

When coiling the Response LSK Rope, it is important not to twist or bend it unnecessarily. The best and easiest way to coil the Response LSK Rope is in a figure-of-eight hank. When uncoiling the Response LSK Rope, lay each loop of the hank down loosely. If there are any rope ties, it is important to remove them by hand and not with the aid of a knife, pair of scissors or any other sharp object.

When transporting the Response LSK Rope, using a rope bag to protect the Response LSK Rope from dirt and unwanted twisting is recommended.

19. End Markings

Response LSK Rope has been labeled in accordance with the applicable requirements. Please ensure that your product is labeled with the information as indicated below:

- Official CE logo
- Reference to the European Standard that has been passed for this rope (EN 1891:1998)
- Diameter in millimeters
- Trademark
- Model Name
- Type
- Serial Number
- Constituent materials

20. Meaning of Symbols

Symbol of European Conformity. The CE symbol declares that the product is in compliance with the safety requirements of the applicable European standards. The number after the CE symbol identifies the relevant accredited testing lab.

2233 The identification number of the Notified Body involved with the production control phase

The User Instruction Manual must be consulted before use.

EN-1891:1998 This European Standard defines safety procedures for personal protective equipment for the prevention of falls from a height for low stretch kernmantle ropes. Ropes that bear this mark have been deemed to comply with the physical testing requirements.

Warning! *Do not use the Response LSK Rope if it does not legibly show all of the above mentioned markings.*

Internal Marking

Both Response LSK Ropes are internally marked at minimal every 1000mm with the following:

10.5mm & 11.0mm White

SOUTHERN ROPES LTD – <YEAR OF MANUFACTURE>– SPECIFICATION EN-1891:1998 – TYPE A – <MATERIALS> –

11.0mm

DONAGHYS RESPONSE– <FOR STATIC LIFE RESCUE LINES>– SPECIFICATION AS4142.3-1993 & EN1891:1998– <DIAMETER 11MM> –

Further to the internal marker tape, Donaghys add an internal colour marker yarn to denote year of manufacture.

21. Product Life

The average lifetime of the Response LSK Rope depends on the frequency of use:

- Intensive 3 months to 1 year
- Weekly 2 to 3 years
- Occasional 4 to 5 years

Effects on Lifetime

Apart from the visible effects on lifetime (such as cuts, scratches, abrasion and extreme heat exposure, amongst others), there are various invisible effects. These effects include:

- Tensional Fatigue: Result of load applied to the Response LSK Rope. The lighter the load, the longer the LSK Response Rope will remain fit for use.
- Bending Fatigue: Result of flex. This is load related, but can still occur at low tensions. It is important to take this into consideration when working with rollers or sheaves.
- Compressional Fatigue: Causes kink bands in individual fibres, greatly reducing the strength of the Response LSK Rope. In order to avoid this, a small amount of tension must be maintained.

- Creep: Permanent extension as a result of polymer slippage. The rate of creep is directly proportional to heat and load.
- UV Exposure: UV radiation breaks down intra-polymer bonds, weakening the Response LSK Rope.
- Water Exposure: Rope fibres shrink and can lose up to 15% of their strength, increasing elongation.

22. Reselling

Warning! *In case of reselling of the Response LSK Rope, the reseller must provide instructions for use, maintenance, periodic examination, and repair in the language of the country in which the product is to be used.*

Rope Specifications

23. Rope Specifications

Value	Specification LSK 10.5 mm	Specification LSK 11 mm
Measured Diameter, *D*	10,7 mm	11,2 mm
Sheath slippage, *Ss'*	0,3%	0,3%
Elongation, *E*	3,1%	3,2%
Mass of the outer sheath, *Sp*	47%	51%
Mass of the core material, *C*	53%	49%
Mass per unit length, *M*	85 g/m	91 g/m
Shrinkage, *R*	2,4%	2,6%
Static strengths, *F*	23,3 kN	31,9 kN
Material	Sheath: Polyester Core: Polyamide	Sheath: Polyester Core: Polyamide
European Standard	EN 1891	EN 1891

Maintenance Instructions

24. Cleaning Procedures

Warning! *This procedure is to be strictly adhered to.*

Warning! *Soaking causes the Response LSK Rope to expand, resulting in approximately 5% decrease in length. This must be taken into account when determining length.*

- Hand wash: Immerse the Response LSK Rope in clean, cool (less than 30°C) water with mild detergent washing powder for delicate fabrics. Brush with a synthetic brush to remove any dirt.
- Machine wash: Place rope inside fabric bag (e.g. pillowcase) and wash on a gentle cycle (less than 30°C).

  Warning! *Pressure cleaners can force abrasive particles in between the fibres, causing internal damage. Never use pressure cleaners for washing the Response LSK Rope.*
- Drying: ***Warning!*** *The Response LSK Rope must be hung out to dry naturally, away from direct heat and sunlight.*

25. Storage

Warning! *Avoid storage in areas of direct sunlight, moisture and extreme temperatures (above 80°C)*

The Response LSK Rope must be coiled loose in a bag with the ends exposed to avoid twists and knots. Do not let the combined storage and use time exceed 10 years. Store in a clean area as abrasive particles can work their way in between the fibres and cause internal damage.

26. Maintenance

Warning! *Other than provided under "Cleaning Procedures" no maintenance procedures may be carried out on the Response LSK Rope.*

Periodic Examinations

Warning! *The Response LSK Rope must be subjected to regular periodic examinations. The Response LSK Rope must be inspected annually by a competent person and are to be carried out strictly in accordance with Donaghys' periodic examination procedures. The safety of users depends on the Response LSK Rope's continued efficiency and durability.*

Warning! *When carrying out periodic examination procedures, legibility of the product markings must be checked. Product markings must be legible at all times.*

Repair Instructions

27. Repair

Warning! *Do not attempt to repair the Response LSK Rope.*

Warning! *Any repair work shall only be conducted by a supervisor or production manager, who has been authorized by Donaghys Pty Ltd/Donaghys Ltd, and the repair procedure shall be strictly in accordance with the instructions as set out by Donaghys Pty Ltd/Donaghys Ltd.*

Records

28. Equipment Record

Donaghys advises all users to maintain detailed equipment records. For your convenience we have included an example of an equipment record. Please see the table below.

Warning! *It is the responsibility of the user organization to provide and maintain an equipment record.*

EQUIPMENT RECORD				
Product:				
Model & type/identification		**Trade name**		**Identification number**
Manufacturer		**Address**		**Tel, fax, email and website**
Year of manufacture/life expiry date		**Purchase date**		**Date first put into use**
Other relevant information (e.g. document number)				
PERIODIC EXAMINATION AND REPAIR HISTORY				
Date	**Reason for entry (periodic examination or repair)**	**Defects noted, repairs carried out and other relevant information**	**Name and signature of competent person**	**Periodic examination next due date**

Figure 1 — Example of a record