

Safety

GUIDE



ComST 10/14



Work at heights

Suitable for electricians



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SICAME GROUP



Work at height suitable for electricians

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Work at height suitable for electricians

Work at height is the second cause of work accidents with almost 100,000 falls per year, 100 of which are fatal and 8,500 causing permanent incapacity.

The electricity sector is especially involved in a significant amount of work carried out on high structures as varied as high voltage pylons, catenary structures or roofs, whether they are on industrial buildings or on residential housing.

This guide by CATU covers the most representative situations of work carried out by electricians and the necessary equipment that is compliant with the applicable standards. A full kit containing all the equipment required for each situation has been produced to equip you in full compliance with the latest applicable laws.



What the regulations stipulate for work at height:

* **Decree no. 65-48 of 8 January 1965.** Protection must be given against falls from a height of over 3 m.

* **European directive of 1989, amended in 1993 and 1996** « Approximation of the laws of member states relating to personal protective equipment »

« The national provisions relating to safety at work make the use of personal protective equipment compulsory ; many requirements oblige employers to make appropriate personal protective equipment available to their staff in the absence or inadequacy of priority public protection measures ».

« adoption of harmonized standards »

The CE marking is mandatory for all PPE compliant with the standards in force.

* **Decree no. 92-766 of 29 July 1992:** Enforcement decree of the 1989 European directive.



CE

* **Decree no. 2004-924 of 1 September 2004:** « decree relating to the use of work equipment made available for temporary work at height... »

• The priority is the installation of collective protective equipment. When this is not possible, recourse to an item of personal protective equipment against falls from a height is required, whether this is for the purposes of retaining, support, saving, or protecting against falls from a height.

• **Removal of the minimum height of 3 m: after a risk evaluation, protective equipment is required as soon as there is a risk of a falling.**

• A worker must never remain alone so that he can be assisted in a time compatible with the preservation of his health.

• The work at height must never be conducted when the weather or environmental conditions of the work place may compromise safety.

• The use of access and positioning techniques by means of ropes must comply with the following: a working rope, a safety rope fitted with a fall arrestor system, with two separate anchoring points. Workers must be provided with suitable fall arrestor harnesses connected to both ropes. Safe descent/mounting systems with a self-locking system and a mobile fall prevention system must be provided.

• The work must be programmed and supervised so that assistance can be given immediately to the worker in the event of an emergency.

• **The workers must receive suitable and specific training in the operations considered and in the rescue procedures.**



Work at height suitable for electricians

List of the main standards of equipment for working at height

EN 353-1	Fall arrest grab for rigid support
EN 353-2	Fall arrest grab for flexible support
EN 354	Restraint lanyard
EN 355	Shock absorber lanyard
EN 358	Work positioning systems
EN 360	Retractable type fall arrestors
EN 361	Fall arrest harness
EN 362	Connectors
EN 363	Fall arrest systems
EN 813	Sit harnesses

Definitions and recommendations

Fall arrest system

Comprising a fall arrest harness, a linking equipment (lanyard, fall arrestor device, connector, etc.) and an anchoring point.



Information on the dangers of a fall

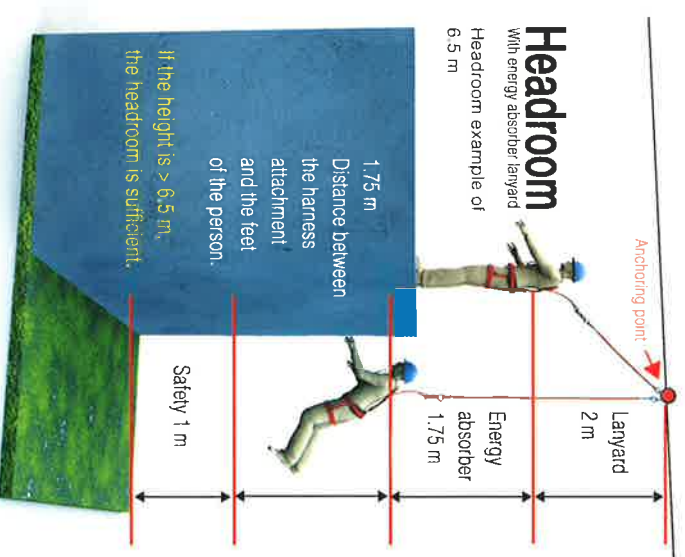
A body experiences high pressure when falling. The permissible force of impact by a man with a harness is 600 daN (approx. 600 kg). A force < 600 daN does not produce significant injuries, in contrast with a force > 600 daN that leads to serious or even fatal injuries. (see EN 363 Fall arrestor).

Recovery procedure

A procedure must be established in the event of a fall to be able to recover the person: in the event that someone falls wearing a harness, an unconscious person can remain so for 10 to 20 minutes, after this, there is a risk of irreversible injuries (tourniquet, blood not oxygenated, etc.).

Headroom

The headroom must always be calculated to choose the equipment carefully. This clearance distance is the space necessary under the user so that he will not encounter any obstacle during a fall (see diagram opposite). **Pay attention** to correctly note the increase in fall arrest for calculating the headroom (max. 1.75m) - specified on the product.



Anchoring point

For limiting the fall risk factor, you must always try to have an anchoring point above the worker's head, or at least on the same horizontal plane. An anchoring point under the user is more dangerous, and requires a larger headroom.

P.P.E checks

(personal protective equipment)

Once a year at most by an inspector, namely a trained and qualified person within the company, or an inspection agency.

User manuals

Always read the equipment user manuals before using the equipment.



Work at height

suitable for electricians

Climbing a pole with a standard insulating ladder

Essential:

- Fall arrest system
- Work positioning system



EN-358
CE

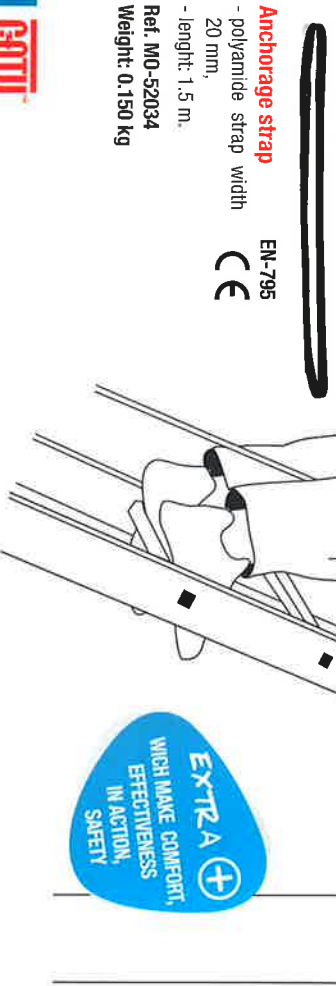
Work positioning and restraint lanyard

Polyamide tether rope Ø 12 mm come along with a double-locking system instantly stops the rope.

- length: 2.0 m

Ref. MO-56009

Weight: 0.750 kg



Anchorage strap

- polyamide strap width 20 mm,

- length: 1.5 m.

Ref. MO-52034

Weight: 0.150 kg

EN-795
CE

EXTRA +
WHICH MAKE COMFORT, EFFECTIVENESS IN ACTION, SAFETY



EN-355
CE

Adjustable lanyard

- equipped with 2 steel snap hooks with automatic locking.

- length: 1.50 m.

Ref. MO-52020

Weight: 1.100 kg



EN-362
CE

Snap hook

locks with threaded ring.

Ref. MO-54

Weight: 0.154 kg



EN-353-2
CE

Rope grab arrester

- "rop chuck" fall arrest,

- with 15 m of rope.

Ref. MO-68/15

Weight: 2.720 kg

Goes up and down without manual intervention



EN-361
EN-358
CE

Quick-connect buckles, 180° rotative work positioning belt

Pro electric full body fall arrest harness

- 2 fall arrest attachment point: dorsal and sternal,

- 2 buckles of work positioning,

- automatic buckles,

- tools holders.

Ref. MO-563-A-(-*) * S,M, XL

Weight: 2.700 kg

Complete set	MO-56009	MO-52034	MO-52020	MO-68/15	MO-54	MO-563-A-(-*)
KIT "EVOLUTION" KIT-HAUT-01-(-*)	✓	✓	✓	✓	✓	✓

* Add size: M or XL when ordering

Each reference can be individually ordered. www.cattullec.com

Work at height

suitable for electricians

Climbing a pole with spliced insulating ladders

Essential:

- Fall arrest system
- Work positioning system



Work positioning and restraint lanyard

Polyamide tether rope Ø 12 mm come along with a double-locking system instantly stops the rope.

- length: 2.0 m

Ref. MO-56009

Weight: 0.750 kg



Snap hook

stainless steel.

Ref. MO-54

Weight: 0.154 kg



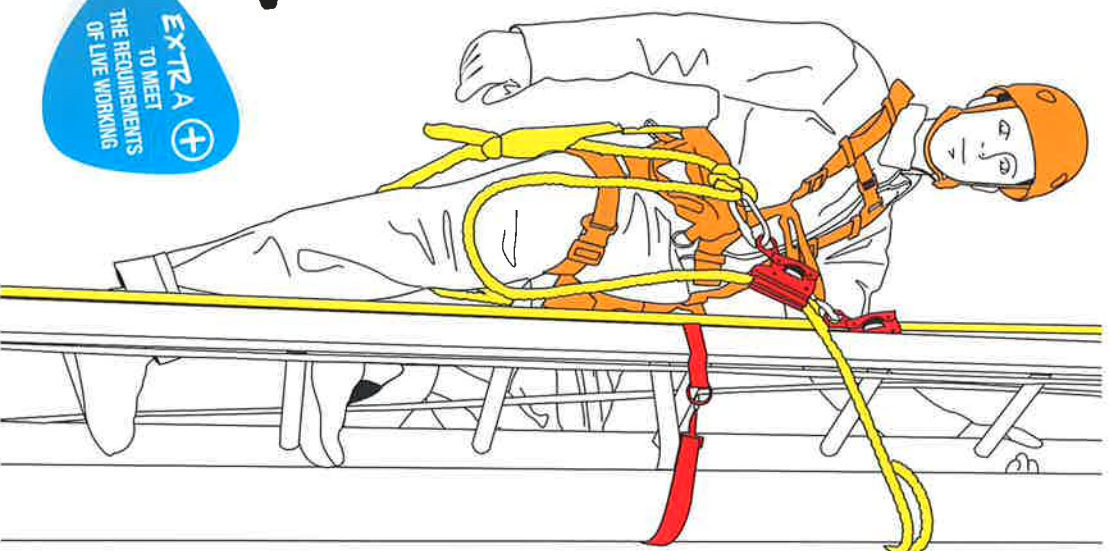
Anchorage strap

- polyamide strap width 20 mm,

- length: 1.5 m.

Ref. MO-52034

Weight: 0.150 kg



EXTRA
TO MEET
THE REQUIREMENTS
OF LIVE WORKING



EN-361
EN-358
CE

Quick-connect
buckles,
180° rotative
work positioning
belt

Pro electric full body fall arrest harness

- 2 fall arrest attachment point : dorsal and sternal,
- 2 buckles of work positioning,
- automatic buckles,
- tools holders.

Ref. MO-563-A-(*) * S,M, XL

Weight: 2.700 kg



EN-353-2
CE

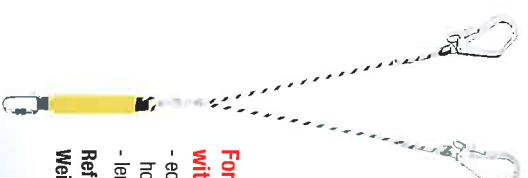
Goes up and
down without
manual
intervention

Rope grab arrester

- "top chuck" fall arrest,
- with 15 m of rope.

Ref. MO-68/15

Weight: 2.720 kg



EN-355
CE

To pass from
an elevator to
an other one
and still
anchored

Forked lanyard with energy absorber

- equipped with 2 steel snap hooks with automatic locking,
- length: 1.20 m.

Ref. MO-54010

Weight: 1.400 kg

Complete set	MO-56009	MO-52034	MO-54	MO-54010	MO-563-A-(*)	MO-68/15
KIT "EVOLUTION" KIT-HAUT-02-(*)	✓	✓	✓	✓	✓	✓

* Add size: M or XL when ordering

Each reference can be individually ordered. www.cablelec.com



Work at height suitable for electricians

Climbing up on towers (railway, metal structures, antenna supports, metallic pylons)

Essential:

- Fall arrest system
- Work positioning system



Additional material

Depending on the height and presence of an anchoring point.



Telescopic stick
Ref. CE-5-90-C
9 m weight: 4 kg
Connector with adaptor for pole
Ref. MO-54005-C

To fetch an anchor point existing before the 1st climb



EN-358
CE

Work positioning and restraint lanyard

Polyamide tether rope Ø 12 mm come along with a double-locking system instantly stops the rope,
- length: 2.0 m

Ref. MO-56009
Weight: 0.750 kg

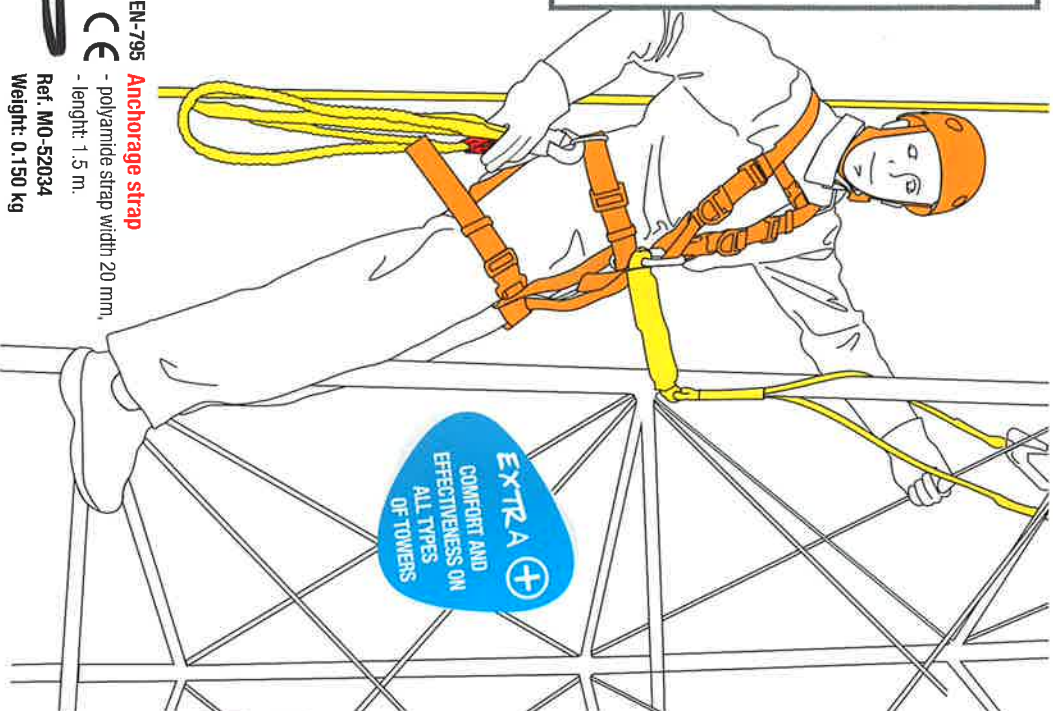
EN-795

Anchorage strap

CE

- polyamide strap width 20 mm,
- length: 1.5 m.

Ref. MO-52034
Weight: 0.150 kg

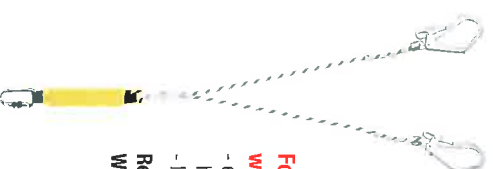


EN-355
CE

Forked lanyard with energy absorber

- equipped with 2 steel snap hooks with automatic locking,
- length: 1.20 m.

Ref. MO-54010
Weight: 1.400 kg



EN-355
CE

Energy absorbing forked lanyard with buckles

- 2 connectors entirely insulated, length of each strap: 1.5 m.

Ref. MO-54020



Completely insulating and with multiple buckles

EN-361
EN-358
EN-813
CE

Comfort and ventral anchoring



Pro electric full body fall arrest harness

- 2 fall arrest attachment point:

- dorsal and sternal,
- ventral snap-hook,
- headboard,
- automatic buckles.

Ref. MO-565 (*) * S,M,XL
Weight: 3 kg

EN-353-2
CE

Rope grab arrester

- "rop chuck" fall arrest,
- with 15 m of rope.

Ref. MO-68/15
Weight: 2.720 kg



Goes up and down without manual intervention

Complete set	MO-56009	MO-52031	MO-54010	MO-565 (*)	MO-68/15
KIT "EVOLUTION"					
KIT-HAUT-04- (*)	✓	✓	✓	✓	✓

* Add size: M or XL when ordering

Each reference can be individually ordered. www.cattulac.com



Work at height suitable for electricians

Climbing using an aerial device

Essential:

- Fall arrest or restraint system



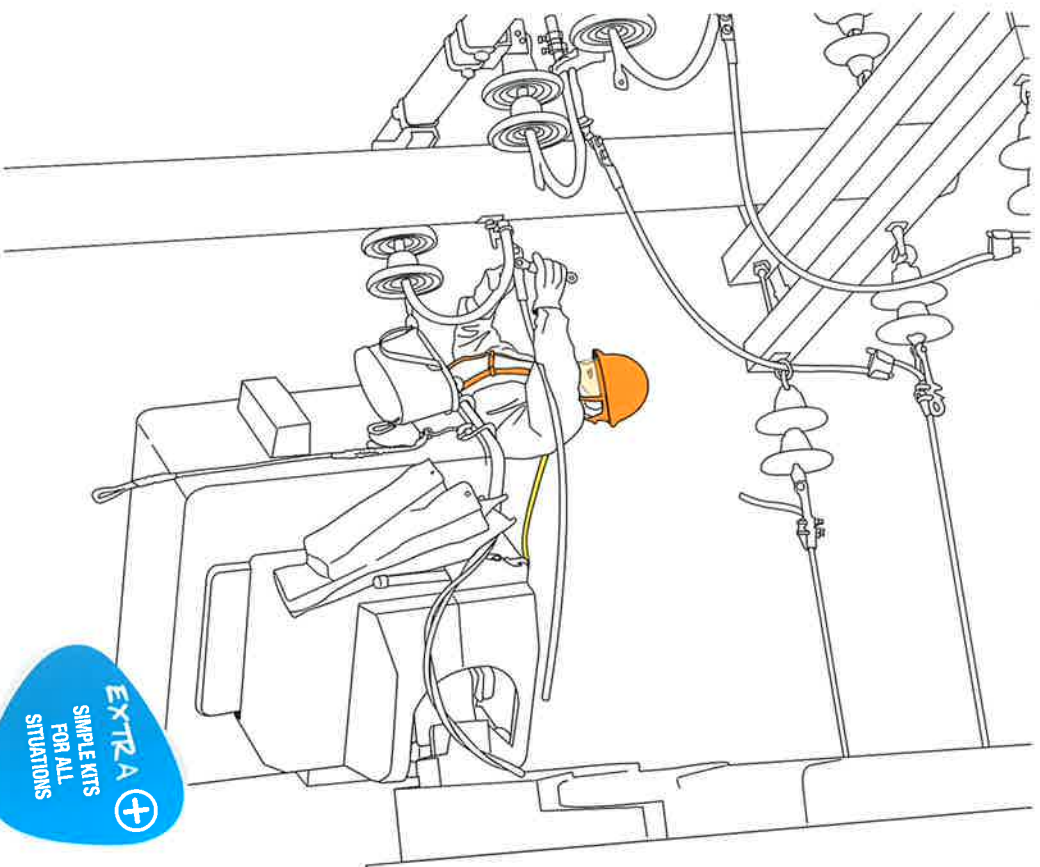
Electricity



Telecom



Industry



EXTRA +
SIMPLE KITS
FOR ALL
SITUATIONS



EN-355
CE

Adjustable lanyard

- equipped with 2 steel snap hooks with automatic locking.
- length: 1,50 m.

Ref. MO-52020
Weight: 1,100 kg



EN-362
CE

Snap hooks

stainless steel.

Retaining rope lanyard

- length: 1,50 m.

EN-354
CE

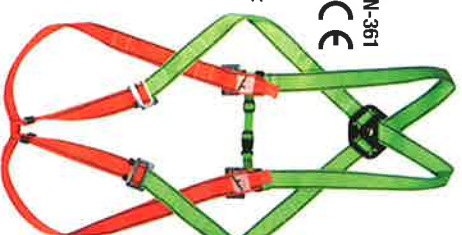
To prevent access
on areas with
risk of falling

Basic body harness

- 2 fall arrest attachment point: dorsal and sternal.
- universal size, adjustable by rectangular buckles.

Ref. MO-70

EN-361
CE



EN-361
EN-358
CE



Full body fall arrest harness

- 2 fall arrest attachment point: dorsal and sternal,
- work positioning belt,
- 2 buckles of work positioning, - one size.

Ref. MO-71
Weight: 1,900 kg

Complete set	MO-52020	Lanyard	Snap hooks	MO-70	MO-71
KIT "EVOLUTION" KIT-HAUT-06	✓				✓
KIT "EVO" KIT-HAUT-10		✓	✓	✓	

Each reference can be individually ordered. www.cattullec.com



Work at height suitable for electricians

Climbing with climbers

Essential:

- Fall arrest system
- Work positioning system



EN-358 Work positioning and restraint lanyard
Polyamide tether rope Ø 12 mm come along with a double-locking system instantly stops the rope.
- length: 2.0 m
Ref. MO-56009
Weight: 0.750 kg



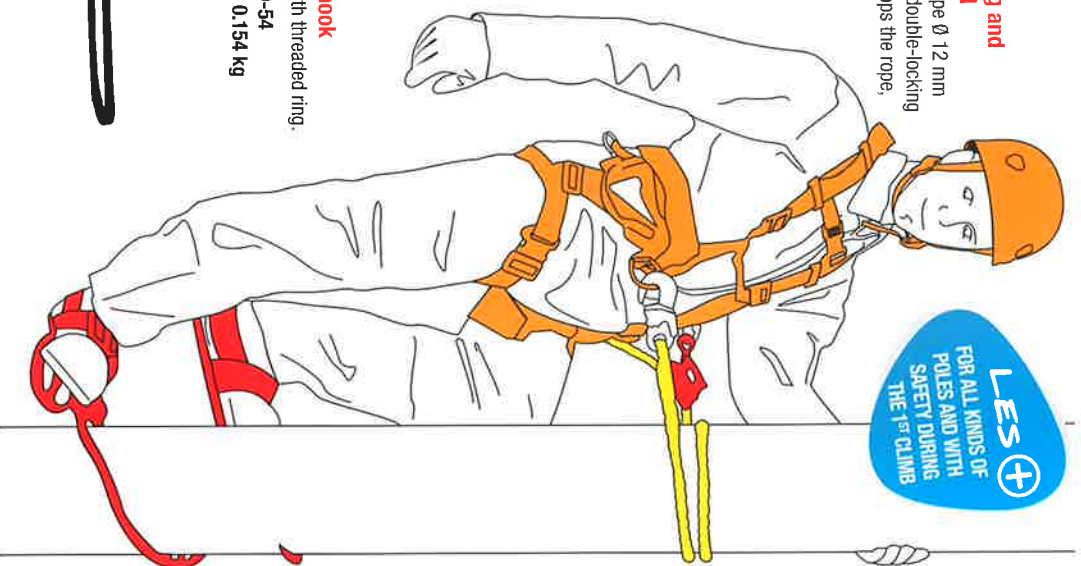
EN-355 Adjustable lanyard
- equipped with 2 steel snap hooks with automatic locking.
- length: 1.50 m.
Ref. MO-52020
Weight: 1.100 kg



EN-362 Snap hook
locks with threaded ring.
Ref. MO-54
Weight: 0.154 kg



EN-795 Anchorage strap
- polyamide strap width 20 mm, - length: 1.5 m.
Ref. MO-52034
Weight: 0.150 kg



Fall arrest function to the 1st climb



EN-795 Mobile Anchor Point

- 90 mm polyester webbing,
- reinforced with 45 mm polyester webbing,
- length: 1.5 m.

Ref. MO-52030-P



EDF-SPS N° 18-632 A ET B

- Mechanical climbers for rectangular shaped concrete poles**
- Automatic locking of jaws by elastic cord,
- used for clamping onto poles spare parts 14 to 42 cm wide.

Ref. MO-17-A
Weight: 9 kg

Automatically adaptation to the pole dimensions



EN-361 Pro electric full body fall arrest harness

- 2 fall arrest attachment point: dorsal and sternal,
- 2 buckles of work positioning,
- automatic buckles,
- tools holders.

Ref. MO-563-A-(*) * S,M, XL
Weight: 2.700 kg

Quick-connect buckles, 180° relative work positioning belt



EN-353-2 Rope grab arrester

- "rop chuck" fall arrest,
- with 15 m of rope.

Ref. MO-68/15
Weight: 2.120 kg

Goes up and down without manual intervention

Forged steel climbers for round wooden poles

- hard forged steel,
- leather belts with cast buckles.

Ref. MO-24
Poles Ø 0.2 m
Weight: 2.600 kg.

Ref. MO-25
Poles Ø 0.25 m
Weight: 2.800 kg.

Ref. MO-26
Poles Ø 0.3 m
Weight: 3 kg.

Ref. MO-35
Poles Ø 0.35 m
Weight: 3.200 kg.



NFS-071-012

Complete set	MO-56009	MO-52034	MO-52020	MO-54	MO-68/15	MO-563-A-(*)
KIT "EVOLUTION" KIT-HAUT-01-(*)	✓	✓	✓	✓	✓	✓
Climbers						
WOODEN POLES	MO-24	MO-25	MO-26	MO-35	MO-17A	
CONCRETE POLES	✓	✓	✓	✓	✓	✓

* Add size: M or XL when ordering

Each reference can be individually ordered. www.catelec.com



Work at height suitable for electricians

Kits

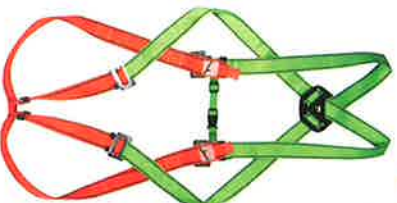
Economic
kits

EN-355
CE

Stretchable shock-absorbing lanyard

- Connector, with automatic locking system, attached to the energy absorber, opening: 19 mm.
- Connector, with automatic locking system, opening: 19 mm.
- Static strength of the system: 22 kN.

Ref. MO-52040



EN-361
CE

Basic body harness

- 2 fall arrest attachment point: dorsal and sternal.
- Universal size, adjustable by rectangular buckles.

Ref. MO-70

For height working, more than
6 m high on scaffolding or metal
structure.

Ref. KIT-HAUT-11

Anchorage strap

EN-795
CE

- polyamide strap width 20 mm,
- length: 1.5 m.



Ref. MO-52034
Weight: 0.150 kg

For height working at weak
height of fall.

Ref. KIT-HAUT-12

EN-360
CE

Retractable fall arrest with webbing

- It takes the user without manual intervention.
- Working capacity : 2.5 m maximum.
- Equipped with energy absorber.

Ref. MO-591001
Weight: 1.200 kg.

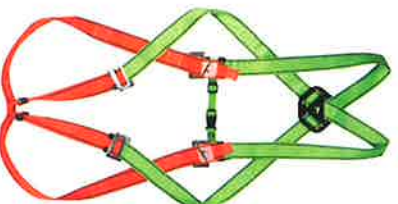


EN-361
CE

Basic body harness

- 2 fall arrest attachment point: dorsal and sternal.
- Universal size, adjustable by rectangular buckles.

Ref. MO-70



Harness

EN-361
CE

Insulating Harness

- Universal size. Adjustable by rectangular buckles.
- Includes support belt sewn in harness.
- 2 fall arrest attachment point: dorsal and sternal.
- Polyester straps 45 mm large.
- Secondary strap 45 mm wide operating between the two main straps.
- 2 insulated and articulated rings on the belt for attachment of the maintaining at work lanyard.
- Wide belt maintenance and semi-rigid.
- Anchorage points and adjustable buckles recovered with insulating material.
- Dielectric strength for all the insulated parts: 27.2 kV/mm.

Ref. MO-74-ISO



Fully
insulating

ATEX Harness

- Universal size. Adjustable by rectangular buckles.
- 1 fall arrest dorsal anchor point : D-ring Ø 8 mm.
- 1 fall arrest chest anchor point : composed of 2 D-rings to use together.
- Polyester straps 47 mm large.
- Secondary strap 47 mm wide operating between the two main straps.
- Mat reinforcement on the back, shoulders and thighs.
- Thigh straps reinforced with automatic buckles.
- Electrolytic zinc plating on all buckles and rings.

Ref. MO-72ATEX

To work in ATEX
atmosphere



EN-361
CE





Work at height suitable for electricians

Helmet



- EN 12492 Polycarbonate helmet**
- Adjustable size from 53 to 63 cm.
 - EN 50365 Δ 1 000 V
 - ANSI Z89.1 - 20 000 V
 - Deformable shock-resistant helmet.
 - Chinstrap with an easy adjustment buckle. Designed to tear if hooked.
 - < 25 daN).



MO-183-BL
Weight: 0.455 kg



- Helmet with built-in face shield**
- Adjustable size from 52 to 64 cm.
 - Adjusting the height position.
 - Panoramic face shield in non-scratch and anti-mist polycarbonate.
 - 100 % UV protection.



MO-185-BL

Arc-flash protection according
CEI 61482-1-2 / GS-ET 29. Class 1

EN 166 / EN 170 / EN 397
EN 50365 Δ 1 000 V

Lanyards

Comfort of
the stretchable
straps



EN-355
CE

Stretchable shock-absorbing lanyard

- Drop height 6 m mini.
- Overall length: 1.75 m.
- Connector automatically locking aperture 19 mm.
- Connector automatically locking opening 54 mm, strap end.
- Static Resistance mini system 22 kN.

Ref. MO-52040



EN-355
CE

Forked stretchable shock-absorbing lanyard

- Overall length: 1.75 m.
- 2 straps stretch.
- A self-locking connector on the energy absorber. Aperture 19 mm. For connection to harness.
- Two connectors with automatic locking, opening 54 mm, strap ends. For connection structures.
- Static Resistance mini system 22 kN.

Ref. MO-54040

Retractable fall arrest

EN-360



Self-retracting lifeline

- Self locking mechanism and automatic tensioning and return facility.
- Max. length: 10 m.

Ref. MO-591002

Weight: 5 kg

EN-360



Retractable fall arrest with webbing

- Winder with self-locking strap.
- Anti-fall: 2 m max.
- Equipped with shock absorber.

Ref. MO-591000

Weight: 1.200 kg.

Rescue



Anti-trauma security straps

- The straps are equipped with loops for the feet allowing the operator to stand straight. This relieves the pressure on the arteries that surround the upper legs. The two straps can be bonded together by a quick coupling.
- Product composed of a pair of straps. Each strap is folded in a fabric case.
- Each strap, in its case, attaches directly to the harness. The compact and lightweight product has no discomfort while working with harness.
- Quick and easy installation of the device after the fall operator
- Length of the adjustable straps. Maximum length : 1.3 m.

Ref. SO-10

For wait
the rescue
safety

Anchorage Hook



EN 362
CE

Anchorage Hook

- Stainless steel wire \varnothing 6 mm.
- Opening: 100 mm.
- Maximum operating load : 22 kN.

Ref. MO-54005

Weight: 0.350 kg

For frequent
anchoring

Bag



carrying bag

- Included in : KIT-HAUT-01-(*), KIT-HAUT-02-(*), KIT-HAUT-03-(*), KIT-HAUT-04-(*), KIT-HAUT-05, KIT-HAUT-06.
- Waterproof canvas, reinforced bottom.
- Shoulder straps and carrying handle doubles.
- Dim.: 550 x 300 x 300 mm.

Ref. M-87295

Weight: 1.500 kg



Work at height suitable for electricians

Complementary equipment

T.S.T. - BT S.T. 310

Single block

- Insulating block: reel and side plates made of synthetic material. Swivel hook, locking paw with gripping and assembling bolts made of steel with anti-corrosion treatment. Hot stick eye on the hook.
- Ø of the pulley wheel at the bottom of the groove: 45 mm.
- Ø of the rope to be used: 10 mm.
- Maximum utilization load on the rope : 60 daN.
- Aperture crocheted: 20 mm.

Ref. MO-317-S

Weight: 0.400 kg



S.T. HTA 527

Hook for service rope

- Steel.
- CMU : 50 daN.

Ref. MO-301



Stranded rope

- Polypropylene
- Length: 20 m Ø 12 mm
- CMU : 1900 daN

Ref. MO-472/20



EN 567 Ascender handle



- It locks with one hand for comfortable use.
- It works on ropes Ø 8 to 13 mm.
- Made of aluminium alloy.

Ref. MD-03

Weight: 0.200 kg



EN 362 Connectors



- Standard EN 362 class A.
- Automatic locking system.
- Made of aluminium alloy.
- Maximum operating load : 22 kN.

Ref. MO-54002/1

Opening: 60 mm

Weight: 0.53 kg

Ref. MO-54002/2

Opening: 110 mm

Weight: 0.924 kg



The lightness of
aluminium



EN 362 Semi-round quick link



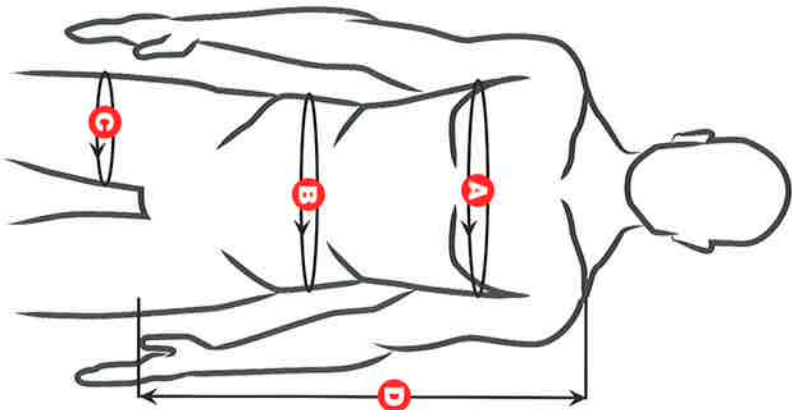
- Semi-round ring Ø 8 mm mini. Made of steel treated against corrosion.
- Opening 10 mm.

Ref. MO-54-D



Harness size board

Reference	Chest (A)	Size (B)	Thigh (C)	Height (D)
S	700 - 1 000	750 - 1 000	500 - 700	600 - 750
M	800 - 1 200	900 - 1 200	550 - 750	750 - 850
XL	1 000 - 1 500	1 000 - 1 350	550 - 900	700 - 950



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The characteristics and technical informations stated in our literature are only for your guidance and therefore cannot be considered as contractual.

For the complete range,

please consult our general catalogue
on our web site www.catuelec.com