

BRUNO STEINBERG



Equipment for Caving and mountaineering

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CAVE BAG

	Article	Height	Ø sup.	Litres	Weight	Handle	Shoulder straps	Notes
100	Cave bag Punta	72 cm	22 cm	24	650	2	1	Flat shaped
102	Cave bag Speleo	72 cm	23 cm	28	750	2	1	
103	Cave bag Gortani	72 cm	23 cm	28	760	3	1	1 handle on the bottom
105	Cave bag Ovoidale	72 cm	23 cm	28	820	2	2	
106	Cave bag Woland	72 cm	23,cm	28	850	3	2	1 handle on the bottom
107	Backpack	72 cm	28 cm	43	980	2	2 padded	
108	Cave bag Big Ovoidale	72 cm	25 cm	33	920	3	2	1 handle on the bottom
109	Cave bag Mini Ovoidale	57 cm	23 cm	22	700	2	2	
140	Canyon bag Mini Ovoidale	57 cm	23 cm	22	720	2	2	Eyelet on the bottom
142	Canyon backpack	72 cm	28 cm	43	1140	2	2 padded	With a light nylon-fabric extension fastening with a tanka, with eyelets on the bottom, waist harness and pectoral fasten strap.
143	Cave bag for little oxygen bottle	54 cm	26 cm	26	1070	3	2 padded	For two 5 litres oxygen bottles. Four iron eyelets, and one handle on the bottom.
144	Cave bag for oxygen bottle	70 cm	33 cm	50	1550	3	2 padded	or two 10 litres oxygen bottles. Four iron eyelets, and one handle on the bottom.

To limit the wear of the fabric, the bottoms of the cave bags are made with an extension of the backside. In this way the bottom is sewn only on three sides. Material: thick PVC.

Inside the edge of the bags there is a small ring of nylon tape to which you can attach carabiners or the end of the rope if you thread it free into the bag. Not present in bags 142, 143 and 144.



100 Cave bag Punta



102 Cave bag Speleo



103 Cave bag Gortani



105 Cave bag Ovoidale



106 Cave bag Woland



107 Backpack



108 Cave bag Big Ovoidale



Small tape ring for carabiners



109 Cave bag Mini Ovoidale



140 Canyon bag Mini Ovoidale



142 Canyon backpack



143 Cave bag for little oxygen bottle

POCKET BAGS

	Article	Height	Ø sup.	Litres	Weight	Handle	Shoulder	Fabric	Notes
110	Small personal cave bag	35 cm	14 cm	4,5	180	NO	NO	Light PVC	With a light nylon-fabric extension fastening with a tanka. A plastic ring allows to hang the bag on the waist harness.
111	Personal cave bag	45 cm	22 cm	16	370	1	2	Light PVC	With a light nylon-fabric extension fastening with a tanka.
141	Personal canyon bag	45 cm	24 cm	17	580	1	2	Light PVC	With a light nylon-fabric extension fastening with a tanka, with eyelets on the bottom, pectoral fasten strap, waist harness.
119	Mason's bucket carrier	30 cm	44 cm	21	700	NO	NO	thick PVC	Sack designed for those who carry out work at height and must carry with him a mason's bucket or a bucket of paint without it spilling. It can also be used to remove debris away. Convenient to fill, as being soft it adapts to the surfaces to be cleaned. Attack with two rings. Straps passing under the bag to make it stronger and safer.
126	Sacchio	40 cm	86 cm	19	760	5	NO	thick PVC	For unblocking: a little sack, a little bucket. Handle on all sides and underneath to facilitate emptying. 2 bag edge rings and 2 more distant rings. Double bottom.



110 Small personal cave bag



111 Personal cave bag



141 Personal canyon bag



119 Mason's bucket carrier



126 Sacchio

	Article	Eight.	Large	Deep	Weight	Fabric	Notes
112	Pocket bag Armo	23 cm	16 cm		90	light PVC	Pocket-shaped bag with Velcro fastening, one inner pocket, one ring for waist-hanging. Suitable for spit-rocks and bolts.
113	Pocket bag Ludwig	29 cm	23 cm		210	light PVC	Pocket-shaped bag with Velcro fastening, two inner pockets, a ring for waist-hanging. Suitable for bolt or survey equipment.
114	Pocket bag Atlas	29 cm	17 cm	9 cm	180	light PVC	Rectangular-shaped bag with Velcro fastening, inner pockets for bolts and hammer. Two rings or waist hanging. Suitable also for survey equipment.
117	Pocket bag for one 7 Ah lead-battery	22 cm	14 cm	8 cm	260	light PVC	Small bag for one 7 Ah lead-batteries. Twice Velcro fastening. Two rings for waist hanging.
118	Pocket bag for lithium-batteries box	26 cm	8 cm	6 cm	200	light PVC	Small bag for lithium-batteries. Twice Velcro fastening. Two rings for waist hanging.



112 Pocket bag Armo



113 Pocket bag Ludwig



114 Pocket bag Atlas



117 Pocket bag for 1 battery 7 Ah



118 Pocket bag for lithium- batteries box

FOR SLEEPING

	Article	Large	Length	Weight	Storage sack	Material	Note particular
134	Hammock	150 cm	300 cm	850	30 x 10 Ø cm	Nylon	A nylon tape is sewed to the extremities to hang the hammock. The hammock can be used also as a nylon cover because it is completely openable.



134 Hammock

137 Cave Tent-hammock. With this "Floating" tent I jointed the advantage to sleep far from the ground (hammock) and sleep inside an air bubble (tent). For a hammock the floor is not so important, whereas a tent needs a flat place. In a hammock you are closed inside a "cocoon", in a tent there is a warm space around you.

With the tent-hammock you can sleep above the ground but it is like to be in a tent, because the tissue where you sleep is kept open by two bars and you can sleep free and not squeezed between two sides like in a normal hammock.

The distance from the ceiling of the tent and the sleeping plan is of 40-50 cm, so the air volume inside the tent is small and easy to warm.

The person lays on a rectangle of Cordura 300 fabric (212 cm long, 86 cm wide at head and 50 cm at feet), kept open by two aluminum bars. There are two small pockets to get cigarettes, towels and so on.

The cover is made with a breathable microfiber fabric that is kept stretched with an adjustable nylon tape fixed at the suspension points of hammock. You need to adjust the inner tape to get lateral walls at least 10 cm below the base-plane. At the height of shoulders the cover is kept stretched by an aluminum bar (40 cm). There are two velcro strips to close the four corner of the basal plane and on the ceiling there is a velcro ring to hang a light.

Minimum distance between the suspension poi: 3.5 meters. A tight mattress can contribute to keep the back isolated.

You have to use the sleeping bag.

Weight: 1800 g. Packed size: Ø 20 cm, h 14 cm. Alu bars: Ø 4 cm, h 51 cm.

The hammock has been engineered and tested with the collaboration of G. S. Fiorentino.



137 Cave Tent-hammock



137 Cave Tent-hammock

150 Poncho for cave rest, to be always carried in cave bag, made with microfiber fabric, breathable and waterproof. Very low encumbrance and weight (14 x 21 x 3 cm, 250 gr). The poncho has a zip with two runners, with allow to put together two of them making a larger sheet. The poncho can be used to protect yourself from the cold, keeping the hands free. It's possible, for example, to wear the poncho while you make assurance to your companion. The poncho can be used to protect yourself from water drops in caves and from the rain outside (the poncho has no a hood!). The poncho has been designed with the collaboration of Giovanni Badino.



150 Poncho

540 Cave tent made with microfiber fabric, breathable and waterproof. Rectangular shape, without floor. To erect the tent you must hang the four corner strings on the walls of the cave. There are 6 further fastens along the roof rim. Suitable for cave camp and for cave-rescue. With a carbide lamp inside the temperature raises quickly and the wetness decreases. The tent allow 5/6 persons to seat or 3 persons to sleep inside. Remember to carry some mattress or a nylon cloth to put on the floor. Four pockets, where you can put small stones, allow to tension the tent. Dimension: 150 x 200 x 150 cm, in the compression-bag h 18 cm, Ø cm 20. Weight: 1550 gr. On order, the tent can be requested with different dimensions. The tent has been designed with the collaboration of the Italian National Alpine and Cave Rescue and of Giovanni Badino.



540 Cave tent

138 Cave warmed hammock. The natural evolution of tent-hammock. In this hammock you can sleep without a sleeping bag, wearing only the under-suit. The hammock is warmed by a gas lamp, hanged beneath the hammock in a pocket not in communication with the space where you sleep, so there is no contamination by the gas made by combustion. Consume: 7/15 g/h depending on the cave temperature.

ATTENTION: without a font of heat you can "freeze".

The person lays on a rectangle of Cordura 300 fabric (212 cm long, 86 cm wide at head and 50 cm at feet), kept open by two aluminum bars. There are two small pockets to get cigarettes, towels and so on.

The cover is made with a breathable microfiber fabric that is kept stretched with an adjustable nylon tape fixed at the suspension points of hammock. You need to adjust the inner tape to get lateral walls at least 10 cm below the base-plane. At the height of shoulders the cover is kept stretched by an aluminum bar (40 cm). There are two velcro strips to close the four corner of the basal plane and on the ceiling there is a velcro ring to hang a light. A fine cover can be opened with two zips and fastened to the base-plane. The person lies below this fine cover that create a warm chamber. The inner cover must not touch the upper cover.

ATTENTION, DANGER! The head must be kept out of the inner cover, The oxygen could lack inside.

Below the base plane there are two chamber, one inside the other, to get the heat. The gas-lamp must be hanged as near as possible to the base-plane.

Minimum distance between the suspension points: 3.5 meters. A tight mattress can contribute to keep the back isolated.

You have to use the sleeping bag.

Weight: 2500 g. Packed size: Ø 20 cm, h 18 cm. Alu bars: Ø 4 cm, h 51 cm.

The hammock has been engineered and tested with the collaboration of G. S. Fiorentino.

INSTRUCTION: hang the hammock to the iron rings at the end of tapes and then insert the bars. The hammock must be well stretched to get a comfortable sleep. Light on the gas-lamp, let it warmed and then regulate to minimum level or a little more if the cave is really cold. Put the lamp inside the hammock. You can adjust the gas flow when you are inside the hammock.

You can enter the both side of the hammock. You have to adjust the cover, which must be first fixed at the feet, paying attention that it does not touch the inner cover. Close the cover at the head. Either at the head or at the feet, the cover must be closed maintaining the bars outside.

Attention, danger: the head must be kept in the external chamber. In the inner chamber the oxygen could lack!!! Good night.

Use of the lamp: you must take away the glass and change the net. The new net must be made with a brass net of 5 x 9 cm, rolled getting a conical shape and the folded at the tip. The lower rims must be folded toward the inner, to keep the net far from the gas diffuser. The lamp must be having a good regulation of minimum flow. If you have too much warm at the minimum regulation, you can cover a part of the hollows of gas diffuser.



CAVE SUITS

PFAS-Free* Bi-Elastic Fabric

Back in 2016, I tried asking the manufacturer of the Cordura I was using at the time if it was possible to get a PFC-free resin. Unfortunately, the answer was no.

Fortunately, time hasn't passed in vain.

From now on, the bi-elastic fabric I use for my suits is PFAS-free*.

I won't explain what that means. Wikipedia (<https://en.wikipedia.org/wiki/PFAS>) certainly does it better than I can.

After making cavers feel good using a bi-elastic fabric, now it's up to us cavers to make the environment feel good using fabrics with these characteristics. **The choice is yours.**

* It would be more accurate to say that PFAS occur at a maximum of 50 ppm (parts per million), or 50 mg per 1 kg of fabric. This is the maximum level allowed by California regulations, perhaps the most advanced state on these issues. In reality, the Pfas levels present in the fabric are much lower, as can be seen from the analysis carried out on the batch of fabric currently in use, which you can find on www.steinberg.it/pfas.php

The huge advantage of using a **bi-elastic** caving suit is that you have maximum freedom of movement. A suit made with a bi-elastic fabric can be very close-fitting, being the movement guaranteed by the stretch of the fabric. It almost feels like being undressed, and if it doesn't seem like it, it could be the under-suit that prevents you from moving. Therefore, it will not be necessary to wear suits one or two sizes larger in order not to feel clumsy in movement, risking getting stuck entangled in every little roughness in the tight passages. Finally, by stretching your leg, you will reach the far grips without having to exert yourself too much. It will be less tiring to lift the handle with each step while rope climbing a, the suit will not hinder it. The pits will seem shorter... Or think about when you're climbing, it will certainly be much easier. You no longer need spending an enormous amount of energy just overcoming the resistance of the fabric and therefore you will be less tired during long cave tours. All of this will most likely change the way you move in a cave.

Two types of fabric are available. A light one for those who want maximum freedom and a heavier one for those who want to feel more protected. Both fabrics are woven with the "rip-stop" method, and this makes them very strong. Even when you rip them, the holes don't get bigger. The heavy fabric is almost indestructible, "suit-breakers" speleo-proof... The resin finish is the same in both suits. Heavy fabric being thicker will absorb more water when it gets wet. SuperCharon is slow to dry; the SuperPluto, on the other hand, is very fast.

	Article	Pocket	Colour	Weight	Size	Fabric	Note particular
400	Suit SuperPluto Pfas free	2	blue yellow	M= 870	XXS /XXL	Double-stretch Cordura with breathable coating PFAS free*	The external Velcro closure and the large internal pocket are without sealing exposed to wear. The suit is furnished with an external pocket. Gusset on the crotch.
401	Female suit SuperPluto Pfas free	2	blue yellow	XS= 790	XXS /XXL	Double-stretch Cordura with breathable coating PFAS free*	Same shape like SuperPluto but with a zipper on the crotch so that the suit can be open up to the back.
402	Suit SuperArlecchino Pfas free	2	blue yellow red	M=970	XXS /XXL	Double-stretch Cordura with breathable coating PFAS free*	The external Velcro closure and the large internal pocket are without sealing exposed to wear. The suit is furnished with an external pocket. Gusset on the crotch. Patches on the elbows and knees.
403	Female suit SuperArlecchino Pfas free	2	blue yellow red	XS=890	XXS /XXL	Double-stretch Cordura with breathable coating PFAS free*	Same shape like SuperArlecchino but with a zipper on the crotch so that the suit can be open up to the back.
404	SuperCaronte Pfas free	2	Red	M= 1200	XXS /XXL	Double-stretch Cordura with breathable coating PFAS free*	The external Velcro closure and the large internal pocket are without sealing exposed to wear. The suit is furnished with an external pocket. Gusset on the crotch.
405	Female SuperCaronte Pfas free	2	Red	XS= 1160	XXS /XXL	Double-stretch Cordura with breathable coating PFAS free*	Same shape like SuperCaronte but with a zipper on the crotch so that the suit can be open up to the back.

The size of the suits is calculated by measuring the chest under the armpits: chest (cm) 82=XXS, 88=XS, 94=S, 100=M, 106=L, 112=XL, 118=XXL.



400 Suit SuperPluto PFAS free



401 Female suit SuperPluto PFAS free



402 Suit SuperAlecchino PFAS free



403 Female suit SuperAlecchino PFAS free



404 SuperCaronte PFAS free



405 Female SuperCaronte PFAS free

CAVE UNDER-SUITS

	Article	Colour	Weight	Size	Fabric	For cave	Note particular
430	Mangiafuoco	Red	50=680	42/64	Polar 500	Cold	
431	Mangiafuoco femminile	Red	44=580	40/50	Polar 500	Cold	
432	Dumbo	Bordeaux	50=590	42/64	Polar 400	Middle	
433	Dumbo female	Bordeaux	44=450	40/50	Polar 400	Middle	
434	Pollicino	Red Bordeaux blue sky	50=680	42/64	Polar 500, 400, 300	Cold	This under-suit is made with three different weight fabric, which protect the body according to their different needs. The whole thorax is made with the heaviest fabric (500 gr. - red), the back of arms and the knees are made with the medium fabric (400 gr. - blue), the front of the arm and the legs are made with the light fabric (300 gr. - sky/blue). Under the armpits there is a very light and extensible fabric.
435	Pollicino female	Red Bordeaux blue sky	44=550	40/50	Polar 500, 400, 300	Cold	Like Pollicino
436	Aladino	Bordeaux blue sky orange	50=580	42/64	Polar 400, 300, 250	Middle	like Pollicino, but with a different weight of the fabric.
437	Aladino female	Bordeaux blue sky Orange	44=450	40/50	Polar 400, 300, 250	Middle	like Pollicino, but with a different weight of the fabric.
438	Cenerentola	Bue sky	50=500	42/64	Polar 300	Middle/ hot	
439	Cenerentola	Bue sky	44=400	40/50	Polar	Middle/	

	female				300	hot	
440	Merlino	Aquamarine green	L=490	S/XXXL	Double-stretch Polar	Cold	Very light bi-elastic undersuit for hot caves or warm people, or to be used in combination with other undersuits.
441	Merlino female	Aquamarine green		S/L	Double-stretch Polar	Cold	Like Merlino
462	Dungarees	Blue sky	M=220	S-XL	Double-stretch Polar		High at the waist to avoid getting caught. The straps do not fall as they are coupled to the neck.

The zip, with three runners, is outside sewn and it is long till the half of the back.

The size of the suits is equivalent to the half thorax circumference in cm.

Do not wear thick clothing. Remember that the undersuit must be worn "skin-tight", because any garment underneath gets wet and hardly dries.



430 Mangiafuoco



432 Dumbo



438 Cenerentola



434 Pollicino



436 Aladino



440 Merlino



462 Dungarees

THE ACCESSORY

	Artiche	Colour	Size	Weight	Material	Note particular
122	Compress bag	Green		120	Nylon	Bag with two belts to compress sleeping-bags, down jackets or other wear. Dimension: h 25 cm, Ø 21 cm.
422	Socks Dumbo	Green	XS-XL	M=100	Polar 400	Size XS=34-36 S=37-39 M=40-42 L=43-44 XL=45-46
452	Polar hood	Several	S-L	M=50	Polar	



122 Compress bag



422 Socks Dumbo



452 Polar hood