

## *Use of CAMP Safety equipment by users with maximum total weight heavier than 100 kg*

### **Foreword**

Certification of Personal Protective Equipment for falls from height and for work positioning conforming to European Directive 89/686/EEC is carried out in accordance with proper harmonized EN standards.

The standards evaluate dynamic strength and/or dynamic performance through drop tests carried out with a standard mass of 100 kg; drop tests by the manufacturer with a heavier mass may be performed in some cases to determine if the equipment is suitable and safe for use by heavier users.

The C.A.M.P. R&D Department carried out a series of tests in order to determine whether and how CAMP Safety equipment can be safely used by users with a total weight of more than 100 kg.

### **Static strength**

The minimum static strength required by harmonized EN standards and declared by C.A.M.P. guarantees complete safety for workers weighing up to 150 kg. In fact, all breaking loads for CAMP P.P.E. are higher than 15 kN (1500 kg approx.), and in some cases up to 52 kN (5200 kg approx.), so the breaking load is always at least 10 times higher than the weight of the user.

### **Dynamic performance and dynamic strength**

In order to guarantee the safety of the user, EN standards require that in a fall-arrest system, the fall-arrest force transmitted to the user's body must be kept below 6 kN (600 kg approx.).

This force limitation is defined by the current EN standards as the limit that prevents any major injury to the user.

Concerning the additional drop tests with a mass up to 150 kg, the C.A.M.P. R&D Dept. has considered this requirement of 6 kN as the

maximum limit value to be respected during dynamic performance tests, prescribed for all devices having an energy absorbing function (i.e. energy absorbers, retractable fall arresters, rope fall arresters, cable fall arresters, etc.).

Test results also identified all the additional safety instructions in order to guarantee the absorption of the increased energy generated during a fall of a person weighing up to 150 kg. With reference to the components of systems designed specifically for work positioning or rescue (equipment not designed for fall arrest), the C.A.M.P. R&D Dept. carried out (with a mass up to 150 kg) all the drop tests necessary to verify that the equipment meets the dynamic strength requirements prescribed by EN standards. The EN standards for work positioning and rescue equipment do not give any specific force limit(s) during a fall, rather they instruct the user to avoid any fall(s) when using positioning or rescue equipment.

### **Instructions for use**

The dynamic performance and dynamic strength tests carried out by the C.A.M.P. R&D Dept. provide all of the necessary data to indicate the safety instructions and limitations of systems that use CAMP Safety equipment for users weighing up to 150 kg.

The charts on the following pages provide additional instructions for every type of CAMP Safety product.

1. The first column reports a short summary of the prescribed EN standards for the user's maximum weight.
2. The second column indicates the test results for each type of equipment to determine whether it can be used by people with a total weight between 100 and 120 kg. It also provides additional instructions and limitations in order to guarantee the correct and safe use of the equipment such as the minimum clearance distance required to prevent the user from hitting the ground during a fall.
3. The third column gives the same instructions as the second column for users with a total weight between 120 and 150 kg.
4. The fourth column lists all of the products for which the additional instructions and test results are valid.

Indications given by the chart can be summarized using the colour coding as defined below:



**use is authorized without additional safety instructions**



**use is authorized only with additional safety instructions**



**use is not authorized**

### **Conclusions**

C.A.M.P. authorizes the use of specific CAMP Safety products in fall-arrest, work positioning and rescue systems for users with a maximum total weight heavier than 100 kg (maximum 150 kg, fully equipped) only if:

- the choice of the proper equipment is done by consulting the chart supplied with this document, and by professionals trained in the specified weight range;
- the use of the equipment is done following all the additional safety instructions and limitations provided in the chart supplied with this document for the specified weight range, in addition to the normal instructions provided with the technical manual(s) supplied with every product;
- the fall-arrest system, positioning system, or the rescue system is assembled exclusively using CAMP Safety equipment whose use is authorized for the specified weight range, in addition to the standard compatibility of the components used together as specified by EN standards and technical manual(s) supplied with every product.



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R&D Manager

**Use of CAMP Safety equipment by users with maximum total weight heavier than 100 kg**

Instructions Type of equipment	1. EN standards instructions	2. Total Weight 100-120 kg	3. Total Weight 120-150 kg	4. Instructions valid for:
<b>Harnesses</b> <b>EN361, EN358, EN813</b>	<p>EN361 standard does not prescribe any weight limit for the user.</p> <p>EN358 standard does not prescribe any weight limit for the user.</p> <p>EN813 standard prescribes that dynamic tests are made with the maximum weight declared by the manufacturer.</p>	 <p><b>Use is authorized</b></p> <ul style="list-style-type: none"> <li>• <u>EN361 attachment points for fall-arrest.</u> Safety depends on the energy absorbing system used in combination with the harness: check that the system is suitable for this weight.</li> <li>• <u>EN358 attachment points for work positioning.</u> Additional tests by C.A.M.P. R&amp;D Dept. with masses up to 150 kg were successful. Check that the devices for work positioning used in combination with the harness are suitable for this weight.</li> <li>• <u>EN813 attachment points for suspension.</u> Certification was carried out for a weight limit of 150 kg. Check that the devices used in combination with the harness are suitable for this weight.</li> </ul>		<p>196201/196205 Access Sit, 196202 Access Chest, 196203 Access Bridge, 216201/2163 Tree Access, 2165/216501 GT Sit, 2166/216601 GT Chest, 094101 Golden Top Plus Alu, 094102/090103 Golden Top Evo Alu / Black, 094104 Golden Top Comfort Alu, 094105 Golden Top Seat Alu, 094106 Golden Top Evo Fixe Alu, 092101 Golden Top Plus, 092107 Golden Top Plus Black, 0921 Golden Top, 092103 Golden Top Black, 0907 Liberty, 090703 Liberty Black, 0930 Golden Chest, 093001 Golden Chest Alu, 198201 Air Rescue Sit, 198202 Air Rescue Chest, 298202 Air Rescue Evo Sit, 298201 Air Rescue Evo Chest, 198301 Air Work Sit, 198302 Air Work Chest, 1265/126501 Gravity, 2120 Orbital, 2121 Quantum, 1264 Rapida, 126401 Rapida Plus, 126402 Rapida Light, 2168 Swiftly Vest, 2167 Swiftly Light, 2515 Focus Vest, 134802 Vertical 2 Alu, 134803 Vertical 2 Alu Vest, 124702 Vertical 2, 124703 Vertical 2 Vest, 0106 Vertical 2 Plus, 1247 Vertical, 0922 Empire, 092203 Empire Black, 1275 Basic Duo, 1298 Basic, 129803 Basic Evo, 1268 Easy Belt.</p>
	<p>EN12841B standard prescribes that dynamic tests are made with the maximum weight declared by the manufacturer.</p>	 <p><b>Use is authorized</b></p> <p>Turbochest EN12841B. Certification was carried out for a weight limit of 120 kg. Check that the devices used in combination with the harness are suitable for this weight.</p>	 <p><b>Use is not authorized.</b></p> <p>Turbochest EN12841B. Certification was carried out for a weight limit of 120 kg. Check that the devices used in combination with the harness are suitable for this weight.</p>	<p>2780 GT Turbo</p>
	<p>ANSI Z359.11 standard prescribes that tests are made with 140 Kg.</p>	 <p><b>Use is authorized.</b></p> <p>Certification was carried out for a weight limit of 140 kg.</p>	 <p><b>Use is authorized up to 140 kg.</b></p> <p>Certification was carried out for a weight limit of 140 kg.</p>	<p>216901 GT Ansi</p>
<b>Lanyards with Shock Absorber ref.2029 EN355</b>	<p>EN355 standard does not prescribe any weight limit for the user.</p>	 <p><b>Use is authorized when the length of the lanyard, connectors included, is shorter than 175 cm.</b></p> <p>Additional tests by C.A.M.P. R&amp;D Dept. showed that for this weight and this length the maximum force during the fall is lower than 6 kN and the extension of the energy absorber is lower than 135 cm. Minimum clearance distance must be 5.6 m below the anchor point.</p>	 <p><b>Use is authorized when the length of the lanyard, connectors included, is shorter than 135 cm.</b></p> <p>Additional tests by C.A.M.P. R&amp;D Dept. showed that for this weight and this length the maximum force during the fall is lower than 6 kN and the extension of the energy absorber is lower than 140 cm. Minimum clearance distance must be 5.25 m below the anchor point.</p>	<p>2029 Shock Absorber, 50301 Single Rope Lanyards, 50302 Double Rope Lanyards, 51301 Adjustable Rope Lanyards, 60301 Single Webbing Lanyards, 60302 Double Webbing Lanyards, 70301 Single Rewind Lanyards, 70302 Double Rewind Lanyards. (with maximum length as specified in columns 2 and 3)</p>
<b>Lanyards with Shock Absorber Limited ref.3029 EN355</b>	<p>EN355 standard does not prescribe any weight limit for the user.</p>	 <p><b>Use is authorized when the length of the lanyard, connectors included, is shorter than 135 cm.</b></p> <p>Additional tests by C.A.M.P. R&amp;D Dept. showed that for this weight and this length the maximum force during the fall is lower than 6 kN and the extension of the energy absorber is lower than 65 cm. Minimum clearance distance must be 4.5 m below the anchor point.</p>	 <p><b>Use is authorized when the length of the lanyard, connectors included, is shorter than 100 cm.</b></p> <p>Additional tests by C.A.M.P. R&amp;D Dept. showed that for this weight and this length the maximum force during the fall is lower than 6 kN and the extension of the energy absorber is lower than 80 cm. Minimum clearance distance must be 4.3 m below the anchor point.</p>	<p>3029 Shock Absorber Limited, 50401 Single Rope Lanyards Limited, 50402 Double Rope Lanyards Limited, 60401 Single Webbing Lanyards Limited, 60402 Double Webbing Lanyards Limited, 70402 Double Rewind Lanyards Limited. (with maximum length as specified in columns 2 and 3)</p>
<b>Air Absorber EN355</b>	<p>EN355 standard does not prescribe any weight limit for the user.</p>	 <p><b>Use is authorized.</b></p> <p>Additional tests by C.A.M.P. R&amp;D Dept. showed that for this weight the maximum force during the fall is lower than 6 kN and the extension of the energy absorber is lower than 70 cm. Total length of the lanyard must be 1 m maximum, do not increase the length with additional components. Minimum clearance distance must be 4.7 m below the anchor point. Use with fall factor higher than 2 is not authorized.</p>	 <p><b>Use is authorized.</b></p> <p>Additional tests by C.A.M.P. R&amp;D Dept. showed that for this weight the maximum force during the fall is lower than 6 kN and the extension of the energy absorber is lower than 87 cm. Total length of the lanyard must be 1 m maximum, do not increase the length with additional components. Minimum clearance distance must be 4.7 m below the anchor point. Use with fall factor higher than 2 is not authorized.</p>	<p>209301 Air Absorber.</p>

**Use of CAMP Safety equipment by users with maximum total weight heavier than 100 kg**

Instructions Type of equipment	1.EN standards instructions	2. Total Weight 100-120 kg	3. Total Weight 120-150 kg	4. Instructions valid for:
Lanyards EN354	EN354 standard does not prescribe any weight limit for the user.	 <b>Use is authorized.</b> When lanyard is used assembled with a energy absorber for fall-arrest purposes, check that the absorber is suitable for this weight.		<b>2030</b> Rope Lanyards, <b>2030F</b> Webbing Lanyards, <b>2041</b> Doublex, <b>2034</b> Truck Loop, <b>2035</b> Easy Anchor, <b>2032</b> Anchor Webbing, <b>2132</b> Anchor Cable, <b>2046</b> Access Ring 34 mm, <b>204601</b> Access Ring 45 mm, <b>2142</b> Omino Heli, <b>2143</b> Omino Heli Plus.
Adjustable Lanyards EN358	EN358 standard does not prescribe any weight limit for the user.	 <b>Use is authorized.</b> Additional tests by C.A.M.P. R&D Dept. with masses up to 150 kg were successful.		<b>203007/0701</b> Adjustable Rope Lanyards, <b>2031</b> Rope Adjuster, <b>2097</b> Druid Lanyard, <b>1687</b> Axel Lanyard, <b>2060</b> Cable Lanyard, <b>2061</b> Cable Adjuster, <b>2133</b> Dynavario.
Air Lanyard EN354	EN354 standard does not prescribe any weight limit for the user.	 <b>Use is authorized.</b> Additional tests by C.A.M.P. R&D Dept. with masses up to 120 kg were successful.	 <b>Use is not authorized.</b> Additional tests by C.A.M.P. R&D Dept. with masses heavier than 120 kg were not successful.	<b>209201</b> Air Lanyard.
Temporary Anchor Devices EN795/B	EN795/B standard does not prescribe any weight limit for the user.	 <b>Use is authorized.</b> Safety depends on the energy absorbing system used in combination with the device: check that the system is suitable for this weight.		<b>2034</b> Truck Loop, <b>1040</b> Express Ring, <b>2035</b> Easy Anchor, <b>2036</b> Speed Anchor, <b>2032</b> Anchor Webbing, <b>0250</b> Daisy Chain Dyneema, <b>1269</b> Multianchor, <b>1393</b> Swivel, <b>2030</b> Rope Lanyards, <b>2030F</b> Webbing Lanyards, <b>2140</b> Herbol, <b>2132</b> Anchor Cable.
Temporary Lifeline EN795/B	EN795/B standard does not prescribe any weight limit for the user.	 <b>Use is authorized.</b> In order to keep the bending of the lifeline into the values specified on the technical manual, take the following precautions: - use the lifeline by one person only, consider the bending specified for mass of 200 kg; - check that the system used in combination with the anchor is suitable for this weight.		<b>1095</b> Temporary Lifeline 18 m, <b>109501</b> Temporary Lifeline 30 m.
Connectors EN362	EN362 standard do not prescribe any weight limit for the user.	 <b>Use is authorized.</b> Safety depends on the energy absorbing system used in combination with the connector: check that the system is suitable for this weight.		<b>2017, 0984, 098401, 115801, 115802, 115803, 0986, 0983, 0925, 0995, 1075, 107501, 107502, 1078, 107801, 107802, 0981, 1176, 0671, 1455, 1878, 1456, 1877, 187701, 187702, 2123, 212304, 2124, 2125, 1115, 1185, 1187, 1136, 1183, 1184, 1363, 1364, 1365, 1309, 1380, 1381, 1373, 1374, 1375, 0691, 0934, 0939, 0935, 0949, 0955, 0991, 0961, 0992, 2128, 2145, 2146, 2147, 2148, 2149.</b>
Cobra 2 Retractable Fall Arrester EN360	EN360 standard does not prescribe any weight limit for the user.	 <b>Use with fall factor lower than 1 is authorized.</b> Additional tests by C.A.M.P. R&D Dept. showed that for this weight the maximum force during the fall is lower than 6 kN. Minimum clearance distance must be 2.4 m below user's feet. Use with fall factor higher than 1 is not authorized.	 <b>Use with fall factor lower than 1 is authorized.</b> Additional tests by C.A.M.P. R&D Dept. showed that for this weight the maximum force during the fall is lower than 6 kN. Minimum clearance distance must be 2.7 m below user's feet. Use with fall factor higher than 1 is not authorized.	<b>2074</b> Cobra 2.
Cobra 6-10-15-20-32 Retractable Fall Arresters EN360	EN360 standard does not prescribe any weight limit for the user.	 <b>Only vertical use is authorized. Horizontal use is not allowed.</b> Additional tests by C.A.M.P. R&D Dept. showed that for this weight in the vertical use there are not performance variation. Avoid creation of any slack of cable. Horizontal use is not allowed for people with weight higher than 100kg.		<b>2075</b> Cobra 6, <b>2076</b> Cobra 10, <b>2077</b> Cobra 15, <b>2078</b> Cobra 20, <b>2099</b> Cobra 32.
Giant Descender EN341-EN12841 EN15151-ANSI	EN341/EN12841 standards prescribe that dynamic tests are made with the maximum weight declared by the manufacturer. EN15151 does not prescribe any weight limit for the user. ANSI Z359.4 limits weight at 141 kg.	 <b>Use is allowed except as belay device.</b> Certification was carried out for a weight limit higher than 120 kg for all standards. Limit to 100 kg when used like belay device only.	 <b>Only descender/ascender uses are authorized. Fall arrester/belay device uses are not allowed.</b> Certification was carried out for a weight limit of 200/210 kg for descender and ascender uses. ANSI use must be limited to 141 kg. Fall arrester and belay device uses are not allowed.	<b>0997</b> Giant

**Use of CAMP Safety equipment by users with maximum total weight heavier than 100 kg**

Instructions Type of equipment	1.EN standards instructions	2. Total Weight 100-120 kg	3. Total Weight 120-150 kg	4. Instructions valid for:
<b>Druid Descender</b> EN341-EN12841/C	EN341 and EN12841 standards prescribe that dynamic tests are made with the maximum weight declared by the manufacturer.	 <b>Use is authorized.</b> Certification was carried out for a weight limit of 120 kg.	 <b>Use is authorized for rescue by expert users only.</b> The device is suitable for use by experts in rope access rescue up to 200 kg.	2232 Druid, 2233 Druid Pro
<b>Axel Descender</b> EN341-EN12841/C	EN341 and EN12841 standards prescribe that dynamic tests are made with the maximum weight declared by the manufacturer.	 <b>Use is authorized.</b> Certification was carried out for a weight limit of 150 kg.		1686 Axel.
<b>I-Block Descender</b> EN341-EN12841/C	EN341 and EN12841 standards prescribe that dynamic tests are made with the maximum weight declared by the manufacturer.	 <b>Use is authorized.</b> Certification carried out with mass of 130kg for EN341 and mass of 200kg for EN12841/C. Check weight restrictions for ropes with diameter <10mm on the instruction leaflet.		1388 I-Block Evo
<b>Turbochest, Solo 2 Ascenders</b> EN12841/B	EN12841 standard prescribes that dynamic tests are made with the maximum weight declared by the manufacturer.	 <b>Use is authorized.</b> Certification was carried out for a weight limit of 120 kg (Turbochest) and 140 kg (Solo2).	 <b>Use is authorized.</b> For use up to 150 kg connection lanyard length must be limited to 0.5 m and work position must be always lower than the ascender position.	2256 Turbochest 2257 Solo2
<b>Pilot, Solo, Lift Ascenders</b> EN12841/B	EN12841 standard prescribes that dynamic tests are made with the maximum weight declared by the manufacturer.	 <b>Use is authorized.</b> Certification was carried out for a weight limit of 100 kg (fall factor 1 drop test with connection by lanyard L=1 m). For use up to 150 kg connection lanyard length must be limited to 0.5 m and work position must be always lower than the ascender position.		0550 Solo, 0547 Pilot dx, 054701 Pilot sx, 1175 Lift.
<b>Goblin Rope Fall Arrester</b> EN12841/A-B EN353-2	EN353-2 standard does not prescribe any weight limit for the user. EN12841 standard prescribes that dynamic tests are made with the maximum weight declared by the manufacturer.	 <b>Use is authorized.</b> Certification was carried out for a weight limit of 120 kg for use with single connector or Goblin Lanyard 26 cm. Avoid use of Goblin Lanyard 40 cm and 74 cm.	 <b>Use is authorized.</b> Certification for rescue use was carried out for a weight limit of 200kg. For use with people with weight up to 150kg, take proper actions in order to avoid any slack of rope that might cause additional dynamic loads. Use only single connector or Goblin Lanyard 26 cm. Avoid use of Goblin Lanyard 40 cm and 74 cm.	0999 Goblin
<b>Blin Kit Rope Fall Arrester</b> EN353-2	EN353-2 standard does not prescribe any weight limit for the user.	 <b>Only vertical use is authorized. Horizontal use is not allowed.</b> Additional tests by C.A.M.P. R&D Dept. showed that for this weight in the vertical use the standard requirements are satisfied. Avoid creation of any slack of rope. Horizontal use is not allowed for people with weight higher than 100kg.		2565 Blin Kit

**Use of CAMP Safety equipment by users with maximum total weight heavier than 100 kg**

Instructions Type of equipment	1. EN standards instructions	2. Total Weight 100-120 kg	3. Total Weight 120-150 kg	4. Instructions valid for:
<b>Rope Fall Arresters EN/353-2</b>	EN353-2 standard does not prescribe any weight limit for the user.	 <b>Use with connection through connector ref. 981 is authorized.</b> Additional tests by C.A.M.P. R&D Dept. with masses up to 150 kg were successful. Minimum clearance distance must be 2 m below user's feet.   <b>Use with connection through energy absorber ref. 1029.01 is NOT authorized.</b> Additional tests by C.A.M.P. R&D Dept. with masses heavier than 120 kg were not successful.		<b>1389-1390</b> Rope Fall Arrester.
<b>Cable Fall Arrester Kit ref.1317.01 EN353-2</b>	EN353-2 standard does not prescribe any weight limit for the user.	 <b>Use is authorized.</b> Additional tests by C.A.M.P. R&D Dept. with masses up to 150 kg were successful. Minimum clearance distance must be 2.7 m below user's feet. Never use the fall arrester alone, without the energy absorber ref. 1029.01.		<b>131701</b> Cable Fall Arrester Kit.
<b>Tripod Evo EN795/B</b>	EN795/B standard does not prescribe any weight limit for the user.	 <b>Use is authorized.</b> Safety depends on the devices used in combination with the tripod: check that the devices are suitable for this weight.		<b>1883</b> Tripod Evo.
<b>Rescue Lifting Device EN1496</b>	La norma EN1496 prevede che i test vengano effettuati con il valore massimo di peso dichiarato dal fabbricante.	 <b>Use is authorized.</b> Certification was carried out for a weight limit of 140 kg.	 <b>Use is authorized up to 140 kg.</b> Certification was carried out for a weight limit of 140 kg.	<b>0284</b> Rescue Lifting Device 20 m, <b>028401</b> Rescue Lifting Device 25 m.
<b>Pulleys EN12278</b>	EN12278 standard prescribes that rotation must be guaranteed for weight of 2 kN (200 kg approx.).	 <b>Use is authorized.</b> Declared working load limit is higher than 200 kg.		<b>1229</b> Small Pulley Fixed, <b>0606</b> Roller Fixed, <b>1099</b> Small Pulley Mobile, <b>0607</b> Roller, <b>1098</b> Big Pulley Mobile, <b>0641</b> Big Roller, <b>1097</b> Big Double Pulley, <b>0651</b> Double Roller, <b>2152</b> Sphinx, <b>2153</b> Sphinx Pro, <b>2154</b> Tethys, <b>2155</b> Tethys Pro, <b>2156</b> Dryad, <b>2157</b> Driad Pro, <b>2158</b> Naiad, <b>2159</b> Naiad Pro, <b>2160</b> Janus, <b>2161</b> Janus Pro, <b>1638</b> Flyte, <b>1049</b> Wing, <b>0108</b> Andry.
<b>Low Stretch Ropes EN1891</b>	EN1891 standard does not prescribe any weight limit for the user.	 <b>Use is authorized.</b> Safety depends on the devices used in combination with the rope: check that the system is suitable for this weight.		<b>2239</b> Lithium 10.5 mm, <b>2240</b> Lithium 11 mm, <b>2241</b> Lithium 12.5 mm, <b>0809</b> Lithium 10.5 mm heatcore, <b>0810</b> Lithium 11 mm heatcore, <b>25xx</b> Lithium 10.5 mm with loops, <b>26xx</b> Lithium 11 mm with loops, <b>0811</b> Blazer 11 mm, <b>0812</b> Roof 12 mm, <b>2810</b> Iridium 10.5 mm, <b>2811</b> Iridium 11 mm, <b>2809</b> Iridium 10 mm, <b>2812</b> Iridium 12.5 mm.
<b>Rescue Triangles EN1498</b>	EN1498 standard prescribes that dynamic tests are made with the maximum weight declared by the manufacturer.	 <b>Use is authorized.</b> Certification was carried out for a weight limit of 100 kg. Additional tests by C.A.M.P. R&D Dept. with masses up to 150 kg were successful.		<b>2050</b> Angel, <b>096701</b> Triangolo Special.