



## General information about RAUMER products

This general information explains how to use correctly the anchors.

The general information must be associated to the technical data sheet and the inspection sheet. Read both documents to have a complete information and ascertain to understand well all the informations, before to use the product. Only the techniques shown without symbol of death are authorized. Take Vision of the updates and of all the additional informations on the site [www.raumerclimbing.com](http://www.raumerclimbing.com) In case of doubt or difficulty to understand the informations, don't risk, but contact Raumer Srl – Via delle Prese 13 – 36014 Santorso (VI) – Tel. +39 371 3046373

### Anchor Antrax – Art. 298

### Anchor Superstar – Art. 160 and variants: Art. 119 – Art. 518

### Anchor Masterfix – Art. 151 and variants: Art. 125 – Art. 525

### Anchor Radius – Art. 519 and variants: Art. 520 – Art. 521

### Reference Standards:

#### Rock anchor - EN 959: 2018

#### Anchor device intended for

#### permanent installation – UNI 11578 tipo A

### UIAA 123

### Material: Stainless Steel AISI 316 L

### USE AND APPLICATION

The anchors Antrax Art. 298, Superstar Art. 160 – 119 – 518, Masterfix Art. 151 – 125 – 525, Radius Art. 519 – 520 – 521, are type A anchors, tested according to UNI 11578:2015, including fixed anchors points, intended for permanent installation, above or in the structure, designed to accomodate a connected user and an anti fall system according to UNI EN 363.

They're anchors for the protection against fall from a height, designed for use in climbing, caving, canyoning and mountaineering.

They're also tested according to EN 959:2018 designed for use as rock anchors; rock anchors are defined as anchor devices insert in a rock hole, held in place by resin (or expansion forces) and with an attachment point for a connector.

The anchor device is tested according to UIAA 123 - rock anchors.

When the anchor device is used as part of a fall arrest system, the user must be equipped with the necessary means to limit the maximum dynamic forces exerted on them during the arrest of a fall with a maximum of 6 kN.

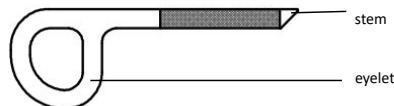
Warning: this anchor device must be used exclusively for protection against falls from a height and not for lifting equipment. This anchoring device is also designed for use in retention.

Don't stress the product beyond its limits or in other different situations than that for which it is intended. Check that the product is compatible with the other materials you want to use: contact Raumer if you are not sure of compatibility.

It is possible to directly connect the rope to the eyelet of the anchor for the items Superstar, Masterfix and Radius (they have eyelet with diameter > 9 mm).

**Attention: activities involving the use of this device are all dangerous and high-risk and may also involve in fatal injuries. Make sure you fully understand the use of this product and work out in how to use it, to familiarize yourself with it and learn to know its performances and limits.**

### NOMENCLATURE



### DYNAMIC STRENGTH TESTS

- 1) Direction parallel to longitudinal axis of the device
- 2) Direction perpendicular to longitudinal axis of the device

Peak of force: 9 kN  
Maximum deflection of anchor device: 5 mm  
Maximum displacement of anchor point: 5 mm  
The material is suitable to dynamic strength tests and integrity tests.

### MARKING

Producer: Raumer Srl – identified with logo “Raumer”

Pictogram indicating the need to read the instructions before use:



Identification serial number (example 298 001 0515) composed of:

- Identification of the model – Art. n. (es. 298)
- Lot number: (es. 001)
- Month and year of manufacture: (es. 0515 = may 2015)

Reference Standards: UNI 11578:2015  
EN 959:2018

Anchor class, surrounded by a circle: 2

Radius:	Axial Load bearing capacity: 30 KN	Radial load bearing capacity: 30 KN
Masterfix:	Axial Load bearing capacity: 35 KN	Radial load bearing capacity: 35 KN
Superstar:	Axial Load bearing capacity: 30 KN	Radial load bearing capacity: 30 KN
Antrax:	Axial Load bearing capacity: 27 KN	Radial load bearing capacity: 26 KN

See the table on the attached data sheet, with the effective resistance.

Material: Stainless Steel INOX AISI 316 L

Device usable by only a single connected user: 1P

Markings should always be read for all the lifetime of the product and must not be removed.

It's recommended that the anchor device is marked with the date of the next or last inspection.

If the marking of the connector is no longer accessible after installation, it must be provided some additional markings near the device.

### SECURITY REQUIREMENTS

Depending on environmental factors, the anchors are potentially responsible for suffering from:

- galvanic corrosion
- corrosion
- SCC: Stress Corrosion Cracking

Our anchors are made of 316L stainless steel and therefore of class 2, suitable for environments that are not aggressive enough to cause SCC; The environment in which they will be installed will be without signs of SCC in evidence and not suspect, with few corrosive agents.

We recommend using a resin that has good durability and resistance (see website [www.raumerclimbing.com](http://www.raumerclimbing.com)).

### Risks of use and responsibility

This product should only be used by competent persons and who have received adequate training, having been subjected to visual inspection by a trained and competent person.

It's yours responsibility to know this product, learn to use it, learn the proper techniques and the safety measures.

You alone are solely fully all risks and responsibilities for any damage, injury or death which may derivar to yourself or others persons, following incorrect use of each kind of product of the company RAUMER Srl. Keep these instructions that describe the range of use and the methods of application of the product. You are responsible to consider all the notices and updates regarding these products.

No liability will be recognized by the company Raumer Srl for damages, injuries or death caused by: improper use (also due to support or unsuitable environment), stresses the product beyond its limits, modification of the product, repairs made by unauthorized persons.

If you are not able to undertake this responsibility and take these risks, do not use these products. Your life depends on the continual efficiency of your equipment (we strongly recommend that the equipment is for personal use) and its history (use, storage, controls, etc.)

If the product is not for personal use (for example is of associations), we strongly recommend that the pre and post- use controls carried out by a competent person.

Check and make sure that all the anchors do not show signs of cracks or wear.

Before using the equipment consider as a possible rescue, in case of emergency, it can be performed

safely and efficiently.

Attention! Do not use the product if the user's physical conditions are not appropriate for work prescribed. Do not use this product if you suffer from medical conditions such as vertigo, labyrinthitis or other conditions which may compromise the safety of the equipment in normal use or emergency.

### CHECKS AND INSPECTIONS

#### Before each use

Before each use, make sure that the product is:

- in very good condition and working properly;
- suitable for the use you intend to do: they are authorized only the techniques not crossed out; any other use is forbidden: beware of death! The examples shown in the attached form are just some of the wrong applications: there are many other more that is impossible to list;
- free of cracks, deformations and corrosions ;

Carefully check the state and the type of support in that you want to fix the product; if the rock is cracked, etc. ... avoid it. If you have the minimum doubt about the safety and the effectiveness of the product, replace it immediately.

#### During each use

Regularly check the state of the product and make sure you have correctly connected all devices among themselves . Check visually the goodness of the anchor.

The resistance of natural/not natural anchors, in the rock, can't be guaranteed in advance, so it's necessary a critical judgment by the user, to guarantee an appropriate protection.

### Periodical inspections

It is not enough to check the material before and during use, but periodic checks must be made by a competent person at least every 2 years for checks on the anchoring system and 4 years for checks on the support structure and anchors. Pre and post use checks must be carried out by a competent person (adapt the frequency according to the intensity and type of use and to the place where the anchor is installed). When the checks are carried out it is necessary to report the results on a check sheet; this must allow you to record a lot of data; the verification form must always be attached to the product information note and can also be downloaded from the website [www.raumerclimbing.com](http://www.raumerclimbing.com)

Caution: You must make regular periodic inspections! The safety of users depends on the continued efficiency and durability of the equipment.

We recommend to hold and fill the inspection sheet for each component, system and sub-system. You can also download it from the site [www.raumerclimbing.com](http://www.raumerclimbing.com)

### COMPATIBILITY

This product can be used in combination with personal protective equipment compliant with Regulation (EU) 2016/425 of the European Parliament and of the Council of the European Union and compatible with the relative instructions for use (if there is compatibility of devices there is good functional interaction). An anchor must be compatible to the device to which it is connected; if the connection is incompatible, the safety functions of the system (release or breakage ...) may be compromised.

Compatible devices are, for example, manufactured and certified harnesses according to EN 12277, dynamic ropes certified according to EN 892, connectors in accordance with EN 362 or 12275, etc ...

Warning: Please avoid the use of these anchors with others made of different materials. For example, do not use plates made of stainless steel and galvanized steel anchors, because also in a modest hostile environment there will be obtained effects of galvanic corrosion.

Contact Raumer if you are not sure of the compatibility of your device.

### OPERATING MODE

Placing anchors using a resin glue is a simple but delicate process.

If not executed correctly, resistance to tensile and shear force can be seriously compromised. There are two recommended types of resin glue:

- A) BICOMPONENT EPOXY RESIN PACKAGED IN CARTRIDGES.
- B) SYNTHETIC ACYRLATE RESIN PREDOSED IN GLASS PHIALS.

**Attention: the use of polyester-based resins is not recommended.**

**We recommend using adhesives that offer adequate strength and long life.**

**The load-bearing of the anchor cannot be guaranteed if the rock in which it is installed is weak or not very homogeneous, not consolidated or with micro-cracks. In these cases we recommend using the anchor as long as possible.**

Instructions for each system are as follows:

#### Method "A"

1. Choose an undamaged and solid area of rock away from edges.
2. Strike theurface with a hammer to determine the rock consistency.
3. Drill a hole perpendicular to the placement surface. (Please note: the hole must be 2mm

wider than the shank diameter). The depth should be no more than 5mm longer than the anchor shank to reduce resin waste. To optimise placement, it is (almost) always recommended to also make a groove in line with the desired load. To do this, hold the drill perpendicularly to the surface and make a 1cm-deep hole 3.5cm from the centre axis of the upper hole, in line with the directional force. Now position the drill at a 45° angle and, beginning from the hole just created, make a 6-10mm deep groove to join with the upper hole. Clean well and test by inserting a “Superstar” eyebolt into the hole. The anchor must be positioned correctly inside the groove. When the resin is applied, this ensures perfect and permanent placement which is unaffected by vibrations and transversal force. Use the drill to make any necessary adjustments.

4. Clean the hole either with an appropriate pump or by blowing down a rubber tube. A pipe-cleaner is also recommended to completely remove any dust from inside the hole.
5. Using an injector gun, inject the correct amount of resin into the base of the hole and along the groove.
6. Insert the anchor to a point about 1cm from the base and twist in semicircles to coat the surface of the shank completely in resin. Now insert the “Superstar” fully into the groove. A small amount of resin may exit from the hole edges and around the eye, demonstrating a good fit. Use latex gloves throughout this procedure. Remove any excess resin from the edges of the eyelet, sealing the edges. This is important to prevent water from entering in the future. This is particularly important in marine environments.
7. When using this anchor to protect overhangs or roofs, use the same process as above but do not create the groove. Once the anchor is in place, hold it in position using a couple of cocktail sticks (or similar...) between the edge of the hole and the shank's surface. Without this the anchor has a tendency to fall out of the vertical hole. Once the resin has hardened the two sticks can be easily removed.
8. After applying the resin do not touch the anchor. Leave to set for at least 24 hours – if possible for 2/3 days, depending on ambient temperature. Respect any advice given by the resin's manufacturer.

#### Method “B”

As for method “A” up to and including step 4. However for obvious reasons, this system can not use the groove method as described above. Instead, as soon as the hole has been drilled and cleaned, continue as follows:

1. Take a phial of synthetic resin and hold for a few seconds; the hand temperature should loosen the resin and make it settle on the bottom. Insert the phial into the cleaned hole, ensuring that any air contained within the phial faces out.
2. Insert the anchor into the hole with the phial and break this using a hammer. Strike the head of the anchor hard, turning it at least ten times to coat the surface fully. It is very important to execute this process accurately as the internal catalyst container within the phial itself must break and mix completely with the resin. Without this synthetic resin is ineffective.  
Note: the process described above is difficult as the presence of the phial within the hole causes substantial resistance when attempting to insert the anchor. To remedy this, RAUMER has designed a small attachment (art.302) to be used with SDS Plus drills which allows for perfect and rapid anchor placement without excessive effort.
3. Turn the eyebolt to face the directional force and wait at least 24 hours before use.

**IMPORTANT NOTE:** Resin placement using method “B” has some obvious benefits in terms of convenience and practicality. However the quality, strength and durability factors are far from equal to bicomponent epoxy resin, which we recommend for almost all situations. Either way, to ensure a high quality placement we highly recommend using fresh resin which has recently been produced and has a long expiry date

Attention: These devices are corrosion resistant, as required by law, but not for use in marine environment.

**Attention: the rope can be connected directly to all our Superstar, Masterfix and Radius type chemical anchors, but not to the Antrax anchor**

#### Resistance

Our products comply with the requirements of EN 959: 2018 and UNI 11578: 2015 - see attached technical data sheet. They also comply with the requirements of UIAA 123.

Please note that the company Raumer disclaims any responsibility in case of improper installation and/or use in inappropriate rocks.

#### Precautions for use

Attention: after a fall or a major impact, check:

- rock around the anchor: there must be no cracks;
- anchor: observe it visually and check that there are no cracks, deformation, and verify that the anchor is not rotated or moved;

If you're in doubt replace it. Use only if the external temperature is between -40 ° and + 50 ° C.

For safety purposes, it's essential to systems of arrest fall from a height, that the anchor point is always placed, if possible, above the user; you use a complete safety belt; fixing is performed so as to minimize potential falls and their height.

The position is essential for safely blocking a fall: carefully judge what will be the height of the fall, length of rope and “pendulum” effect to avoid all possible obstacles (es. The ground, rubbing against the rocks, etc.). Get used to always double systems, during your activities, for extra security. Always make sure that connectors inserted in their anchorage are free to move and position in the right direction of load application.

For safety purposes, it is essential, to the arrest systems, fall, that the anchor point is always placed, if possible, above the user; use a complete safety belt; fix it to minimize potential falls and their height. The position is essential for safely blocking a fall: carefully judge what will be the height of the fall, length of cord and “pendulum” effect to avoid all possible obstacles (ex. the ground, rubbing against the rocks, etc.). Always use double systems, during your activities, for an extra security.

Always make sure that connectors inserted in their anchorage are free to move and position in the right direction of load application.

#### COMPLEMENTARY STANDARDS INFORMATIONS

- provide for a rescue plan and define the means to act quickly in case of difficulties (It means to be trained to apply the appropriate rescue techniques).
- allow a sufficient height under the user so, in case of fall, do not collide with obstacles (remember that also the length of the carabiner can affect on the height of the fall).
- check to use the product with respect to government regulations and the safety regulations in force.
- respect all the instructions of use given in the general informations of each device used or associated with this product.
- attention: you need health fitness for the activities at height.
- to the user of these devices must be provided all the instructions of use; the retailers must deliver the device with these instructions, in the language of the country of use, when it's sold out of the first country of destination

It's a user responsibility to record and store with these instructions, the information provided in the inspection sheet.

#### GENERAL INFORMATIONS

##### Life time

The potential life time of the Raumer's products is undefined (it is advisable to replace them anyway after 10 years). It is known that equipment may degrade progressively when it is used, so the actual life time of the products can not be quantified precisely, but occurs when the product becomes obsolete in the system or when it meets one of elimination.

The lifetime is also reduced considerably by the conditions and intensity of use: heavy use, contact with chemicals substances, use near sea water or splashing water (in this case we recommend the use of our “Marine” anchors line, which are much more resistant to corrosion of salt), high temperatures, abrasions or cuts, damage to parts/components of the product, chemical environments, mud, sand, snow, ice, competence of the user, violent shocks, storage, are some of the factors that accelerating product wear. Warning: the duration may be limited to only one use in specific conditions (contact with acids, dangerous chemicals products, if the product suffers sharp falls or tensions, etc ... this list is not exhaustive). If it's installed in a marine environment or other potentially corrosive environments, it would be better to use materials with high corrosion resistance (see our line “marine”); despite this, we invites the installer to monitor and inspect the anchors at regular intervals to check their status.

Attention: anchors installed in marine areas, on rocks containing ferrous inclusions or other minerals of not certain nature, in some cases may suffer violent corrosive attacks that can compromise its use even in very short time!

Attention: The life of the anchorage is limited in the case of an environmental stress corrosion cracking SCC.

##### Elimination

Do not use the product:

- after a violent fall, since no visible deformations could be considerably impaired resistance;
- if the result of the check is not satisfactory;
- when you do not know the entire history of its use and when it becomes obsolete and you have the slightest doubt about its reliability;
- general wear of the plate and / or significant reduction of the section in correspondence with the carabiner;
- if there're cracks, wear or defects;
- when corrosion severely alters the surface condition.

Destroy retired equipment to prevent further use.

#### Product obsolescence

The product may be judged obsolete and thus retired from service, when they occur, for example, incompatibility with other equipment, changes in applicable standards, etc ...

#### Chemical products

All chemicals, solvents or corrosive substances can be very dangerous for these items. If there's a chance to come in contact with these substances contact directly Raumer indicating composition and exact name of the product, so we can respond properly after studying the case.

#### Changes and repairs

Modifications and/or repairs not authorized by the company Raumer are prohibited because they can reduce product performance. Repairs or modifications must be carried out inside the department production of Raumer Srl and not outside.

#### Warranty

This product has a 3-year warranty, against every defects in manufacturing or material.

The guarantee excludes oxidation, normal wear and tear, modifications or alterations, incorrect storage, damage due to accidents, incorrect storage, negligence and improper use.

#### Transport

It does not need any special precautions for transportation, however avoid contact with chemical reagents or other corrosive substances.

#### Maintenance and storage

The user should not perform any special maintenance, but should be limited to the cleaning of the product as explained below.

Cleaning: frequently rinse the product only with lukewarm fresh water (max 40°C). Leave it to dry naturally away from direct heat. Do not put the product in contact with corrosive substances or solvents; do not store at extreme temperatures;

Storage: after cleaning and drying, store the equipments in a dry, cool, dark place (avoid UV rays), chemically neutral place (absolutely avoid saline environments), away from sharp edges, heat, humidity, corrosive substances or other potentially harmful conditions. Caution: Do not store when wet! Improper storage, as well as the aging of the product, may damage it and impair its performance and safety.

#### Testing and conformity

This product is tested by the notified body n ° 2008 - DOLOMITICERT S.C.A.R.L., Z.I. Villanova - Longarone (BL). This product is also tested and compliant with UIAA 123: Quality Label of the International Union of Mountaineering Associations.

Attention: laboratory tests, the instructions for use and standards are not always able to reproduce the practice, so the results obtained in real conditions of use in natural environments may sometimes differ to a considerable degree. The best instructions can be had from continuous use under the supervision of qualified and prepared instructors.