



Founder of the European Ropes Course Industry

# RCD Glossary/Definitions A-Z

as used in the Ropes Course Industry

# A

## AALA

Advisory Activities Licensing Authority. The Adventure Activities Licensing Authority inspects activity centres and other activity providers on behalf of the Department of Education and Skills (DfES). If the Licensing Authority is satisfied that the provider complies with nationally accepted standards of good practice, they issue a licence. <http://www.aala.org>

## Abseil

Abseiling (from the German abseilen, "to rope down") is the process of descending on a fixed rope. It is also known as: rappelling or rappeling.

## Access

The process by which participants or instructors gain access to a ropes course element.

## Accident

Any incident which does or could result or could have resulted in injury prEN:15567 Ropes Courses. See HSE information pertaining to RIDDOR – reporting of incidents, diseases and dangerous occurrences. <http://www.riddor.gov.uk/>

## Accident Book

The Accident Book BI 510 (ISBN 0717626032) is published by The Stationery Office and the current edition (2003) should be used in order to comply with data protection requirements (see news item 68 for more details). An entry must be made in the Accident Book to comply with the Social Security Administration Act 1992.

## ACCT

Association for Challenge Course Technology. ACCT is a United States trade association for ropes courses. <http://www.acctinfo.org/>

## Action System

prEN:15567 Ropes Course; definition: facility which permits the progression of the user (elements, platforms, access).

## Active Breaking System

prEN:15567 Ropes Course; definition: System operated by the user or another person.

## All In One

An RCD product that incorporates a double sided climbing wall and up to 5 team ropes course elements on only 2 structural poles.

## Annual Main Examination

prEN:15567 Ropes Course; definition: Verification, at intervals not exceeding 12 months intended to establish the overall level of safety of equipment, foundations and surfaces. NOTE: Typical checks include the effects of weather, evidence of rotting or corrosion and any change in the level of safety of the equipment as a result of repairs made, or added or replaced components.

## Arboricultural Expert

prEN:15567 Ropes Course; definition: Competent person able to undertake arboreal assessments, who will be covered by appropriate professional civil liability insurance. An arborist (or tree surgeon) is a professional who practises arboriculture, the management and maintenance of trees (generally in an urban environment). An arborist's work includes some or all of the following: planting, pruning, structural support, treatment of diseases, insects, or abiotic disorders, lightning protection, and tree removal. Arborists may also plan, consult, write reports and give legal testimony. Trees provide many benefits, but they are also very large, heavy, and complex organisms that require professional monitoring and treatment to ensure they are healthy and safe. The Certified Arborist Credential awarded by the International Society of Arboriculture is the minimum qualification of professionalism in the industry.

## Ascenders

A device for ascending a rope.

## Assisted Belay

prEN:15567 Ropes Course; definition: Belaying system where the participant is secured by at least one person, e.g. top rope, V-belaying, M-belaying.

## ARRCI

Advisory Association for Ropes Courses and Initiatives (ARRCI); inaugurated at the National Exhibition Centre in Birmingham in 1995. It produced the first national construction and operational standards in the UK for ropes courses, but is no longer in existence.

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# RCD Glossary/Definitions

# A-C

## Auto-belay

A trade example of this device is a Redpoint. The Redpoint Descender is a controlled descent device designed specifically for the climbing wall and climbing gym industry. The Redpoint Descender is typically installed overhead in indoor climbing gyms, on home climbing walls, on portable climbing walls, or on indoor and outdoor challenge courses and climbing towers. The Redpoint Descender provides a hands free belay for the climber, thereby eliminating the need for an additional climber or attendant to serve as belayer. The Redpoint Descender may be installed on a climbing wall where a top-rope would typically be used. Unlike a top-rope, however, the climber cannot hang suspended by the Redpoint Descender once he or she has let go of the wall. The climber will always be lowered to the ground at a continuous, controlled rate. The Redpoint Descender is NOT designed for lead climbing. The line automatically retracts into the unit, permitting repeated descents. The Redpoint Descender comes equipped with a replaceable line. The line may be replaced in the field by the end user. These devices are usually designed to conform to EN: 341: 1992 which is intended for the design and testing of rescue devices.

## Belaying

Belaying is the technique of controlling a climbing rope so that a falling climber does not fall very far.

## Belay Cable

In conjunction with a belay beam, this is the principal method of ensuring participants safety on a ropes course. It is the point from which participants are belayed.

## Belay devices

A mechanical device used to create friction when belaying by putting bends in the rope. Many types of belay device exist, including ATC, Gri-gri, Reverso, Belay Plates. Some belay devices may also be used as descenders. An Italian Hitch can sometimes be used instead of a belay device.

## Bill of Lading

A list that gives each part or mark number, quantity, length of material, total weight, or other description of each piece of material that is shipped to a jobsite. The receiver compares each item on this list to what is on the truck/boat and signs the statement. See also Shipping List.

## Bottom Roping

Belaying from the bottom of a climb or ropes course element.

## Bottle Screw

(see Turnbuckle / Screw Shackles)  
A long nut screwed internally with a right hand thread at one end and a left hand thread at the other. Typically used for adjusting the tension of ropes, cables, and tie rods.

## Bungee

An elastic cord composed of one or more elastic strands forming a core, covered in a woven sheath usually of nylon or cotton.

## Brake Block

Device used as part of an arresting mechanism on a zip wire.

## Cable Grip

(see wire rope grip)  
A device used for terminating a wire rope on a temporary basis.

## CAD

Abbreviation for Computer-Aided Drafting.

## Cambium Layer

The internal layer of living cells between the inner bark of a tree and the sapwood where growth takes place that produces secondary xylem and phloem.

## Cantilever

The part of a member that extends freely over a support which is not supported at its end.

## CEN

The European Committee for Standardisation, was founded in 1961 by the national standards bodies in the European Economic Community and EFTA countries.

## Certified Welder

A welder who has been certified by a competent experienced welding inspector or a recognised testing facility in the field of welding. The welder must be certified to make certain welds under qualified procedures. The welder must be qualified for each position, type weld, electrode, and thickness of base metal that is welded in the shop or field.

## Cladding

The exterior covering of the structural members of a building.

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# RCD Glossary/Definitions



## Continuous Belay

prEN:15567 Ropes Course; definition:

A belaying system that enables participants to progress from one action system to the next and that does not require participants to undo or change the connection to the belay system at height.

## Catenary

The curve assumed by a perfectly flexible, uniform, inextensible cable when suspended from its ends.

## Chest Harnesses

To be used in conjunction with a sit harness thereby largely fulfilling the role of a full body harness

## Challenge by Choice

A ropes course philosophy in which the underpinning principle ensures that participation in an activity is at the individual's discretion.

## Climbing Calls

A short phrase used for communication between a climber and a belayer.

## Chain Hoist

A device used for lifting or lowering a load by means of a drum or lift-wheel around which rope or chain wraps. It may be manually operated, electrically or pneumatically and uses chain as its lifting medium.

## Change Over

prEN:15567 Ropes Course; definition:

A transfer from one belay cable or anchor point to another.

## Coefficient of (Linear) Expansion

The change in length, per unit, for a change of one degree of temperature.

## Column

Is a main vertical member carrying axial loads, which can be combined with bending and shear, from the main roof beams or girders to the foundation. These structural members carry loads parallel to its longitudinal axis.

## Compression

A condition caused by the action of squeezing or shortening a component.

## Compression Member

Any member in which the primary stress is longitudinal compression.

## Concentrated Load

A single load or force that has such a small contact area as to be negligible compared with the entire surface area of the supporting member and applied at a certain point on the structure.

## Connection

A joint connected by welds or bolts used to transmit forces between two or more members. See also Splice.

## Continuity

The term given to a structural system denoting the transfer of loads and stresses from member to member as if there were no connections.

## Continuous Span

A span that extends over several supports and having more than two points.

## Continuous Weld

A weld which extends continuously from one end of a joint to the other.

## Contract Drawings

All the architectural, structural, mechanical, electrical, etc. plans that make up a legal set of contract documents by which to build a ropes course.

## Control Bureau

prEN:15567 Ropes Course; definition:

Any independent, competent body or person authorised to certify that a course conforms to the technical construction requirements of prEN: 15567 Ropes Courses. It shall be covered by appropriate professional civil liability insurance.

## Creep

A time-dependent deformation of a structural member under a sustained constant load.

## Cow's Tail

A short length or lengths of rope used for self belaying.

## Critical Application

prEN:15567 Ropes Course; definition:

Application where the consequences of a failure are likely to lead to a serious incident or accident.

## Curvature

The rotation per unit length of a member due to bending forces.

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## RCD Glossary/Definitions

# D-E

### Dead Load

Loads due to the weight of the components making up the structure and that are intended to remain permanently in place.

### Deck

A floor or roof covering made out of gage metal attached by welding or mechanical means to joists, beams, purlins, or other structural members and can be galvanised, painted, or unpainted.

### Deflection

The displacement of a structural member or system under load.

### Deformation

The act of distorting or changing the shape or dimensions of a structural element or body resulting from forces or stresses.

### Depth of Joist

The out-to-out distance from the top of the top chord to the bottom of the bottom chord taken at some reference location, usually at the midspan of the joist or joist girder.

### Design Documents

The plans, details, sections, specifications, etc. prepared by the building designer.

### Design Length

The 'span' of a joist or joist girder in feet minus 0.3333 feet.

### Design Loads

The loads specified in the contract drawings or specifications for which a building is to be designed.

### Design Strength

The resistance provided by a structure, member, or connection to the forces imposed on it.

### Diagonal Bracing

Structural members which are inclined and are usually carrying axial load which enable a structural frame to behave as a truss to resist horizontal loads.

### Descenders

A device for controlled descent on a rope. Some belay devices may be used as descenders.

### Developmental Ropes Course / Programme

A ropes course that enables qualified and experienced facilitators to focus on a variety

personal and team issues with their clients. It is ideal for confronting fears and anxieties and challenges may be physical or emotional. Trust is frequently a key issue and problem solving and leadership may be part of such programmes. They encourage co-operation, decision making, self confidence, risk taking skills, goal setting abilities and team working skills. Technical skills can also be taught and perfected.

### DIN

DIN Deutsches Institut für Normung e.V. (DIN; in English, the German Institute for Standardisation) is the German national organisation for standardisation and is that country's ISO member body.

### Direct Belay

A system whereby a climber is belayed directly to a ground anchor point without any connection to a belayer (other than the belayer holding the rope!). This practice should only be exercised when the integrity of the ground anchor can be guaranteed.

### Direct Supervision

prEN:15567 Ropes Course; definition: A situation whereby an instructor can physically intervene.

### Drift

The lateral movement or deflection of a structure.

### Dynamic Loads

A load associated with the elastic deformations of a material or structure subjected to time-dependent external forces. A load that varies with time which includes repetitive loads, seismic loads, and other loads created by rapid movement.

### Dynamic Rope

A partially elastic rope that dampens the impact of a fall.

### Eccentric

The condition that exists when a load is applied on a line of action that does not pass through the centroid of the body to which it is applied.

### Eccentricity

The distance between a line of action of force and the centroid of the member to which it is applied.

### Effective Depth

The distance from the centroid of the top chord to the centroid of the bottom chord.

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# RCD Glossary/Definitions

## E-F

### Effective Length

The equivalent length, KL, used in compression formulas. This method estimates the interaction effects of the total frame on a compression member by using K factors to equate the strength of a framed compression member of length L to an equivalent pin-ended member of length KL subject to axial load only.

### Effective Length Factor (K)

The ratio between the effective length and the unbraced length of a member measured between centre of gravities of the bracing members. K values are given for several idealised conditions in which joint rotation and translation are realised.

### Effective Moment of Inertia

The moment of inertia of the cross section of a member that remains elastic when partial plastification takes place. See Moment of Inertia.

### Effective Width

The transverse distance indicating the amount of slab that acts in conjunction with the supporting member.

### EJ

Abbreviation for 'Expansion Joint'.

### Elastic Analysis

The analysis of a member which assumes that material deformation disappears on removal of the force that produced it and the material returns to its original state.

### Elastic Design

See Allowable Stress Design and Working Stress Design.

### Element

Part of an action station. Normally referred to as the challenge itself e.g. High All Aboard.

### Embedment

A steel member such as a plate, bolt, stud, or bar cast into a concrete structure which is used to transmit applied loads to the concrete.

### ERCA

European Ropes Course Association. Committed to furthering good working practice in the ropes course industry. [www.erca.co.uk](http://www.erca.co.uk)

### European Ropes Course Standard

prEN: 15567 for Ropes Courses.

### Expert Witness

Is a witness, who by virtue of education, profession, publication or experience, is believed to have special knowledge of his subject beyond that of the average person, sufficient that others may officially (and legally) rely upon his opinion.

### Fabrication

The manufacturing process to convert raw materials into a finished product by cutting, punching, welding, cleaning, and painting.

### Factor of Safety

Is the ratio of the ultimate load for a member divided by the allowable load for a member and must always be greater than unity.

### Factored Load

The product of the nominal load and a load factor.

### Fall factor

The fall factor which typically lies between 0 and 2 can be determined by dividing the length of the fall by the length of the rope in use. It is the relationship between the length of a fall and the quantity of rope available to absorb the energy of the fall.

### Falling Space

prEN:15567 Ropes Course; definition: Any space into which a user may enter during a fall.

### Fastener

Term for a connecting device such as a weld, bolt, rivet, etc.

### Free Space

prEN:15567 Ropes Course; definition: Space in, on or around an element that can accommodate a user carried along passively by the equipment (for example Tyrolean traverse, swing, slide, etc.).

### Fan Descender

A device that will safely and repeatedly control a person's descent; dissipating the potential energy by means of a fan. POWERFAN™ most well known example.

### Fatigue

A phenomenon which results in the sudden fracture of a component after a period of cyclic loading. Failure is the end result of a process involving the initiation and growth of a crack, usually at the site of a stress concentration on the surface which reduces the effective cross sectional area so that the component ruptures under a normal service load.

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# RCD Glossary/Definitions

# F-H

## Ferrule Secured Termination

Method of permanently securing a wire rope by means of a compression fitting.

## Fire Proofing

The process of coating a structural steel member with a fire retardant material to make the member resistant to fire.

## Fire-Resistance

The ability of a joist or other structural member to resist a fire due to the type of protection it has, such as membrane protection or spray on protection. There are hundreds of floor-ceiling or roof-ceiling assemblies with their fire-resistance rating given in the Underwriters Laboratory Fire Directory.

## Fixed-End Support

A condition where no rotation or horizontal or vertical movement can occur at that end. This type of support has no degrees of freedom. Three reactive forces exist at the rigidly fixed end. See also Rigid Connection.

## Flange

The projecting edge of a structural member.

## Fixed Ropes

A rope usually left in position. A rope which has a fixed attachment point; commonly used for abseiling.

## Footing

A concrete pad or mat located under a column, wall, or other structural member that distributes loads from that member into the supporting soil.

## Foundation

The substructure which supports a building or other structure.

## Frame

A structural framing system consisting of members joined together with moment or rigid connections which maintain their original angular relationship under load without the need for bracing in its plane.

## Full Body Harnesses

A full-body harness is most commonly used in industrial/rescue situations but is also very useful on ropes courses. In essence, it is the combination of a sit harness and a chest harness which are permanently or semi-permanently connected to each other. These harnesses normally offer a very extensive range of attachment points allowing for safe positioning in a number of positions.

## Galvanised

The process of coating steel with zinc for corrosion resistance.

## Geo Textile Membrane

A textile material commonly used for laying under stone, gravel or bark chip. Ideal to prevent vegetation growth and the subsidence of the material into the ground.

## Giant Swing

prEN:15567 Ropes Course; definition: Action system where the user performs guided pendulum (to and fro) movements.

## Girder

A main horizontal, primary structural member spanning between two main supports which carries other members or vertical loads.

## Gri-gri

Belay device.

## Guys

Also known as stays are generally cables used to aid stability in tall structures (e.g. ropes courses!). They are attached to the structure at one end and to the ground at the other.

## Hébert

George Hébert the founder of ropes courses. He was a French naval officer in the early 1900s who developed his own methods of physical education. This included building obstacles that reflected those found on the decks of ships. "Hébertism" became the standard for physical education training for the French military. Many ropes courses in French Canada and Europe are still known as Hébertism courses today.

## Hard Core

Generic term given to lumps of broken brick, hard natural stone etc and used as the foundation for a structure.

## Hip Roof

A roof which slopes from all four sides of a building. The line where two adjacent sloping sides intersect is called the 'hip'.

## Hooke's Law

The linear relationship of forces and deformations, or stresses and strains.

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# RCD Glossary/Definitions

H-L

## Horizontal Shear Stress

The internal action in a beam that acts at rightangles to the axis of the beam in the plane of loading equals the rate of change of bending moment along the axis of the beam.

It is zero at the outer fibers of a section and is maximum at the neutral axis. It tends to cause one part of the section to slide past the other. Formula: Horizontal Shear stress (in psi) =  $(V * Q) / I * t$ , where 'V' is the external vertical shear on the section in lbs, 'I' is the moment of inertia of the section in inches <sup>4</sup>, 'Q' is the statical moment about the neutral axis of the entire section of that portion of the cross-section lying outside the cutting plane and 't' is the width at the cutting plane.

## Impact Factor

The factor by which the static weight is increased by dynamic application.

## Impact Load

A weight that is dropped or a dynamic load generated by movement of a live load such as vehicles, craneways, etc.

## Impact Strength

The ability of a material to absorb the energy of a load delivered rapidly to a member.

## Inaugural Inspection

The first inspection of a ropes course following construction or after any significant alteration to a ropes course. prEN: 15567 requires that this be carried out by an independent body.

## Incident

prEN:15567 Ropes Course; definition: Any given event in which optimum levels of safety are not maintained e.g. an instructor forgets to mention an important safety rule.

## Indirect Belay

A belay system whereby the climber is attached to a ground anchor and the belayer. This system enables the belayer to easily "escape" from the system if required.

## Indirect Supervision

prEN:15567 Ropes Course; definition: A situation whereby an instructor can clearly see the participant and intervene verbally.

## Instability

A condition reached when a structure or structural member is loaded in which continued deformation results in a decrease in its load-resisting capacity.

## Instructor

Generic term given to any person responsible for participant's safety on a ropes course. Particularly relates to physical safety and technical skills.

## Intermittent Weld

A weld which is not continuous. It is broken by recurring unwelded spaces.

## JCT (Joint Contracts tribunal)

The Joint Contracts Tribunal was established in 1931 and has for 75 years produced standard forms of contracts, guidance notes and other standard documentation for use in the construction industry. In 1998 The Joint Contracts Tribunal became incorporated as a company limited by guarantee. The company is responsible for producing suites of contract documents and in operating the JCT Council.

## Joint

The area where two or more ends or surfaces are joined by a weld or other fastener. See Panel Point.

## Joint Penetration

The minimum depth the weld metal extends from its face into a joint.

## Karabiner

Universal means of attachment in climbing related activities. Essentially metal hooks with a sprung gate.

## Knee Brace

A structural brace positioned diagonally between a beam or column and a joist panel point.

## Knot

A fastening made by tying a rope or similar material

## Landing Area

prEN:15567 Ropes Course; definition: Area in which a participant exiting an element can land.

## Lateral Buckling

Also called lateral-torsional buckling. This is buckling of a member involving lateral deflection and twist.

## Lateral Bracing

Members, fasteners, or welds which brace a member at certain locations to prevent lateral movement.

## Leg

The flat projecting part of a structural angle.

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# RCD Glossary/Definitions

L-P

## Leveling Plate

A steel plate used on top of a foundation on which a structural column can be placed.

## Live Load

Loads on a member that are not permanent and are likely to be moved at some point in the life of the structure. They can be loads produced by the use and occupancy of the building. These loads do not include dead load, wind load, snow load, or seismic load.

## Load

An external force or other action acting on a member or structure. It can be from permanent construction, environmental effects, differential settlement, occupants, and material objects.

## Load Combination

The combination of loads which produce the worse loading condition in a structural member.

## Longitudinal

The direction extending along the long axis of the member.

## Low Stretch Rope (see static rope)

Non elastic rope. Usually reserved for descending and ascending.

## LRFD

### (Load and Resistance Factor Design)

A method of proportioning structural members so that no limit state is exceeded when all appropriate load combinations have been applied.

## Maillon Rapide

Universal means of attachment but more permanent in nature than a karabiner. Trade make.

## Maximum Fall Height

prEN:15567 Ropes Course; definition: Maximum height from which a participant attached to the safety line by a lanyard can fall.

## Mobile Ropes Course

prEN:15567 Ropes Course; definition: Facility which is transportable.

## Modulus of Elasticity (E)

Is the slope of the straight-line portion of the stress-strain curve in the elastic range found by dividing the unit stress in ksi by the unit strain in in/in. For all structural steels, the value is usually taken as 29,000 ksi. This is also called Young's Modulus.

## Moment

The tendency of a force to cause a rotation about a point or axis which in turn produces bending stresses.

## Moment Connection

A connection designed to transfer moment as well as axial and shear forces between connecting members.

## Moment Diagram

A diagram that graphically represents the moment at every point along the length of a member.

## Moment of Inertia

A physical property of a member which helps define rigidity or stiffness and is expressed in inches raised to the fourth power. It is a measure of the resistance to rotation offered by a section's geometry and size.

## Moment Plate

A welded steel plate used to develop a rigid connection to the supporting member so that moment transfer can occur.

## Near Miss

prEN:15567 Ropes Course; definition: Any incident which might have caused an accident. NOTE e.g. a participant is in a position where he/she could fall and the karabiner has not been closed.

## Observation

prEN:15567 Ropes Course; definition: A situation whereby participants are within 360° range of sight but not always in line of sight (e.g. occasionally hidden by a tree) and the instructor and participants can communicate verbally.

## Operational Inspection

prEN:15567 Ropes Course; definition: Inspection, more detailed than routine visual inspection. NOTE, Typical checks include an examination for wear.

## Partially Restrained

A type of connection that displays a moment rotation behaviour that can neither be described as pinned nor fixed.

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# RCD Glossary/Definitions

# P-S

## Pin Connection or Support

A connection where no moment is transferred from one member to another, only axial and shear forces. This type of support has one degree of freedom, it can freely rotate about its axis but it cannot displace in any direction. Two mutually perpendicular reactive forces exist at the pin and their lines of action pass through the centre of the pin. See Hinge Support.

## Pendulum

A simple gravity pendulum is a weight (person) on the end of a cable which, when given an initial push or is dropped, will swing back and forth under the influence of gravity over its central (lowest) point.

## Perlustrate

To traverse and inspect.

## Permanent Ropes Course

prEN:15567 Ropes Course; definition: Facility installed for more than one week on the same site.

## Plate

A thin, flat piece of metal of uniform thickness, usually 8 inches to 48 inches in width.

## Passive Breaking System

prEN:15567 Ropes Course; definition: System operating automatically (e.g. bungee, gravity, net, water...).

## Portal Frame

A rigid frame structure which is designed to resist longitudinal loads where diagonal bracing is not permitted. It has rigidity and stability in its plane.

## Primary Members

This is the main load carrying members of a structure such as a beam or joist girder.

## PFC

Abrev. Parallel Flange Channel.

## Platforms

prEN:15567 Ropes Course; definition: Flat, practically horizontal raised area.

## Potential Energy

Universal concept of energy stored by virtue of position in a field, without any observable change, e.g. after a mass has been raised against the pull of gravity.

## POWERFAN™

See fan descender.

## Pulleys

A grooved wheel on a shaft for carrying a rope.

## PPE

Personal Protective Equipment.

## Reaction

The force or moment developed at points of a support.

## Redpoint Descender

See Auto Belay.

## Redundants

The reactions which are not necessary for static equilibrium.

## Reinforcement

An additional member added to a structural member to provide additional strength.

## Reinforcing

The process of strengthening a member with some additional piece of material.

## Rescue

The action taken to get a ropes course participant to the ground safely. This is carried out by an instructor. prEN: 15567 requires that this shall be achieved within 10 minutes from any part of a ropes course.

## Resistance

The capacity of a structure or structural member to resist the effects of loads or forces imposed on it.

## Retractable life Lines

Similar to an auto belay but in the event of a fall will lock rather than lower.

## RHS

Abbrev. Rectangular Hollow Section.

## Routine Visual Check

prEN:15567 Ropes Course; definition: Inspection intended to identify obvious hazards that can result from vandalism, use, or weather conditions. NOTE, Typical hazards can take the form of broken parts or broken bottles.

## Safety line

prEN:15567 Ropes Course; definition: Flexible or rigid, horizontal, vertical or sloping, continuous or discontinuous device used as a protection against falling from a height.

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# RCD Glossary/Definitions

# S-T

## Self Belaying System

prEN:15567 Ropes Course; definition: Belaying system which is operated by the participant him/herself. Example is "cowstail" belaying.

## Shear

A condition or force causing two contacting parts of a material to slide past each other in opposite directions parallel to their plane of contact.

## Specification

The detailed description of requirements, materials, dimensions, etc. of a proposed ropes course project

## Spotting

prEN:15567 Ropes Course; definition: This type of support does not require any specific equipment. One or more people work together to catch, hold or give physical support to other participants.

## Static Load

A load applied slowly and then remains nearly constant.

## Static Sag

prEN:15567 Ropes Course; definition: The maximum vertical distance between a) the imaginary line between the anchor points of the safety line and b) the middle of the safety line when the traffic load is applied.

## Stiffener

A member used to strengthen another member against buckling or to distribute load or to transfer shear. Usually a flat bar, plate, or angle welded perpendicular to the longitudinal axis of the member.

## Stiffness

The resistance to deformation of a structural member which can be measured by the ratio of the applied force to the corresponding displacement.

## Stress

An internal force that resists a load. It is the intensity of force per unit of area, i.e., psi (pounds per square inch).

## Stress Concentration

A localised stress which is considerably higher than average due to sudden changes in loading or sudden changes in geometry.

## Stringer

In buildings, a structural member supporting stair steps.

## Strong Axis

The cross section which has the major principal axis.

## Structure

A mechanism designed and built or constructed of various parts jointed together in some definite manner to carry loads and resist forces.

## Structural Steels

A large number of steels that are suitable for load-carrying members in a variety of structures because of strength, economy, ductility, and other properties. Strength levels are obtained by varying the chemical composition and by heat treatment.

## Strut

A structural member used as a brace to resist axial forces.

## Superimposed Load

Usually means a load that is in addition to the dead weight of the bar joists and bridging.

## Support System

prEN:15567 Ropes Course; definition: Artificial and/or natural structure intended for installation of action and safety systems.

## Surface Flash

Surface flash is the rapid spread of flame over the surface of a material without combustion of the basic structure at that time. prEN:15567 Ropes Courses.

## Stays (see Guys).

## Swage

Another word for ferrule secured terminations.

## Systems providing protection against falling from a height

prEN:15567 Ropes Course; definition: Systems used either to arrest or cushion a participant's fall. Fall prevention systems may consist of a guard rail, safety line, landing mat, net, retractable lifeline, etc.

## Temporary Ropes Course

prEN:15567 Ropes Courses  
Facility which has been installed for up to one week.

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# RCD Glossary/Definitions

# T-Z

## Temporary Structure

Anything which is built which will not become part of the permanent structural system and will eventually be removed before or after the completion of the structure.

## Tensile Strength

The longitudinal pulling stress a material can withstand without tearing apart or the maximum tensile stress the material can sustain. Or ultimate strength, is the largest unit stress a material can achieve in a tensile test.

## Tension

A condition caused by the action of stretching or pulling of a component.

## Thrust

The horizontal component of a reaction or an outward horizontal force.

## Tie

A rod, plate, or angle welded between a two angle web member or between a top or bottom chord panel to tie them together usually located at the middle of the member. See Filler or Plug.

## Tie Joist

A joist that is bolted at a column.

## Torsion Loads

A load that causes a member to twist about its longitudinal axis. Simple torsion is produced by a couple or moment in a plane perpendicular to the axis.

## Toppas

A make of auto belay.

## Toughness

The ability of a steel to absorb large amounts of energy without being readily damaged.

## Traverse

To climb horizontally.

## Tyrolean Traverse

prEN:15567 Ropes Course; definition:  
Wire ropes (essentially horizontal) on which participants progress under their own power.

## U.B.

Universal Beam.

## U.C.

Universal Channel.

## Ultimate Load

The force necessary to cause rupture.

## Ultimate Strength

The maximum stress attained by a structural member prior to rupture, which is the ultimate load divided by the original cross-sectional area of the member.

## Vertical Life Lines

Vertical cables on ropes courses designed to facilitate easy and safe accessing by instructors. Attachment to the cable is by means of an industrial ascending device. Vertical lifelines help to ensure conformity to working at height legislation.

## Web

1) The vertical or diagonal members joined at the top and bottom chords of a joist or joist girder to form triangular patterns or  
2) The portion of a structural member between the flanges.

## Welded Splice

A splice between two materials which has the joint made continuous by the process of welding.

## Welding

The process of joining materials together, usually by heating the materials to a suitable temperature.

## Weldability

Is the ability of a steel to be welded without its basic mechanical properties being changed.

## Wind Load

A force or lateral pressure in pounds per square foot that is applied to a member due to wind blowing from any direction.

## Working Load

Also called service load, is the actual load that is acting on the structure.

## Working Load Limit

The maximum mass or force which a product is authorised to support in general service when the pull is applied in-line, unless noted otherwise, with respect to the centreline of the product.

## Yield Point (Fy)

Is that unit stress at which the stress-strain curve exhibits a definite increase in strain without an increase in stress which is less than the maximum attainable stress.

## Zip Wire

prEN:15567 Ropes Course; definition:  
Action system in which the user glides down a wire under gravity.

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