

# Trussed Rafters

## Glossary of terms



### **Apex/Peak**

The uppermost point of a truss.

### **Attic truss**

A truss which forms the top storey of a dwelling, but allows the area to be habitable by leaving it free of internal web members. This will be compensated by larger timber sizes elsewhere.

### **Bargeboard**

Board fitted to conceal roof timbers at gable end.

### **Battens**

Small timber members spanning over trusses to support tiles, slates, etc.

### **Bearer**

A member designed to distribute loads over a number of trusses.

### **Bearing**

The part of a truss receiving structural support. This is usually a wallplate, but can be an internal wall, etc.

### **Binder**

A longitudinal member nailed to trusses to restrain and maintain correct spacing.

### **Birdsmouth**

A notch in the underside of a rafter to allow a horizontal seating at the point of support (usually with raised tie trusses).

### **Blocking**

Short timbers fixed between chords or between a chord and gable wall to prevent lateral movement. They should be at least 70% of the depth of the chords.

### **Bobtail**

A truss type formed by truncating a normal triangular truss.

### **Bottom chord**

See ceiling tie.

### **Bracing**

This can be temporary, stability or wind stability and integrity of the building as a whole.

### **Building designer**

The person responsible for the structural stability and integrity of the building as a whole.

### **Camber**

An upward vertical displacement built into a truss in order to compensate for deflection which might be caused by the loadings.

### **Cantilever**

The part of a structural member of a truss which extends beyond its bearing.

### **Ceiling tie**

The lowest member of a truss, usually horizontal, which carries the ceiling construction, and to which storage loads and water tanks are applied.

### **Chevron bracing**

Diagonal bracing nailed to the truss in the plane of the specified webs to add stability.

### **Connector plate/fastener**

See nailplate.

### **Cripple rafter**

See jack rafter.

### **Dead load**

The load produced by the fabric building, always long term (see design loads).

### **Deflection**

The deformation caused by the loads.

### **Design loads**

The loads for which the unit is designed. These consider the duration of the loads long term, medium term, short terms and very short term.

### **Duo/dual pitch truss**

A truss with two rafters meeting at the same apex, but not necessarily having the same pitch on both sides.

### **Dwangs**

See noggings.

### **Eaves**

The line where the rafter meets the wall.

### **Eaves joint**

The part of the truss where the rafter and the ceiling tie intersect. This is usually where the truss is supported.

### **Extended rafter**

See raised tie truss.

### **Fascia**

Horizontal board fitted along the length of the building to the edge of the truss overhangs.

### **Fastener**

See nailplate.

### **Fink truss**

The most common type of truss used for dwellings. It is duo pitch, the rafter having the same pitch. The webs form a letter 'W'.

### **Firring piece**

A tapered timber member used to give a fall to flat roof areas.

**French heel**

An eaves joint where the rafter sits on the ceiling tie.

**Gable end**

The end wall, which is parallel to the trusses and extends upwards vertically to the rafters.

**Girder truss**

Two or more trussed rafters fixed together, designed to act as a single structural unit carrying exceptional loads such as those imposed by other trussed rafters fixed to it.

**Hip end**

An alternative to a gable end where the end wall finishes at the same height as the adjacent walls. The roof inclines from the end wall, usually (but not always) at the same pitch as the main trusses.

**Hip set**

The trusses, girders and loose timbers required to form a hip end.

**Horn**

An extension of the ceiling tie of a truss (usually mono pitch or bobtailed trusses) which is built into masonry as a bearing.

**Imposed load**

The load produced by occupancy and use including storage, inhabitants, moveable partitions and snow, but not wind. Can be long, medium or short term.

**Internal member**

See webs.

**Intersection**

The area where roofs meet.

**Jack rafter**

An infill rafter completing the roof surface in areas such as corners of hip ends or around chimneys.

**Live load**

Term sometimes used for imposed loads.

**Longitudinal bracing**

Component of stability bracing.

**Loose timber**

Timbers not part of a truss, but added to form the roof in areas where trusses cannot be used.

**Mono-pitch truss**

A truss in the form of a right angled triangle with a single rafter.

**Nailplate**

Metal plate having integral teeth punched from the plate material. It is used for joining timber in one plane with no overlap. It will have an accreditation certificate and will be manufactured, usually, from galvanised steel.

**Nib**

See horn.

**Node**

Point on a truss where the members intersect.

**Noggings**

Timber pieces fitted at right angles between the rafters and ceiling ties to form fixing points.

**Overhang**

The extension of a rafter or ceiling tie of a truss beyond its support or bearing.

**Part profile**

See bobtail.

**Peak**

See apex.

**Permissible stresses**

Design stresses for grades of timber.

**Pitch**

The angle of the rafter to the horizontal measured in degrees.

**Plate**

See nailplate.

**Purlins**

Timber members spanning over trusses to support roof covering or between trusses to support loose timber members.

**Quality Assurance Scheme**

Essential quality control method in truss manufacture administered by a UKAS registered notified body.

**Quarter point**

The point on a rafter where the strut intersects in a fink truss.

**Queen**

Internal member or web which connects the apex to a third point of a fink truss.

**Rafter**

The uppermost member of a truss which normally carries the roof covering.

**Rafter diagonal bracing**

Component of stability bracing.

**Raised tie trusses**

A truss which is supported at a point on the rafter that is beyond the point where the rafter meets the ceiling tie.

**Reducing trusses**

See valley frames.

**Remedial detail**

A modification produced by the trussed rafter designer to overcome a problem with the truss after its manufacture.

**Return span**

The span of a truss being supported by a girder.

**Ridge**

The line formed by the truss apexes.

**Ridgeboard**

Timber running along a ridge and sandwiched between loose rafters.

**Roof designer**

The person responsible for the roof structure as a whole and who takes into account its stability and capability of transmitting wind forces on the roof to suitable load-bearing walls.

**Room in Roof (RIR)**

See attic truss.

**Scab**

Additional timber fitted to the side of a truss to affect a local reinforcement, particularly in raised tie trusses.

**Setting out point**

The point on a truss where the undersides of the rafter and ceiling tie meet.

**Skew nailing**

A method of fixing trusses to the wallplate by driving nails at an angle through the truss into the wallplate, which is generally not recommended. (See truss clip).

**Soffit**

Board fixed underneath eaves overhang along the length of the building to conceal timbers.

**Span**

Span over wallplates is the distance between the outside edges of the two supporting wallplates. This is usually the overall length of the ceiling tie.

**Spandrel panel**

A timber frame, triangular panel forming a wall above ceiling line. Either as a party wall to provide fire compartmentalisation between dwellings or as a gable end wall.

**Splice**

A joint between two members in line using a nailplate.

**Spreader beam**

See bearer.

**Stability bracing**

Arrangement of additional timbers fixed in the roof space to provide lateral support for trussed rafters.

**Strap**

Metal component designed to fix trusses and wallplates to walls.

**Strut**

Internal member connecting the third point and the quarter point on a fink truss.

**Stub end**

See bobtail.

**Temporary bracing**

Essential support installed for safety during initial stages of truss installation. Failure to correctly install effective temporary bracing creates a significant safety risk.

**Third point**

Point on the ceiling tie where the internal webs meet in a fink truss.

**Timber stress grading**

The classification of timber into different structural qualities based on strength.

**Top chord**

See rafter.

**Trimmer**

A piece of timber used to frame around openings.

**Trussed rafter**

A lightweight framework, generally but not always triangulated, placed at regular intervals to support the roof. It is made from timber members of the same thickness, fastened together in one plane using nailplates.

**Trussed rafter designer**

The person responsible for the design of the trussed rafter as a component and for specifying the points where bracing is required.

**Truss clip**

A metal component designed to provide a structural connection of trusses to wallplates, in order to resist wind uplift and to prevent the damage often seen with skew nailing.

**Truss show**

A metal component designed to provide a structural connection and support for a truss to a girder or beam.

**Uniformly distributed load**

A load that is uniformly spread over the full length of the truss member.

**Valley board**

A member raking from incoming ridge to corner in a valley construction.

**Valley frames/set**

Infill frames used to continue the roofline when roofs intersect.

**Verge**

The line where the trussed rafters meet the gable wall.

**Wallplate**

A timber member laid along the length of the load bearing walls to support the trusses.

**Webs**

Timber members that connect the rafters and the ceiling tie together, forming triangular patterns which transmit the forces between them.

**Wind bracing**

An arrangement of additional timbers or other structural elements in the roof space, specially designed to transmit wind forces to suitable load-bearing walls.