

STAIRS TECHNICAL SPECIFICATION GUIDE

APRIL 2017



CHOOSE THE **BEAUTY** AND **PERFORMANCE** OF **TIMBER**

Choosing the right stairs can make a huge difference to the look and feel of any property. JELD-WEN invests heavily in research and development to meet legislative performance criteria, as well as aesthetic design to meet the needs of architects, specifying bodies, contractors and consumers.

JELD-WEN stairs are specified for many high profile developments, including zero carbon projects. Timber is one of the few fully sustainable building products and can reduce energy consumption more effectively than most man-made materials.

JELD-WEN aims to source all its timber according to recognised chain of custody schemes, and a full Forest Stewardship Council® (FSC®) chain of custody certification is available on request.



Proud to be UK based

Like you, we believe that UK manufacturing is unparalleled in terms of quality and craftsmanship.

All our stairs have been manufactured and assembled right here in the UK.



Supporting you

You can download accurate CAD drawings of our products from the 'Professionals' section of our website or request a CAD disc by emailing us at marketinguk@jeldwen.com.

We also offer free RIBA accredited CPD courses that will explain our timber stairs in more detail, and will add points to your core curriculum studies. Visit our website for more information and to complete your enquiry form.





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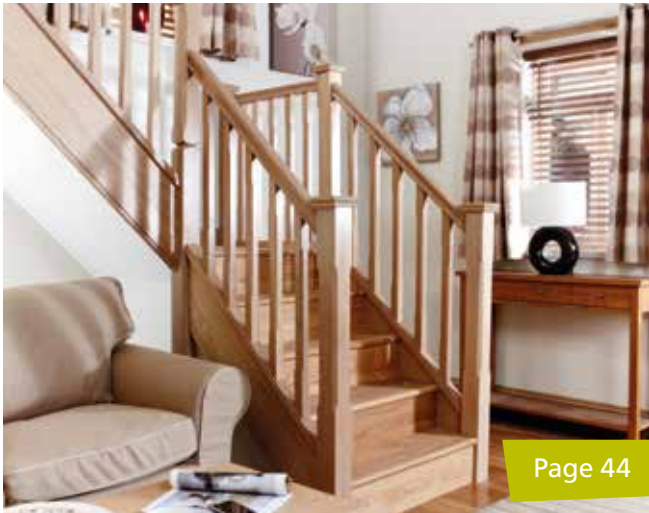
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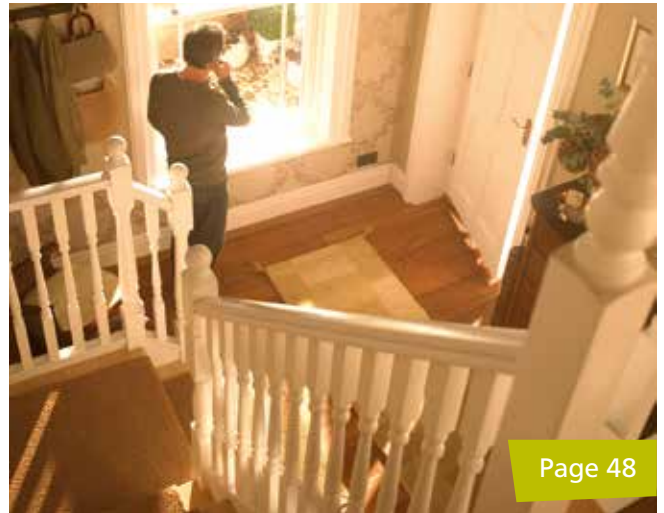
OUR RANGE

We offer standard straight flights from stock or a fully made to measure service to suit your project. Contact us to discuss your requirements.

DOMESTIC STAIRS



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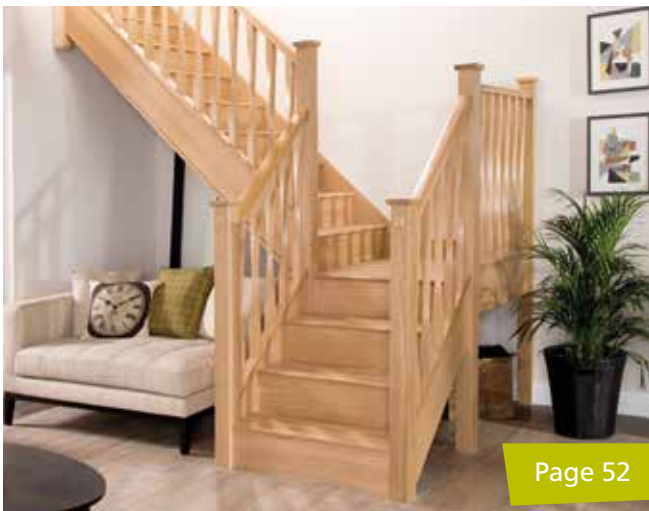
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PRESTIGE RANGE

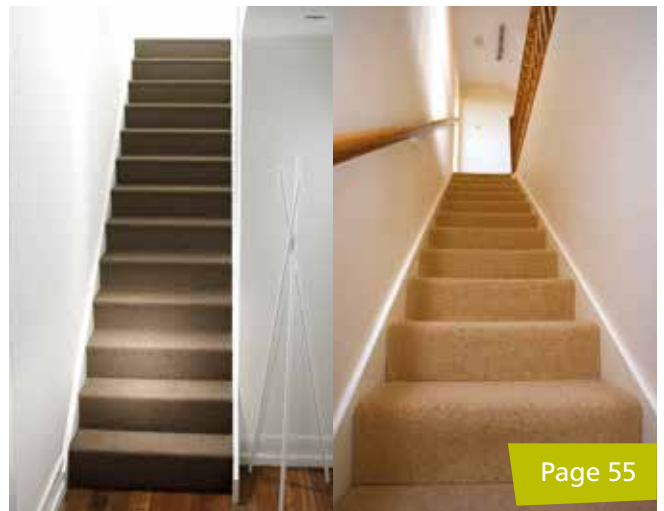
JELD-WEN's Prestige Oak range is built to last, offering unbeatable quality and a premium finish. Available in a choice of laminated oak or redwood timbers.

TRADITIONAL RANGE

Our Traditional staircase range is available in a choice of Hemlock, white primed or Redwood timber components with a variety of styles to choose from.



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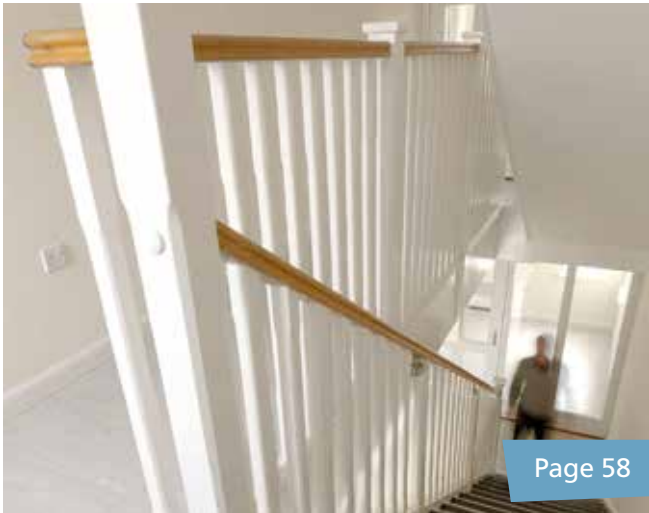
CONTEMPORARY RANGE

If you're looking to differentiate your project from the competition, our ultra-modern designs in our Contemporary range will do just that. Available in a wide variety of materials and finishes.

STRAIGHT STOCK FLIGHTS

For those projects with time and budget constraints JELD-WEN offers 13 step straight stock flights that are available on express delivery.

COMMUNAL STAIRS



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STANDARD COMMUNAL

JELD-WEN offers a complete solution for communal stairs and our range has been proven to meet even the most exacting performance standards.



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FIRE PROTECTED COMMUNAL

JELD-WEN offers fire protected communal stair components that are independently certified by the British Woodworking Federation (BWF) and the Loss Prevention Certification Board (LPCB), part of the BRE, for fire protected stairs.

BALUSTRADE SOLUTIONS

With increasing pressure on timescales for projects, JELD-WEN offer several balustrading solutions to speed up installation and provide temporary measures during the construction process.



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DEMOUNTABLE BALUSTRADE

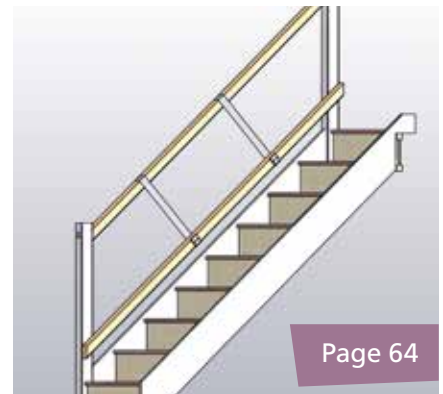
JELD-WEN can provide a demountable balustrade that can be simply removed to allow large items to be moved up and down the staircase.



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PRE-ASSEMBLED BALUSTRADE

JELD-WEN offers factory assembled balustrading, to ensure a quick and easy fix on site. All our balustrade components arrive fully assembled so there is no need for time consuming sawing and cutting.



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TEMPORARY GUARDRAIL

JELD-WEN have developed a simple temporary guardrail and edge protection solution to provide additional safety measures while properties are under construction.

BEHIND OUR PRODUCTS

JELD-WEN recognises the importance of acting responsibly, and strives to be at the forefront of innovation in order to drive the highest standards within the industry. We work closely with third party industry bodies to achieve this, and to ensure all our products are tested to meet current legislation and standards across the UK.

Quality Standards

We understand how important quality is to our customers and therefore continually develop our products and services to achieve the high standards that are expected.



We are formally assessed under quality and environmental practices, and all our factories are ISO9001: 2008 and ISO14001: 2004 certified.



JELD-WEN takes its environmental responsibilities seriously. We care about the environment and we don't like waste. That's why we aim to provide our customers with environmentally beneficial products with wood sourced from well managed forests. Where we get our wood really matters and that's why we can offer a full Forest Stewardship Council® (FSC) Chain of Custody Certification upon request.

In keeping with our quality policy, JELD-WEN offers the following guarantees on its staircases:



10 year guarantee on all products against manufacturing defects. JELD-WEN will not accept responsibility for product that has been poorly installed or modified where the structural strength of the stairs is impaired.



BWF Accredited and Certificated Staircases

JELD-WEN stairs are independently assessed and accredited by the British Woodworking Federation (BWF) to guarantee that all staircases meet Building Regulations requirements. The BWF badge displayed on each JELD-WEN staircase is your assurance of compliance. A record of all staircases with the badge will be kept for 10 years.



Certificated Fire Protected Common Stair



Accredited Domestic Stair



Accredited Common Flight

JELD-WEN offers a complete solution for residential properties and for 'Common Stairs' for flats and multi-occupancy buildings, and our range has been proven to meet even the most exacting performance standards.

High Standards

We have worked hard to drive up standards in stair production and JELD-WEN was the first volume UK manufacturer to be independently assessed by the British Woodworking Federation (BWF) for domestic and communal flights, and is the only timber stair manufacturer to be independently certified by the Loss Prevention Certification Board (LPCB), part of the BRE, for fire protected timber stairs.

Our stairs are put through a rigorous testing process to ensure they meet the relevant performance requirements for loading and fire protection.



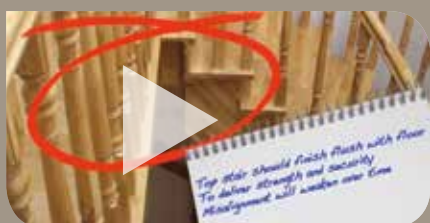
Fire Testing

In medium rise buildings, the communal flight stair may act as one of the routes of escape in the event of a fire. So it is vital that it is able to resist the effects of the fire and retain its integrity after the fire has gone out.

Manufacturers offering fire protected stairs have to demonstrate that their stairs comply with the requirements for fire protection under the test method set out by BD2569 Fire Performance of Escape Stairs – Guidance Document (Department of Communities and Local Government, 2009).

The Loss Prevention Certification Board audits the manufacturing process and quality assurance throughout manufacture to establish whether the timber stairs are serviceable and an effective means of escape, even after an extremely hazardous fire. View redbooklive.com for more information.

BWF Stair Guarantee, view the video at www.jeld-wen.co.uk/professionals/architects/



Load and Deflection Testing

At JELD-WEN we independently load test our stairs in accordance with BS 585 and BS 6399-1, to meet with the standards set out by the BWF stair scheme.

During the testing process the ability for the stairs to support imposed loads of 1.5kN/m² (domestic stairs) and 3kN/m² (communal stairs) are assessed. The weight is distributed evenly outwards from the centre treads and any deflection or visible signs of deformation are recorded.

JELD-WEN stairs are fully certified as being capable of supporting loads suitable for both domestic and communal properties. Testing has been conducted for the resistance against static loading in accordance with BS EN 13374: 2013 Class A.

Usage Type 1

Self-contained dwelling units and communal areas in blocks of flats not more than three storeys high and not more than four units per floor accessible from one stair.

Usage Type 2

Communal areas in blocks of flats other than use type 1, and institutional buildings (not subject to crowds), hostels, guest houses, residential clubs.

Usage Type 3

All other buildings including hotels and motels.

The point load is applied at the point that gives the most onerous requirement. Where individual balusters are used each should be capable of resisting half the concentrated load. Total displacement of the a handrail should not exceed B19. If not achievable, the handrail should be capable of withstanding 2.5 times the applied load during a single test, without failure.



Loading to strings, treads and risers

Test load	USAGE TYPE 1	USAGE TYPE 2	USAGE TYPE 3
UDL	1.5 kN/m ²	3.0 kN/m ²	4.0 kN/m ²
Concentrated Load	1.4 kN	4.0 kN	4.0 kN

Horizontal loads to handrails and balusters

Test load	USAGE TYPE 1	USAGE TYPE 2 & 3
Horizontal UDL to handrail	0.36 kN/m run	0.74 kN/m run
UDL applied to the infill	0.5 kN/m ²	1.0 kN/m ²
Concentrated Load	0.25 kN	0.5 kN

SPECIFYING STAIRS

There are a number of things to consider when specifying stairs:

Design

The style and finish of the products need to reflect the building design, use, and the aspirations of the client.

Stairs offer subtle design features that create a traditional or contemporary quality feel, helping new fittings blend into an old home or adding a touch of luxury to a modern building.

There's a wide choice of options to consider when specifying stairs including your choice of balustrading, spindles, newels, caps, handrails, risers and tread options. Combined with a variety of materials options – see page 12 for more detail.

Performance

You will need to consider the following performance indicators in addition to the Building Regulation requirements:

- **Safety in use** – particular consideration must be given to the risk of users to improve the safety in use of the stairs.
 - Open riser stairs should be designed so that the rear of each tread is overlapped by the tread above by at least 16mm.
 - Where there is the possibility of children below the age of 5 using the stairs care should be taken ensure any aperture formed by the components of the stair is capable of access by a child is less than 100mm i.e. a 100mm ball should not be able to pass through the gap. Any configuration of balustrade should be designed as to be incapable of being climbed.
- **Durability** – the service environment for the stairs will affect the moisture content of timber and wood based products. The table below provides indicative moisture content values that should be considered for stairs:

Location	Moisture content range	Approximate relative humidity
Internal use - heated	7-11%	50%
Internal use - unheated	10-14%	65%

- **Accessibility** – traditionally there has always been a relationship between rise and going, this is generally accepted as (2 x Rise + 1 x Going) and is in the range 550mm and 700mm. Stairs in domestic situations should have a maximum pitch of 42°. Maximum rises and minimum going are given below for a range of stair uses:

Recommendations of Approved Document K:

	Rise		Going	
	Minimum (mm)	Maximum (mm)	Minimum (mm)	Maximum (mm)
Private stair	150	220*	220*	300
Utility stair	150	190	250	400
General access stair	150	170	250	400

NOTE: Combined maximum rise and minimum going can create pitch problems. *e.g. combined = 45°

Approved Document M has other recommendations as below:

Location	Maximum rise	Minimum going
Domestic common areas	170mm	250mm
Non-domestic	150-170mm	280-425mm

- **Stability** – the imposed loads to a stair are dynamic and caused by people moving along the stair. Stairs need to be designed to reduce the potential bounce or have sufficient stiffness provided by direct connections in the adjacent structures.
- **Fire characteristics** – stairs themselves do not have to provide a fire resistance capability unless they are separating two compartments i.e. if the stairs to an upstairs flat is 'exposed' to the flat below. Fire resistance is usually provided by the fitting of (plasterboard) to the underside of the stair and tested in accordance with BS EN 1365-6.

Building Regulations

Which Building Regulations apply and what are the standards? The Building Regulations for stairs varies dependant on the type of project i.e. new build, refurbishment or loft conversion, and there are differences between England, Scotland, Northern Ireland and Wales. See page 10 for further information.

Budget

A key requirement when considering which stairs to specify is of course the budget available. Factors to consider are:

- **Materials** – the choice of material to specify will have a big impact on the price. If grandeur and luxury is the overall aim then the solid oak option has the wow factor, but if the budget is more modest then the Hemlock option may be the way forward.
- **Style** – the more grand the staircase the higher the cost so considering the style for your budget is always important.

FINISHING & MAINTAINING YOUR PRODUCTS

All JELD-WEN all stair components are supplied unfinished for site decoration.

Stairs can be finished with paint, stain, varnish or lacquer, whilst primed products and surface coated fire protected components can be decorated with a good quality paint to suit the property.

Always ensure all surfaces and edges are in good condition before applying finishing coats. If the primer, base coat stain or fire protected surface coating has deteriorated, primer coats must be reapplied before further finishing coats are applied.

JELD-WEN internal joinery is NOT suitable for certain types of waxes, polishes etc. Please refer to manufacturers instructions.

Three coat primed finish

One of the most time consuming parts of fitting a staircase is the painting, when working to a tight schedule and budget, there's no time to waste.

JELD-WEN now supply primed stairs part finished, with a three coat primed finish applied in factory controlled conditions, so all that's needed is a simple top-coat applied on site, giving the perfect finish in half the time.



Tread and riser protection

As an added benefit we can supply our standard MDF treads and risers with easy peel away film protection. This innovation provides protection for the staircase whilst under construction and can simply be scored and peeled away once work is complete.



Fire protection and maintenance

In order to maintain coatings in good condition, the following procedure should be followed:-

- Clean as required using a soft cloth and mild solution of warm soapy water. Do not saturate the surface.
- Spills and heavy stains should be removed immediately using a mild detergent solution to avoid permanent discolouration of the coatings.
- Avoid the use of aggressive and abrasive cleaning materials and cleaners containing wax and silicones.
- Avoid placing hot items directly onto the finished surface as this may result in permanent damage.
- Avoid excessive heat and direct sunlight, which may result in discolouration.
- It is possible to touch up light scratches provided the correct products are used.
- After 5 years the coatings should be inspected annually and if necessary a maintenance coat of ES/VFR/TCW (or HW05 if a solvent borne Top Seal was used.) in selected sheen level should be applied. No longer than 10 years should elapse before maintenance topcoat is applied.

BUILDING REGULATIONS

Building Regulations drive product design of JELD-WEN products to ensure they comply at all times. This information provides guidance on the relevant regulations you need to consider when specifying stairs.

Building Regulations, England and Wales;

Separate requirements under Scottish, Welsh and Northern Ireland Building Regulations may apply – see comparison tables for reference.

The principle points affecting stair specification and selection are as follows:

Approved Document B - Fire Safety

Stairs in some situations have to be fire resistant. We provide fire resisting stairs certified by the BRE Loss Prevention Certificate Board (LPCB) and we are the only volume stair manufacturer to be certified by the LPCB.

Approved Document E - Resistance to passage of sound

Stairs are subject to sound insulation requirements, we offer a rubber matting which is applied to the underside of the staircase.

Approved Document K - Protection from falling collision and impact

Approved Document K determines the height and depth of the steps, this will vary depending upon the type of building and will also impact on the pitch and overall length of a staircase.

Approved Document M - Access to and use of buildings

The steps of a staircase have to be wider and lower and must not have any trip hazards such as nosing overhang. There must also be a continuous handrail on each side.

Applications:

New build – all of the above applicable

Loft conversions – for loft conversion projects Approved Document B must be adhered to and the project must be signed off by Building Control who will check particularly for means of escape.

Refurbishment – when completing a refurbishment you must replace stairs like for like or improve the specification to get closer to the Building Regulations wherever possible.

The responsibility for correct specification remains with the Building designer (for new build) or the installer (for replacement products). If in any doubt customers should always seek the advice of their Local Authority Building Control Department. There may be other regional differences in requirements not included in the above (Northern Ireland,



Building Regulation comparison tables for England, Scotland and Wales

Means of escape from fire	
England	Approved Document B
Scotland	Scottish Handbook Section 2
Northern Ireland	Technical Booklet E
Wales	Approved Document B

Resistance to passage of sound	
England	Approved Document E
Scotland	Scottish Handbook Section 5
Northern Ireland	Technical Booklet G
Wales	Approved Document E

Protection from falling, collision and impact	
England	Approved Document K
Scotland	Scottish Handbook Section 4
Northern Ireland	Technical Booklet H
Wales	Approved Document K

Access and facilities for disabled people	
England	Approved Document M
Scotland	Scottish Building Standards Section 4.3
Northern Ireland	Technical Booklet R
Wales	Approved Document M

Please note: Channel Islands and Isle of Man are excluded from the above regulations

LEGISLATION

Dedicated to responsible business

JELD-WEN aspires to be the industry leader in environmentally responsible practices and products. We have committed ourselves to more responsible business practices and environmental stewardship. This affects every aspect of our organisation and governs our approach to energy efficiency, air and water emissions and indoor air quality.



We have a responsible, renewable timber sourcing policy and are extremely proud to have received FSC® (Forest Stewardship Council) multi-site chain of custody certifications dedicated to promoting responsible forest management.

Our stairs are available Forest Stewardship Council® (FSC) certified on request, which means we have sourced wood from Chain of Custody forests that have been independently verified against worldwide standards.

All JELD-WEN products meet the new EU Timber regulations which aims to prevent the trade in illegal harvesting of timber.

For a full copy of our environmental policy visit:
jeld-wen.co.uk/aboutus

British Standards

BS 585-1: 1989 Wood stairs. Specification for stairs with closed rises for domestic use, including straight and winder flights and quarter or half landings (current, obsolescent).

BS 585-2: 1985 Wood stairs. Specification for performance requirements for domestic stairs constructed of wood-based materials (current, obsolescent).

BS 1186-2: 1988 Timber for and workmanship in joinery. Specification for workmanship.

BS 5268-2: 2002 Structural use of timber. Code of practice for permissible stress design, materials for workmanship.

BS 5395-1: 2010 Code of practice for the design of stairs with straight flights and winders.

BS 6100 Glossary of building and civil engineering terms.

BS 6399-1: 1996 Loadings for buildings. Code of practice for dead and imposed loads. Replaced by **BS EN 1991-1-1**

BS 8300: 2009 Design of buildings and their approaches to meet the needs of disabled people – Code of practice.

European Standards

BS EN 204: 2001 Classification of thermoplastic wood adhesives for non-structural applications.

BS EN 300: 1997 Oriented Strand Boards (OSB). Definitions, classifications and specifications.

BS EN 312-4: 1997 Particleboards. Specifications. Requirements for load-bearing boards for use in dry conditions.

BS EN 312-5: 1997 Particleboards. Specifications. Requirements for load-bearing boards for use in humid conditions.

BS EN 622-2: 2004 Fibreboards. Specifications. Requirements for hardboards.

BS EN 636-1: 1997 Plywood. Specifications. Requirements for plywood for use in dry conditions.

BS EN 636-2: 1997 Plywood. Specifications. Requirements for plywood for use in humid conditions.

BS EN 636-3: 1997 Plywood. Specifications. Requirements for plywood for use in exterior conditions.

BS EN 942: 2007 Timber in joinery. General classifications of timber quality.

BS EN 1365-6: 2004 Fire resistance tests for loadbearing elements. Stairs.

BS EN 1670:2007 Building hardware. Corrosion resistance. Requirements and test methods.

BS EN 1991-1-1 General actions. Densities, selfweight imposed loads for buildings. Replaces **BS 6399-1: 1996**

BS EN 12765:2001 Classification of thermosetting wood adhesives for non-structural applications.

BS EN 13501-1:2007+A1:2009 Fire classification of construction products and building elements. Classification using test data from reaction to fire tests.

BS EN 15644: 2008 Traditionally designed prefabricated stairs made of solid wood.

BS EN 14076:2013 Timber stairs. Terminology.

MATERIAL SPECIFICATION

All our timber is sustainably sourced in compliance with the practices agreed with the British Woodworking Federation (BWF).

We offer oak and softwood timber options across our range which is either finger jointed engineered knotty, engineered, laminated engineered timber or a combination of these. Solid or laminated timber for use in stairs should meet the requirements of BS EN 942.

TIMBER TYPES

Oak

Our oak is laminated, which means that rather than using one single piece of oak, we use separate pieces bonded together, providing improved dimensional stability.

Knotty

Redwood knotty timber allows for a high quality finish. Knots are visible in this type of timber, which need treatment before finishing – please refer to page 9 for further details.

Finger jointed

Finger jointed engineered timber has all the benefits of being a natural material, except it has all natural defects removed such as knots and splits. The engineering of the component reduces the risk of twisting and warping, improving dimensional stability during operation.

Laminated engineered

Laminated timber is another form of engineered timber with no visible finger joints. The timber has knots and splits removed from the component and it is laminated with glue under high pressure, producing a stable and strong component.

Fire protected timber

Where required, JELD-WEN's communal stairs are treated with the Envirograph ES/VFR Fire Retardant Coating System, and tested to BS 476: Part 6: 1989, Class O for fire propagation and BS 476: Part 7: 1987, Class I for surface spread of flame. Please refer to page 9 for guidance on maintaining the fire protection.

TIMBER SPECIES

Stairs can be made from one timber or a combination of many depending on the style or specification required.

Below are some of the timbers most commonly used to manufacture our stair components:

Engineered American White Oak (*Quercus Alba*)

Our engineered oak construction ensures a premium finish with few knots, ideal for waxing or varnishing.



Scandinavian Redwood (*Pinus Sylvestris*)

This is the most common timber used to manufacture staircases, we use joinery grade Scandinavian Redwood. This material is a good value timber, is also easy to work with and ideal for painting. It can also be stained, varnished or waxed. Also available white primed.



Hemlock (*Tsuga Heterophylla*)

Similar in appearance to Pine and still a softwood, however Hemlock has few knots, making it more suitable if the timber is to be on show, it is ideal for staircases that are to be painted to give a better finish. Also available white primed.



Mixed hardwoods Meranti (*Shorea spp*)

Laminated/ finger jointed core material of our three part primed white handrails.



Chinese Birch (*Betula Albosinensis*)

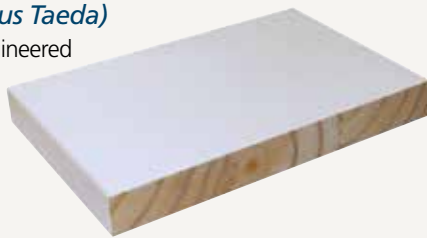
Laminated finger jointed material used for three part white primed newel posts.

Our white finished balusters are made from the same material, but solid, no laminations or finger joints.



Taeda Pine (*Pinus Taeda*)

Is a laminated/ engineered product supplied white primed for stair strings only.



Whitewood (*Picea Abies*)

Whitewood is a low grade knotty timber with resin pockets used for stock flight stair strings.

Two piece laminated Whitewood strings are offered as a cheaper alternative to Redwood.

Also available white primed.



MDF (*Mixed softwoods*)

MDF is frequently used for the treads and risers to keep costs down when the stairs are to be carpeted.



OTHER MATERIALS

Glass

Glass is often used to form balustrades, and is used in the construction of our Radiance range of stairs.

The glazing used is Pilkington™ glass that complies to the standards set out by BS EN 12150 - Safety glass for use in buildings.

Our stair components have been tested by Fira International Ltd and successfully satisfied the requirements of BS 6180: 2011: Barriers in and out of buildings.

Metals

Metal is often used for stairs to provide a contemporary look and finish such as our Liskeard Range. The material specification for this range is as follows:

- **Handrail castings** - manufactured from a zinc alloy and finished with chrome and nickel plating.
- **Spindles** - the brackets are manufactured in ABS with plated steel tube uprights.



GENERAL **ADVICE**

The way in which products are stored, handled and installed can affect their performance. Good practice avoids damage, maintains quality and saves money.

Delivery

To ensure the minimum time required for site storage, plan the delivery of the stair to be close to the time when it will be installed.

When the stair is delivered to site check the delivery against your documentation to check the following:

- ✓ Quality of components
 - a. Main stair components, flights, newels, bullnose treads, curtail treads, winder treads, risers for winder flights
 - b. Wedges and glue blocks, dowels and top nosing's
 - c. Balustrade and ancillary items
 - d. Handrails, string capping, landing base rail, apron lining, balusters, infill fillets
- ✓ Any damage
- ✓ Quality of components and appearance of materials
- ✓ Also check the 'as built' dimensions on site to ensure that no changes have occurred and to confirm that the supplied stair will fit in the stair well.

Storage

Stair components should be stored in a dry place slightly raised from the ground, adequately protected from the weather and extremes of temperature. As with all internal joinery, stairs should not be fitted in a building which has not adequately dried out. Failure to maintain the moisture content as delivered will have a seriously detrimental effect on the stairs and how they fit.

Long items should be kept flat on bearers. If components are delivered for more than one stair, store the parts for each stair

separately or mark each item so that they can be easily identified. Do not mix stair parts when installing as stairs will usually be made to suit a particular stairwell arrangement.

If storing stairs in the building take care not to overload any part of the structure by stacking too many parts together. On upper floors store components near to walls on which the floor joists bear, rather than in the centre of rooms.

Handling

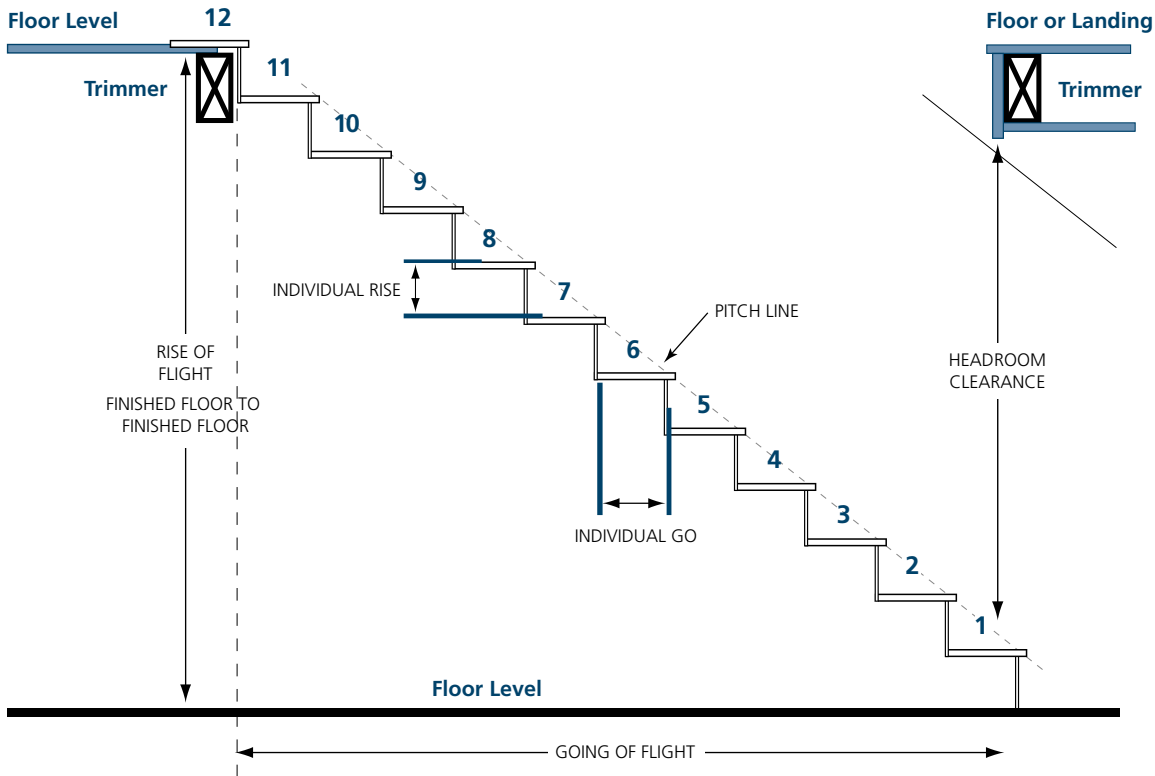
This product weighs in excess of 15kg and must be handled with care. Your own risk assessment can determine whether an assisted lift is required or even mechanical lifting arrangements will be required. Do not lift stairs by one string (top string if laid on edge).

Notice to carpet fitters / purchasers

Carpet gripper rods must not be nailed to the treads and risers. They must be screwed or glued only. We cannot accept responsibility for squeaking / damaged stairs if the gripper rods are not fixed in the correct manner.

INSTALLATION ADVICE

This diagram shows a typical cross section of a stair installation.



General installation advice

When installing a stair it is usual to start from the top and work down. There may need to be some preparation of joints and trimming to size of components, where required, before the components are fixed in position and this should be checked prior to starting the installation.

Wall strings, newels and landings will need to be fixed to the supporting structure. Consideration should be given to the type of fixings used to ensure that they provide a suitable level of support and that they are appropriate for the timber, block or other material to which the stair is being fixed.

All fixing points should be prepared with clearance holes (through the piece being secured) and pilot holes (into the structure being secured to). Never force a fixing into any material, unless the fixing is intended for that purpose, as this will cause splitting of timber and will weaken the joint.

Working at height

Care should be taken when installing staircases as the nature of the work will present a risk of falling. Full protection to the outside of any staircase will not be afforded until the complete guarding system, balusters or and handrails have been fixed in place.

As an alternative, a temporary guardrail and edge protection system can be used to provide additional safety measures while properties are under construction. This provides a temporary safety barrier both up the stairs and across landings that alleviates the risk of falling, whilst allowing access for materials to be moved easily up the stairs. See page 64 for more detail.

Clearances

The finished size of the stair should not be equal to the sizes measured on site, as this will not afford any flexibility while installing the stair and may not permit parts of the flight to be manoeuvred into position. Consideration should also be given to any finishes that are yet to be applied to the walls of the stair opening, such as, dry lining or plastering.

Wall string fixings

Structural screws with a nominal diameter of 5mm (10 gauge), which are CE marked to EN 14592, should be used to fix wall strings to timber stud walls or masonry walls. The screws used should either be of the self-drilling type, or should be installed in predrilled holes, and the length of the screws must achieve a minimum penetration of 50mm into the timber stud/nogging or into the masonry wall, and 50mm long wall plugs should be used in masonry walls.

Recommended stair string fixing centres (using 5mm diameter screws penetrating min 50mm into the wall):

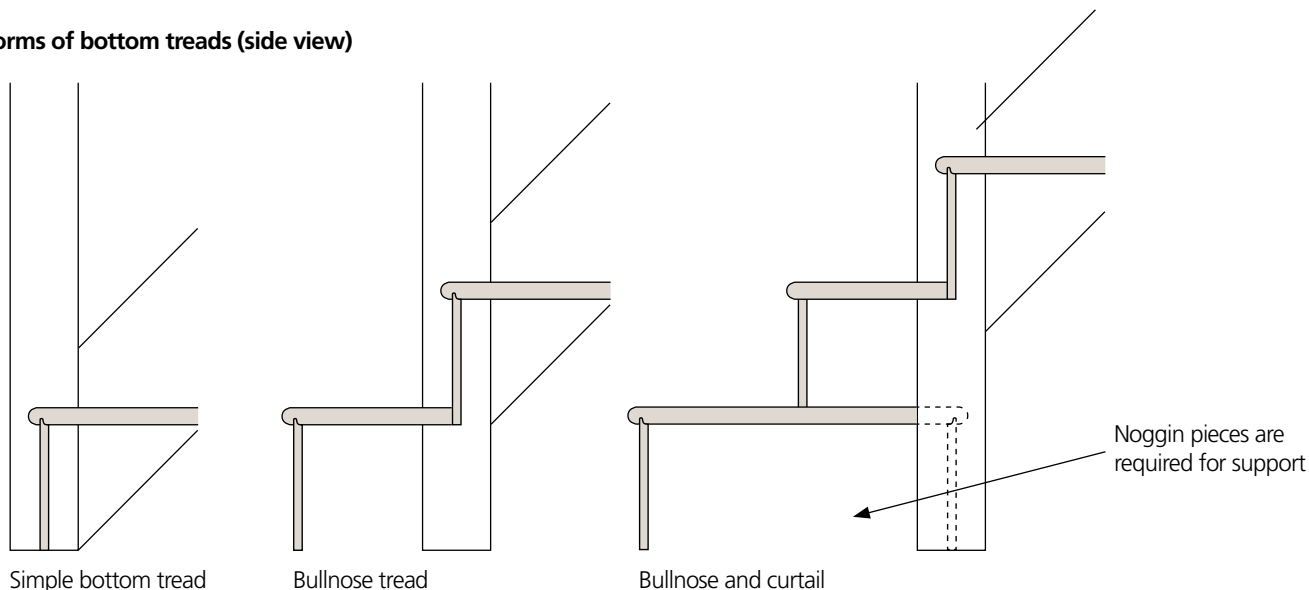
Stair usage	String-wall gaps up to 40mm	String-wall gaps exceeding 40mm
Private (domestic)	Max 600mm centres	Max 300mm centres
General access (eg flats)	Max 300mm centres	Seek specialist advice from a structural engineer

(Table 1)

Supporting bullnose and curtail treads

It is important to support bullnose and curtail treads, and noggin pieces are often required to do so.

Forms of bottom treads (side view)



Preparing the outer handrail

Handrails are used to support a person using the stairs in the event of a trip or a slip and to provide assistance to people with impaired movement. Handrails can also form the top of a balustrade or “safety barrier” protecting users of the stair from falling. It is essential that handrails are fixed securely.

Once the top and bottom newels have been fixed in position it will not be possible to “spring-in” a tenoned handrail. Do not remove the tenons as this will weaken the joint between the handrail and the newel.

Half landings

Half landings will need to support the same loads as the floors of the property into which the stair is being installed. The trimmer onto which the top of one flight and the bottom of the second flight will bear, will need to support the loads imposed when the flights are being used. Unless specified otherwise half landings should use the following minimum joist sizes up to a maximum landing size 1.2m x 2.6m.

Joist and trimmer sizes for half landings:

Type of stair	Joists at walls and at 600mm centres max (mm)	Trimmer between walls (mm)
Domestic	47mm x 147mm	2 x 47mm x 195mm
Common	47mm x 195mm	2 x 47mm x 225mm

Trimmers should be let into the walls, but not into cavities for support or supported by joist hangers. Joists can be screwed or bolted to walls.

Where trimmers are doubled, the two sections should be screwed or bolted together to avoid slippage and to share the imposed loads from the flights.

The top of the lower flight should be prepared as if the landing was an upper floor. The bottom of the upper flight should be prepared as if the landing was the lower floor with the newel finishing in-line with the bottom riser.

The flights should bear on the trimmer and not on the boarding used to form the surface of the landing. This will allow the boarding to be replaced if it becomes damaged. To maintain the rise of the bottom step is consistent with the rest of the flight, an allowance equal to the thickness of the boarding of the landing will need to be made when cutting the string or newel and bottom riser for height.

Quarter landings

Quarter landings will need to be able to support the same loads as the floors of the property into which the stair is being installed.

The newel forming the corner of the stair where the outer string turns through 90 degrees will need to be notched to receive and support the outer corner of the landing, unless the newel is designed to be face fixed.

If the newel is to be notched, it will need to act as both a “top” and “bottom” newel for the outer strings and be prepared in two directions accordingly.

The joist sizes should be as given above for half landings in *Joist and Trimmer table*. (Trimmers are not required for quarter landings).

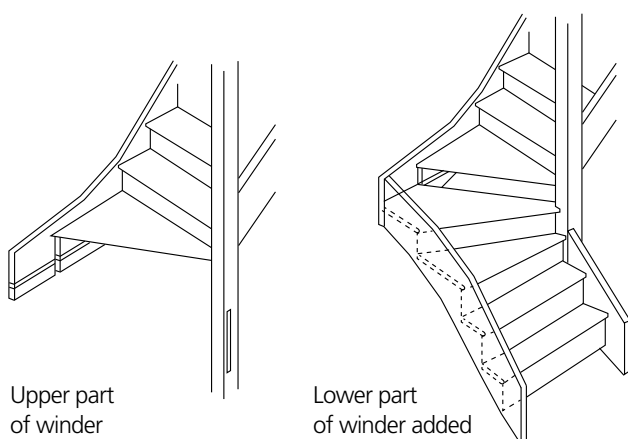
Winder flights

Winder flights are usually formed of combinations of three or four tapered treads radiating from a central newel. This newel will be housed to receive the narrow part of some of the treads and one side of the risers in between. The winder flight may form the top or bottom of the stair, or may have straight flights continuing the stair above and below.

Site limitations may mean that the flight may need to be fully assembled and either lowered or raised into position.

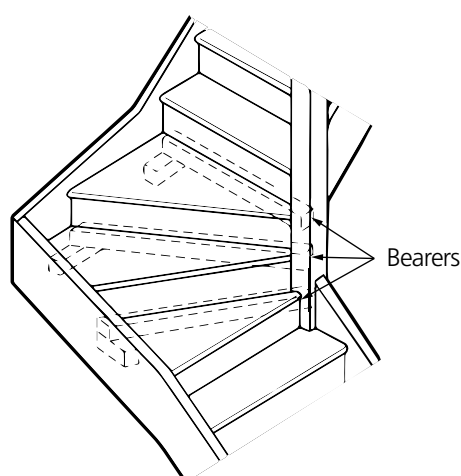
In all cases the two sections of the wall string will need to be joined together. If the stair is being installed from the top down then the upper wall string will be extended to the full width of the stair and the end of the wall string of the lower flight will be fixed to it.

Due to site limitations, it is not always possible to assemble a winder flight as described above. In this instance the flight should be fully assembled and either lowered or raised into position.



Fixing the risers to the treads

Dry fit winder treads into newel post, you may have to pare treads down in thickness to fit. Make sure the profiling of the nosing is correct to fit in the newel housing (if not done correctly this can force the newel post out of level).



For more detail on installing timber stairs, see the full BWF guide on our website.



Balustrade

Other than at the two bottom steps, a barrier is required to protect users of the stair from falling. This is often provided by a balustrade formed by individual balusters or spindles. So as to provide the necessary protection it is important that the balustrade is fixed securely.

Once the stair has been fully assembled and secured in place the balustrade can be fitted. If the balustrade has been delivered as an assembled unit then fit in accordance with the manufacturer's instructions.

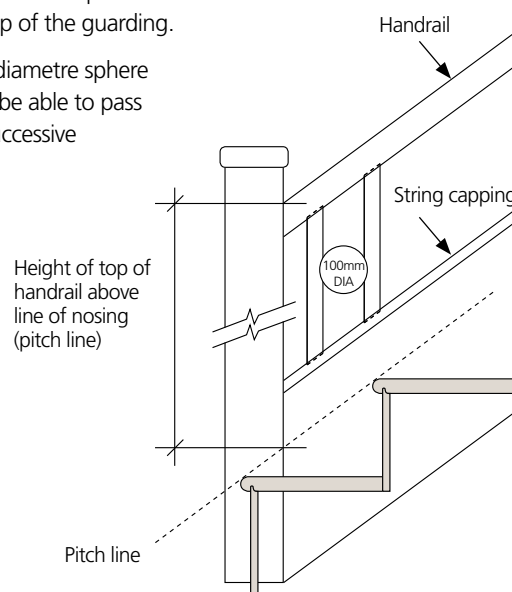
If the balustrade has been delivered as components, start to form the balustrade by cutting to length and angling the ends of the string capping, balusters or spindles and infill piece.

The string capping should be cut to fit tightly between the newels with its ends angled to suit the pitch of the flight. Once cut the string capping should be screw fixed to the string starting 50mm from each end and then at no more than 450mm centres.

The balusters or spindles should be cut to length so that they fully engage into the groove in the underside of the handrail and the upper face of the string capping. Again, the ends of the balusters should be angled to the pitch of the stair. It is important that balusters are fully housed by the handrail and string capping or they may not provide the necessary protection to users of the stair.

The handrail must be located between 900mm and 1000mm above pitch line. Guarding of private stairs must be no less than 900mm above pitch line. Handrails can form the top of the guarding.

A 100mm diameter sphere should not be able to pass between successive balusters.



Newels and balusters

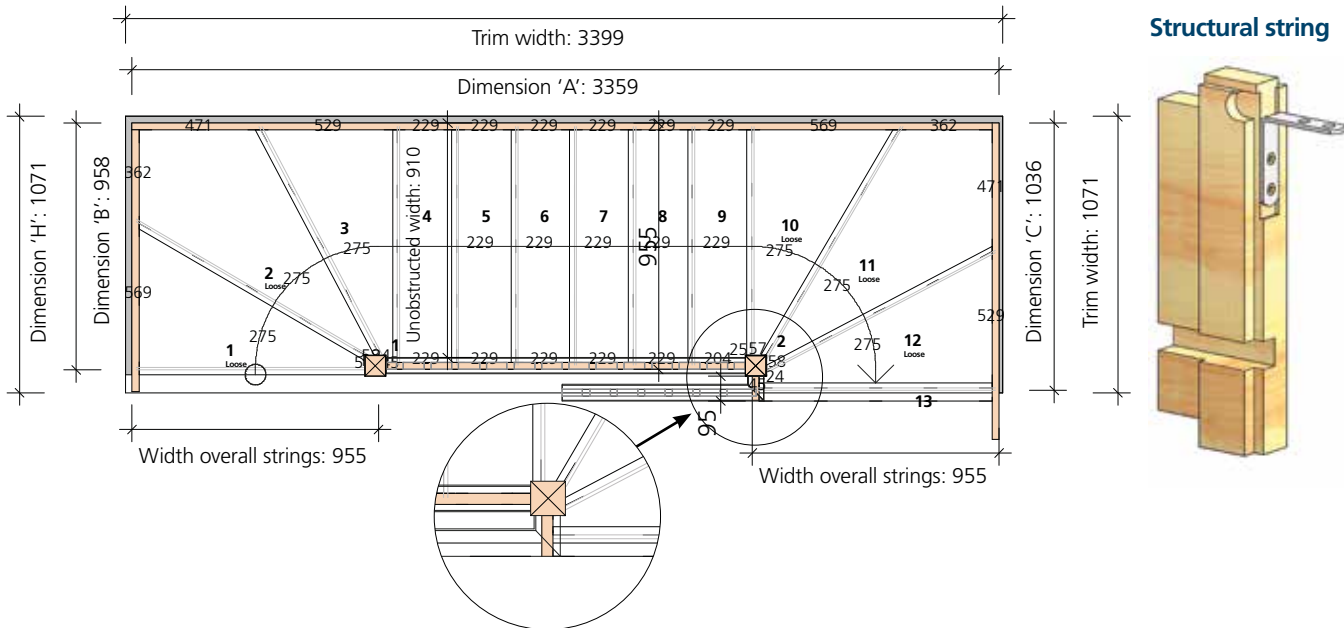
The infill pieces will fill the grooves in the handrail and string capping in between the balusters. They should be cut so that the balusters are evenly spaced and so that no part of the gap between two adjacent balusters would allow a 100mm diameter sphere to pass through; pay particular attention to turned balusters. It is not necessary for the spacing at the top and bottom newel to be the same as the rest of the balustrade, so, while the spacing between other balusters should be consistent, any adjustments can be made by altering the spacing at the newel. Each baluster should be fixed by gluing and pinning on both the upper and lower faces. The infill pieces should also be glued and pinned.

WINDER BOX DETAILS

Here we are showing the development of the winder treads around the top newel post. In order to comply with Building Regulations a minimum gap of 50mm must be achieved on the narrow side of the tapered treads. The winder box will be built to fit around this. To achieve this JELD-WEN put the structural string in place to strap over the trimmer.

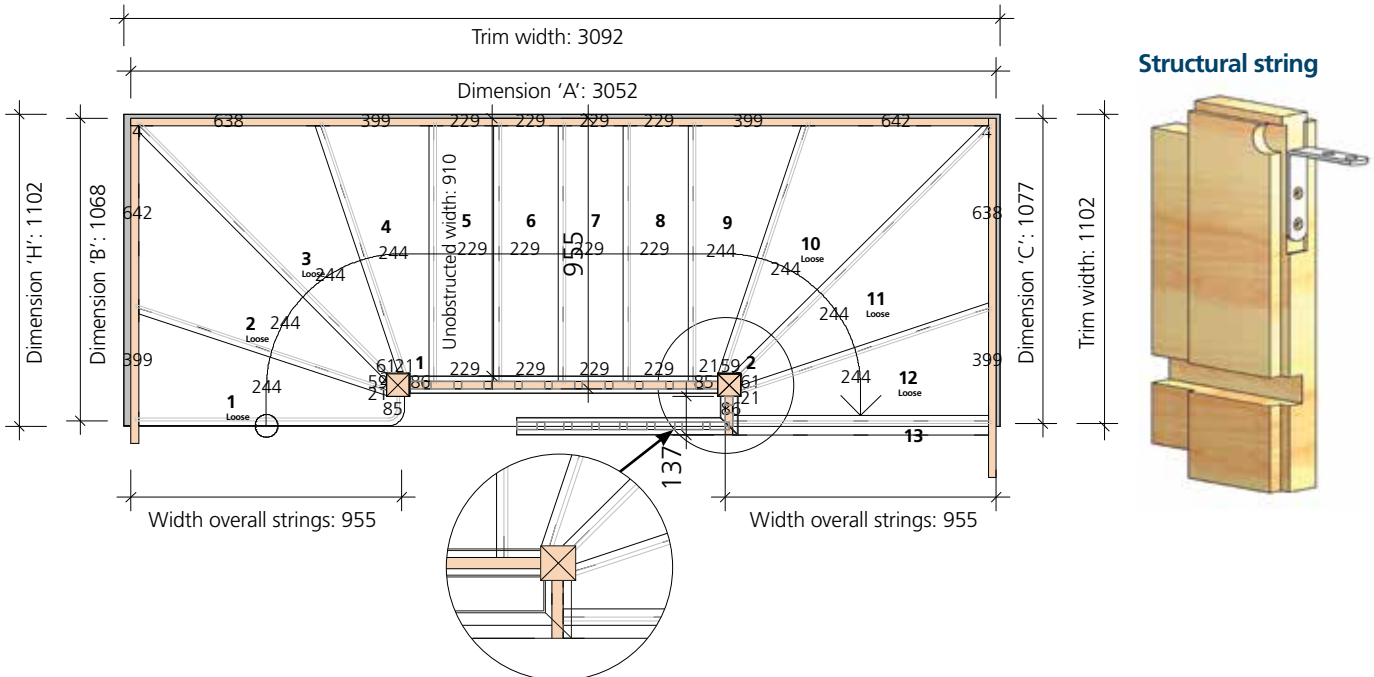
3 TYPE WINDER: W3

(parallel landing return)



4 TYPE WINDER: W4

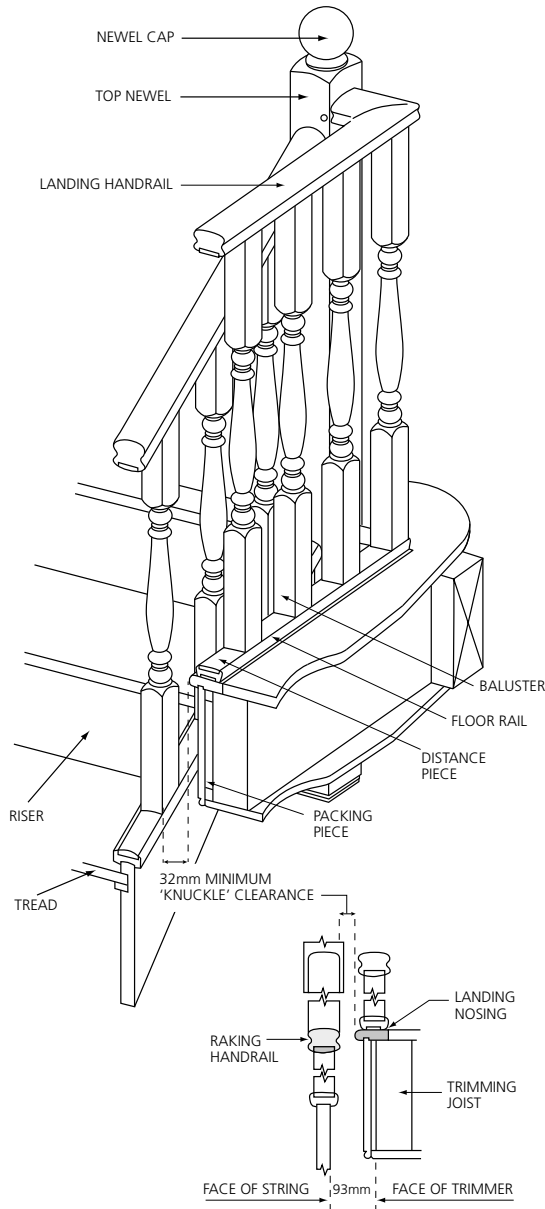
(parallel landing return)



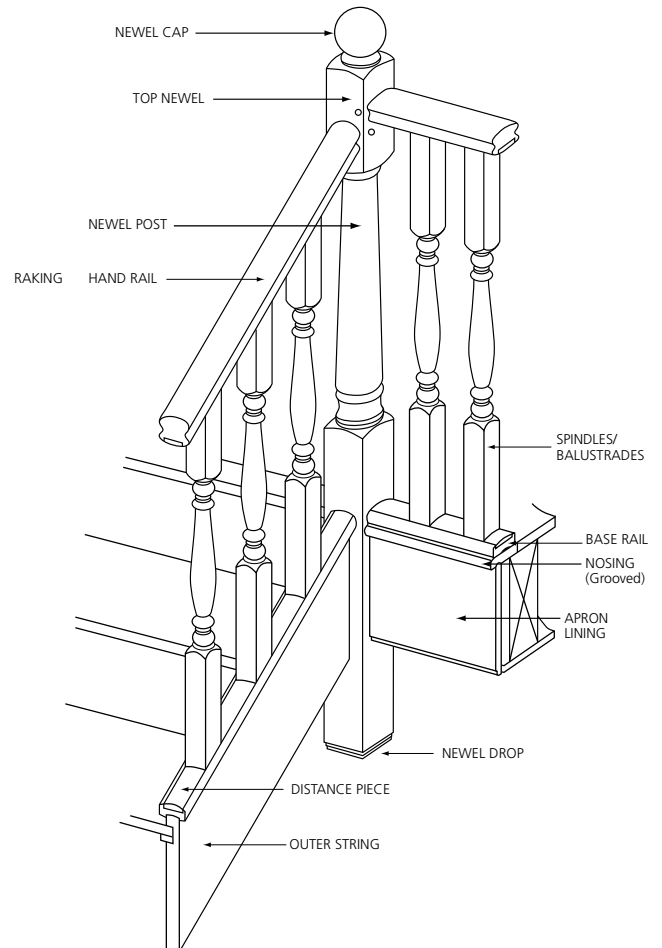
TOP NEWEL CONDITION

LANDING RETURN

Parallel landing return



Right angled landing return



Knuckle clearance

Handrails must be placed to provide a **minimum knuckle clearance** from the nearest adjacent surface, so as to facilitate a safe hand hold throughout the length of the handrail with no finger traps.

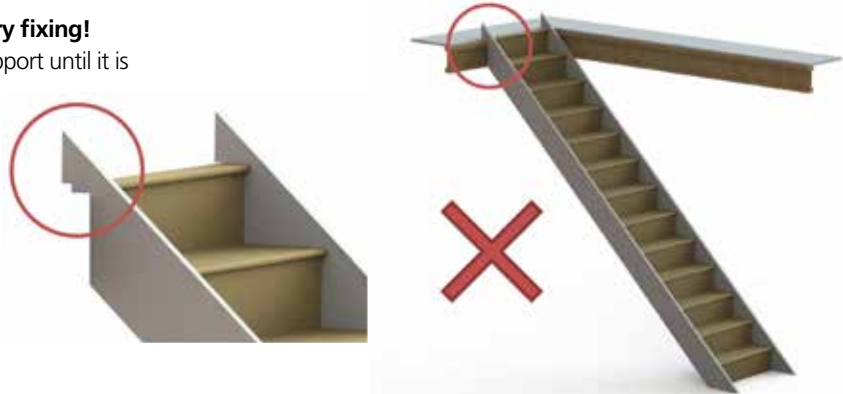
In the example shown above, a stair with a parallel landing return, the balustrade mounted handrail is positioned to achieve a 32mm knuckle clearance between the handrail and the adjacent landing nosing.

INSTALLATION OF STRAIGHT FLIGHTS BETWEEN WALLS

Temporary access does not mean temporary fixing!

A staircase will not be able to provide its full support until it is installed completely with all fixings in place.

- No load should be applied to the trunk with only the birdsmouth detail placed onto the trimmer. This is a non-structural element of the staircase and can cause failure of the strings if unsupported.



BEFORE a staircase is used for access between storeys, the trunk should be fully installed and capable of supporting its intended loads with all fixings, packers and supports in place. If one of the supporting walls are not present at time of installation, alternative support and propping to the trunk **MUST** be provided.

- Trunk is fully packed and fixed against block wall. Props in place to support opposite string in the absence of a stud wall. A timber support block is also fixed to the floor supporting the bottom of the trunk from slipping.



- String fixing should begin with screws being provided beneath the top and bottom treads. Any props supporting the trunk should also be secured to the wall. Spacing of screws along the string should be in accordance with previous table 1 (page 15).



- Wall string fully secured with fixings in accordance with table 1 (page 15).
- Note, supporting props also fixed securely to the blockwork.
- Due to the top and bottom tread being fixed first, screw spacing's may be inconsistent to achieve maximum centres.



- Once the timber stud wall is constructed, the temporary props can be removed and final fixings of the trunk to the stud wall can be completed using the same guidance as the blockwork.



- The staircase installation is complete and can now be used for primary access between floors.



STAIR LAYOUTS

ENGLAND & WALES

JELD-WEN manufactures all staircases to order in almost any design, size or specification. However, to help plan your flight, our 21 most popular layouts for England and Wales are listed on the following pages together with the critical dimensions relevant to each design including the trimming dimension necessary to obtain headroom clearance.

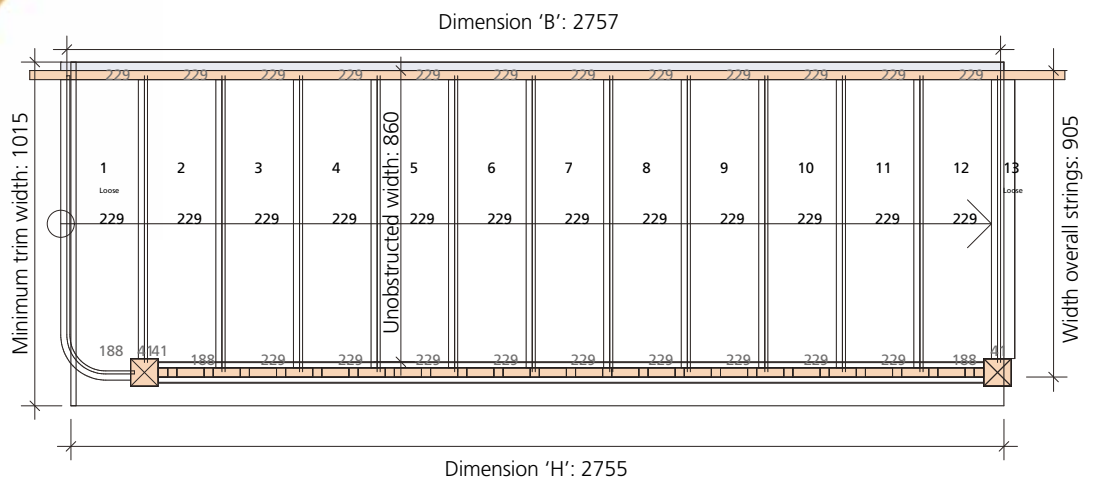
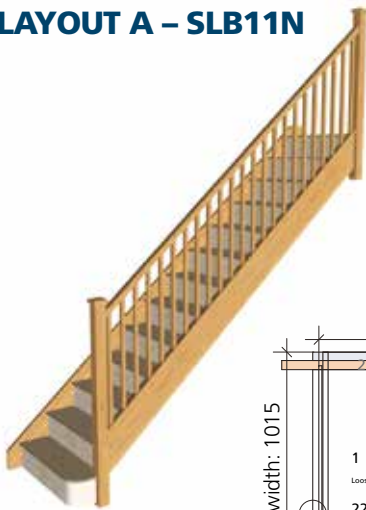
Our specialist stairs team is always on hand to offer help and advice on any aspect of design, construction or Approved Document K of the Building Regulations. You can contact them on **0845 122 2894**.

Guide Price

To view a quick guide price for some of our most popular stair layouts visit the website www.jeld-wen.co.uk/stairs



LAYOUT A – SLB11N



Dimensions

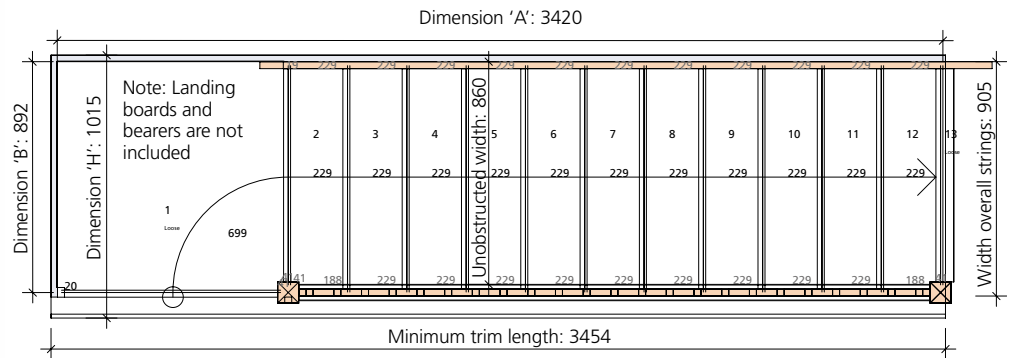
B: Face of bottom riser to back of top riser

H: Minimum distance to give statutory headroom

(Headroom based on storey heights between 2588mm up to 2680mm with 339mm floor zone)

Unobstructed width dimension does not allow for a wall handrail; should this be a requirement the projection of the handrail would need to be deducted.

LAYOUT B – SLQL11N



Dimensions

A: Wall string to back of top riser

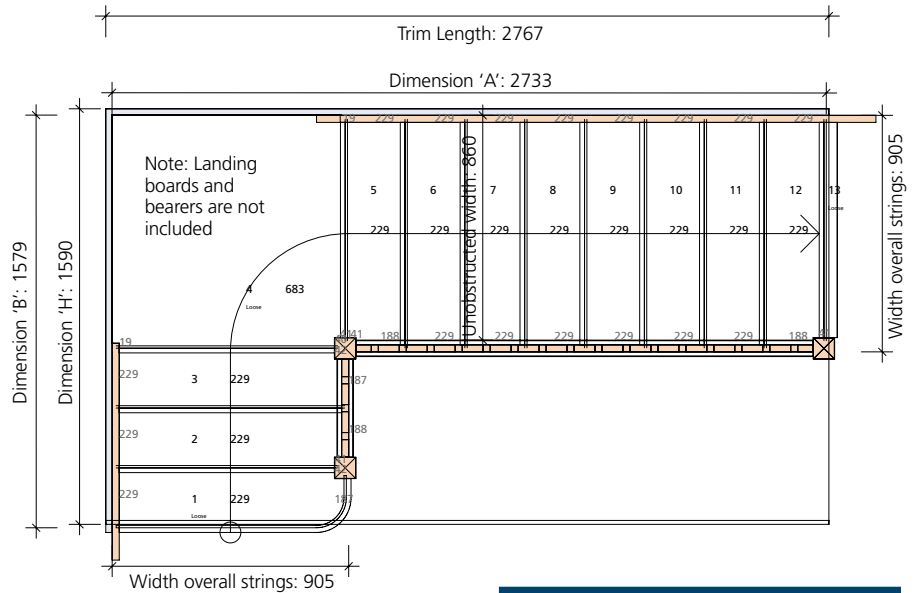
B: Face of bottom riser to back of wall string

H: Minimum distance to give statutory headroom (Headroom based on storey heights between 2588mm up to 2680mm with 339mm floor zone)

Unobstructed width dimension does not allow for a wall handrail; should this be a requirement the projection of the handrail would need to be deducted.

Alternative configurations: type QL			
Code	"A"	"B"	"H"
SLQL11N	3420	892	1015
SLBQL10N	3191	1121	1145
SLB1QL9N	2962	1350	1375
SLB2QL8N	2733	1579	1590
SLB3QL7N	2503	1808	1820
SLB4QL6N	2274	2037	2062
SLB5QL5N	2045	2265	2290
SLB6QL4N	1817	2494	2520
SLB7QL3N	1587	2724	2740
SLB8QL2N	1358	2952	2977
SLB9QL1N	1130	3182	3207

LAYOUT C – SLB2QL8N



Dimensions

A: Wall string to back of top riser

B: Face of bottom riser to back of wall string

H: Minimum distance to give statutory headroom (Headroom based on storey heights between 2588mm up to 2680mm with 339mm floor zone)

Unobstructed width dimension does not allow for a wall handrail; should this be a requirement the projection of the handrail would need to be deducted.

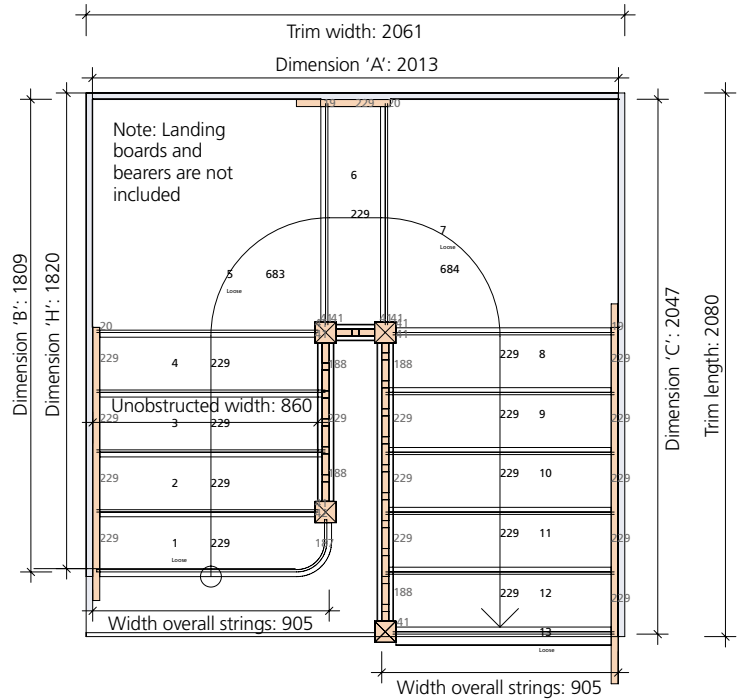
Alternative configurations: type QL			
Code	"A"	"B"	"H"
SLQL11N	3420	892	1015
SLBQL10N	3191	1121	1145
SLB1QL9N	2962	1350	1375
SLB2QL8N	2733	1579	1590
SLB3QL7N	2503	1808	1820
SLB4QL6N	2274	2037	2062
SLB5QL5N	2045	2265	2290
SLB6QL4N	1817	2494	2520
SLB7QL3N	1587	2724	2740
SLB8QL2N	1358	2952	2977
SLB9QL1N	1130	3182	3207

LAYOUT D – SLB3QL1QL5N



Dimensions

- A: Wall string to wall string
 - B: Face of bottom riser to back of wall string
 - C: Back of top riser to wall string
 - H: Minimum distance to give statutory headroom (Headroom based on storey heights between 2588mm up to 2680mm with 339mm floor zone)
- Unobstructed width dimension does not allow for a wall handrail; should this be a requirement the projection of the handrail would need to be deducted.



Alternative configurations: type QL/QL				
Code	"A"	"B"	"C"	"H"
SLQL9QL1N	3844	892	1130	916
SLBQL8QL1N	3615	1121	1130	1145
SLB1QL7QL1N	3386	1350	1130	1375
SLB2QL6QL1N	3157	1579	1130	1590
SLB3QL5QL1N	2920	1808	1130	1820
SLB4QL4QL1N	2699	2037	1130	2062
SLB5QL3QL1N	2470	2266	1130	2290
SLB6QL2QL1N	2241	2494	1130	2520

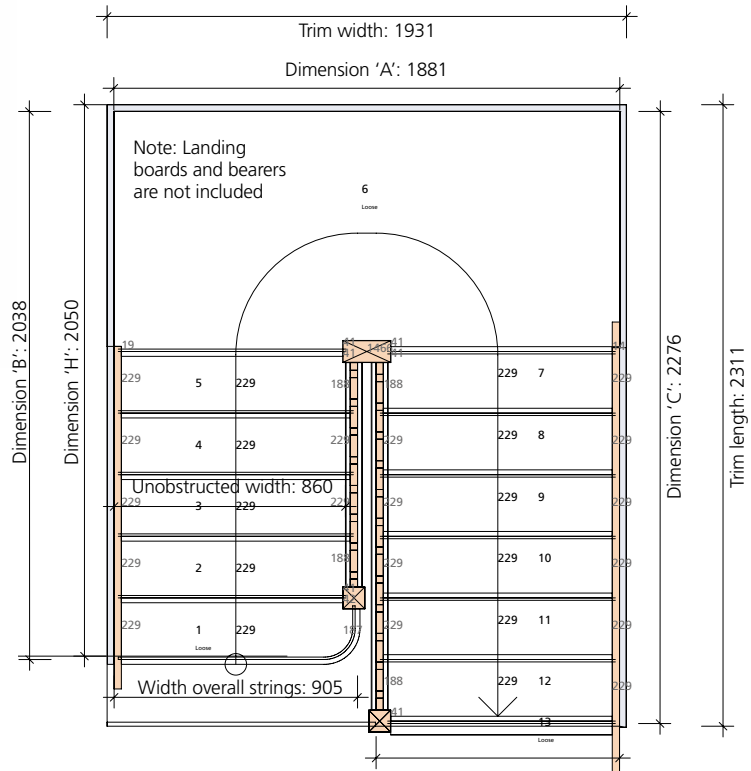
Alternative configurations: type QL/QL				
Code	"A"	"B"	"C"	"H"
SLB1QL6QL2N	3157	1350	1359	1375
SLB2QL4QL3N	2699	1579	1587	1590
SLB3QL2QL4N	2240	1808	1817	1820
SLB4QL1QL4N	2013	2036	1817	2060

LAYOUT E – SLB4HLD6N



Dimensions

- A: Wall string to wall string
 - B: Face of bottom riser to back of wall string
 - C: Back of top riser to wall string
 - H: Minimum distance to give statutory headroom (Headroom based on storey heights between 2588mm up to 2680mm with 339mm floor zone)
- Unobstructed width dimension does not allow for a wall handrail; should this be a requirement the projection of the handrail would need to be deducted.



Alternative configurations: type HLD				
Code	"A"	"B"	"C"	"H"
SLBHLD10N	1880	1121	3191	1145
SLB1HLD9N	1880	1350	2962	1375
SLB2HLD8N	1880	1579	2733	1590
SLB3HLD7N	1880	1808	2504	1833
SLB4HLD6N	1880	2037	2276	2050
SLB5HLD5N	1880	2266	2046	2290
SLB6HLD4N	1880	2495	1817	2520
SLB7HLD3N	1880	2724	1588	2749
SLB8HLD2N	1880	2953	1359	2978
SLB9HLD1N	1880	3182	1130	3207

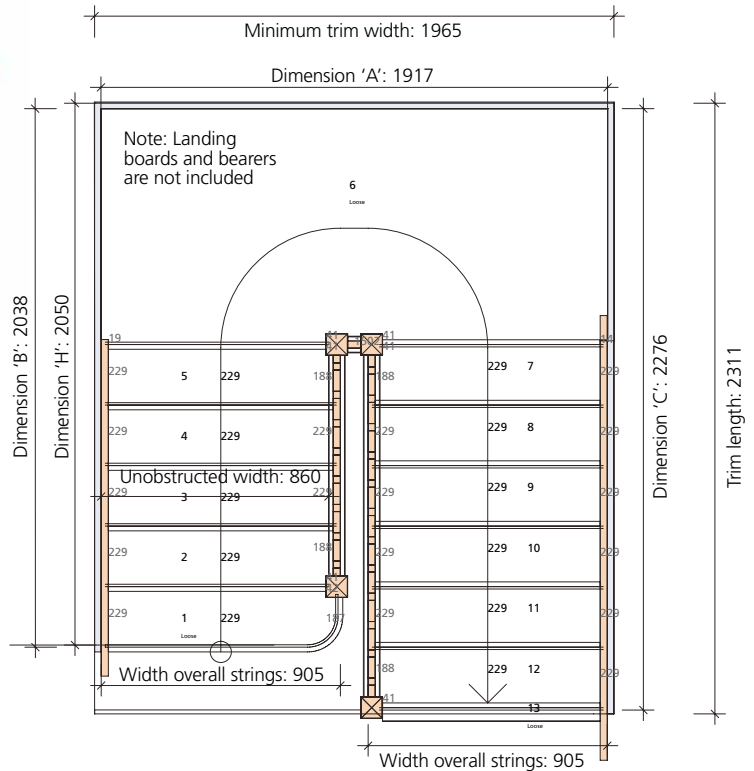
LAYOUT F – SLB4HL(TN)6N



Dimensions

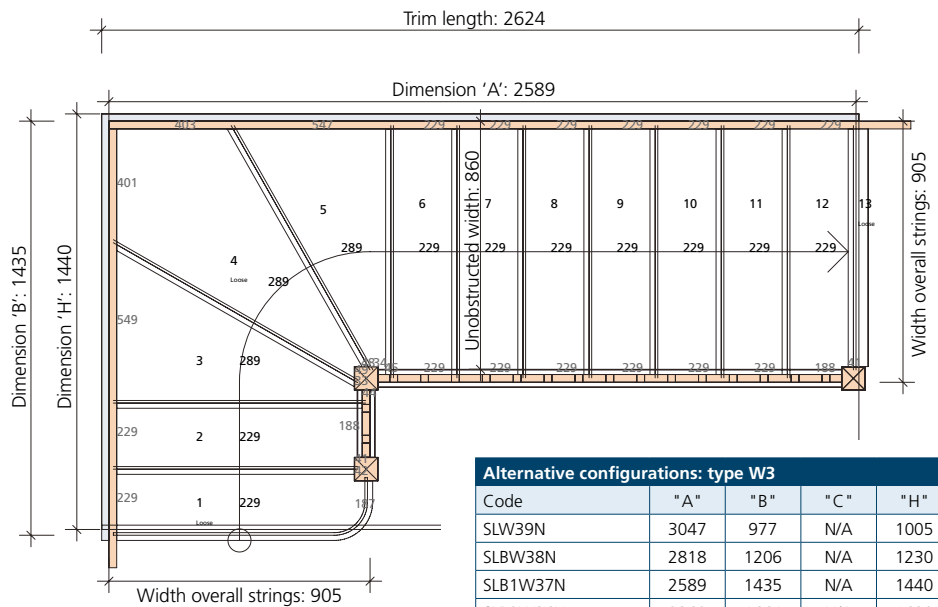
- A: Wall string to wall string
- B: Face of bottom riser to back of wall string
- C: Back of top riser to wall string
- H: Minimum distance to give statutory headroom (Headroom based on storey heights between 2588mm up to 2680mm with 339mm floor zone)

Unobstructed width dimension does not allow for a wall handrail; should this be a requirement the projection of the handrail would need to be deducted.



Alternative configurations: type HL(TN)				
Code	"A"	"B"	"C"	"H"
SLBHL(TN)10N	1916	1121	3191	1145
SLB1HL(TN)9N	1916	1350	2962	1375
SLB2HL(TN)8N	1916	1579	2733	1590
SLB3HL(TN)7N	1916	1808	2504	1833
SLB4HL(TN)6N	1916	2037	2276	2050
SLB5HL(TN)5N	1916	2266	2046	2290
SLB6HL(TN)4N	1916	2495	1817	2520
SLB7HL(TN)3N	1916	2724	1588	2749
SLB8HL(TN)2N	1916	2953	1359	2978
SLB9HL(TN)1N	1916	3182	1130	3207

LAYOUT G – SLB1W37N



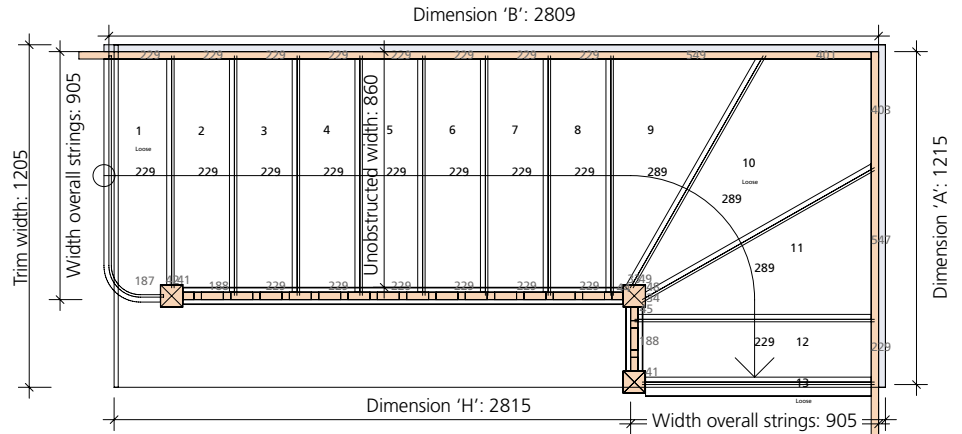
Dimensions

- A: Wall string to back of top riser
- B: Face of bottom riser to back of wall string
- H: Minimum distance to give statutory headroom (Headroom based on storey heights between 2588mm up to 2680mm with 339mm floor zone)

Unobstructed width dimension does not allow for a wall handrail; should this be a requirement the projection of the handrail would need to be deducted.

Alternative configurations: type W3				
Code	"A"	"B"	"C"	"H"
SLW39N	3047	977	N/A	1005
SLBW38N	2818	1206	N/A	1230
SLB1W37N	2589	1435	N/A	1440
SLB2W36N	2360	1664	N/A	1690
SLB3W35N	2131	1893	N/A	1919
SLB4W34N	1902	2122	N/A	2148
SLB5W33N	1673	2351	N/A	2375
SLB6W32N	1444	2580	N/A	2606
SLB7W31N	1215	2809	N/A	2815
SLB8W3N	986	3038	N/A	3064
SLW36W3N	3328	977	986	1005
SL1W34W31N	2870	1206	1215	1250
SLBW31W34N	2183	1206	1902	1250

LAYOUT H – SLB7W31N



Dimensions

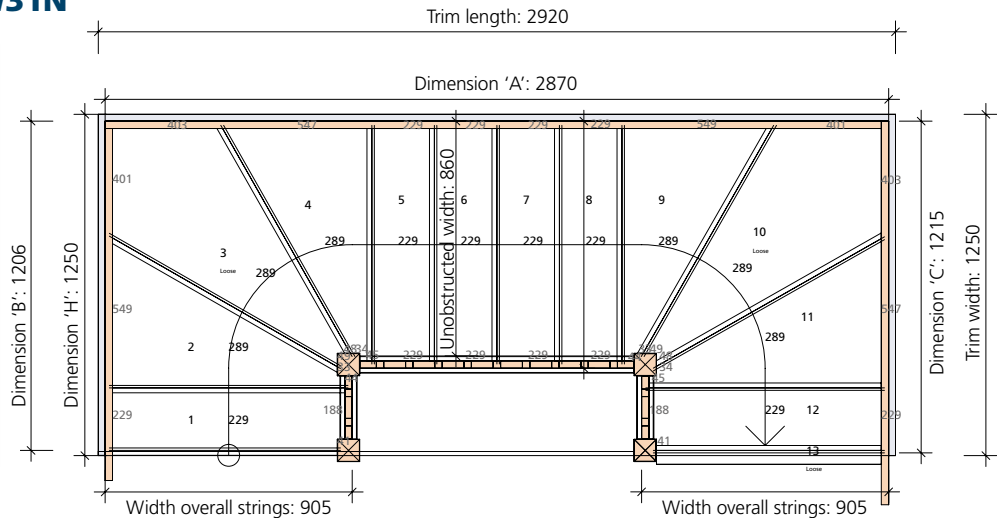
- A: Wall string to back of top riser
- B: Face of bottom riser to back of wall string
- H: Minimum distance to give statutory headroom
(Headroom based on storey heights between 2588mm up to 2680mm with 339mm floor zone)

Unobstructed width dimension does not allow for a wall handrail; should this be a requirement the projection of the handrail would need to be deducted.

Alternative configurations: type W3

Code	"A"	"B"	"C"	"H"
SLW39N	3047	977	N/A	1005
SLBW38N	2818	1206	N/A	1230
SLB1W37N	2589	1435	N/A	1440
SLB2W36N	2360	1664	N/A	1690
SLB3W35N	2131	1893	N/A	1919
SLB4W34N	1902	2122	N/A	2148
SLB5W33N	1673	2351	N/A	2375
SLB6W32N	1444	2580	N/A	2606
SLB7W31N	1215	2809	N/A	2815
SLB8W3N	986	3038	N/A	3064
SLW36W3N	3328	977	986	1005
SL1W34W31N	2870	1206	1215	1250
SLBW31W34N	2183	1206	1902	1250

LAYOUT I – SL1W34W31N



Dimensions

- A: Wall string to wall string
- B: Face of bottom riser to back of wall string
- C: Back of top riser to wall string
- H: Minimum distance to give statutory headroom
(Headroom based on storey heights between 2588mm up to 2680mm with 339mm floor zone)

Unobstructed width dimension does not allow for a wall handrail; should this be a requirement the projection of the handrail would need to be deducted.

Alternative configurations: type W3W3

Code	"A"	"B"	"C"	"H"
SLW3W36N	1954	977	2360	1005
SLBW3W35N	1954	1206	2131	1232
SLB1W3W34N	1954	1435	1902	1461
SLB2W3W33N	1954	1664	1673	1708
SLB3W3W32N	1954	1893	1444	1919
SLB4W3W31N	1954	2122	1215	2148
SLB5W3W3N	1954	2351	986	2377

LAYOUT J – SLB2W3W33N

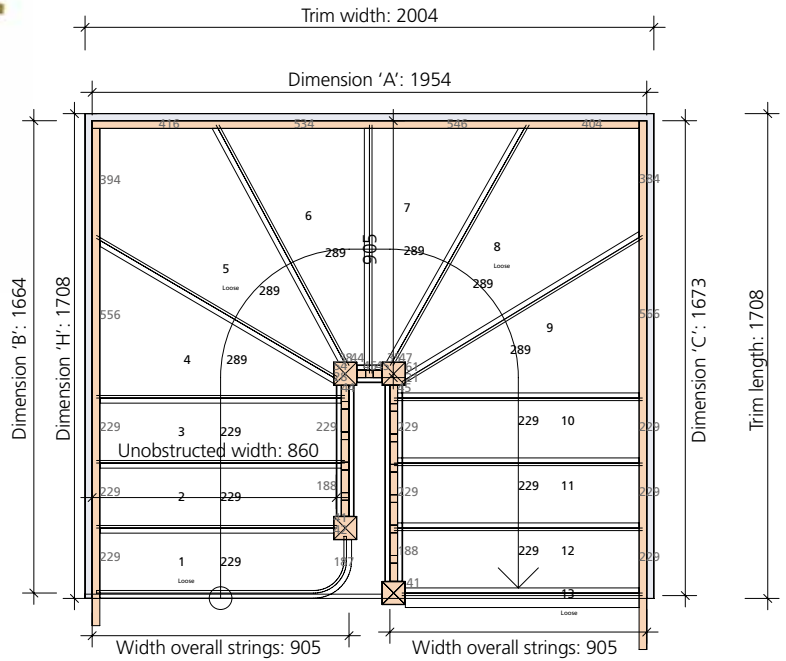


Dimensions

- A: Wall string to wall string
- B: Face of bottom riser to back of wall string
- C: Back of top riser to wall string
- H: Minimum distance to give statutory headroom (Headroom based on storey heights between 2588mm up to 2680mm with 339mm floor zone)

Unobstructed width dimension does not allow for a wall handrail; should this be a requirement the projection of the handrail would need to be deducted.

Alternative configurations: type W3W3				
Code	"A"	"B"	"C"	"H"
SLW3W36N	1954	977	2360	1005
SLBW3W35N	1954	1206	2131	1232
SLB1W3W34N	1954	1435	1902	1461
SLB2W3W33N	1954	1664	1673	1708
SLB3W3W32N	1954	1893	1444	1919
SLB4W3W31N	1954	2122	1215	2148
SLB5W3W3N	1954	2351	986	2377



LAYOUT K – SLB2W3W3(DN)3N

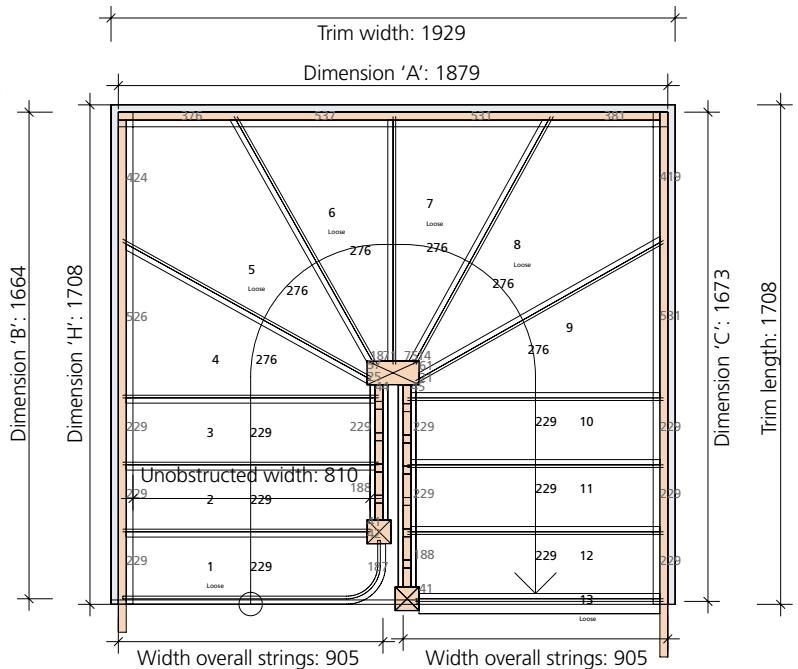


Dimensions

- A: Wall string to wall string
- B: Face of bottom riser to back of wall string
- C: Back of top riser to wall string
- H: Minimum distance to give statutory headroom (Headroom based on storey heights between 2588mm up to 2680mm with 339mm floor zone)

Unobstructed width dimension does not allow for a wall handrail; should this be a requirement the projection of the handrail would need to be deducted.

Alternative configurations: type W3W3(DN)				
Code	"A"	"B"	"C"	"H"
SLW3W3(DN)6N	1879	977	2360	1005
SLBW3W3(DN)5N	1879	1206	2131	1232
SLB1W3W3(DN)4N	1879	1435	1902	1461
SLB2W3W3(DN)3N	1879	1664	1673	1708
SLB3W3W3(DN)2N	1879	1893	1444	1919
SLB4W3W3(DN)1N	1879	2122	1215	2148
SLB5W3W3(DN)N	1879	2351	986	2377



LAYOUT L – SLB2W63N

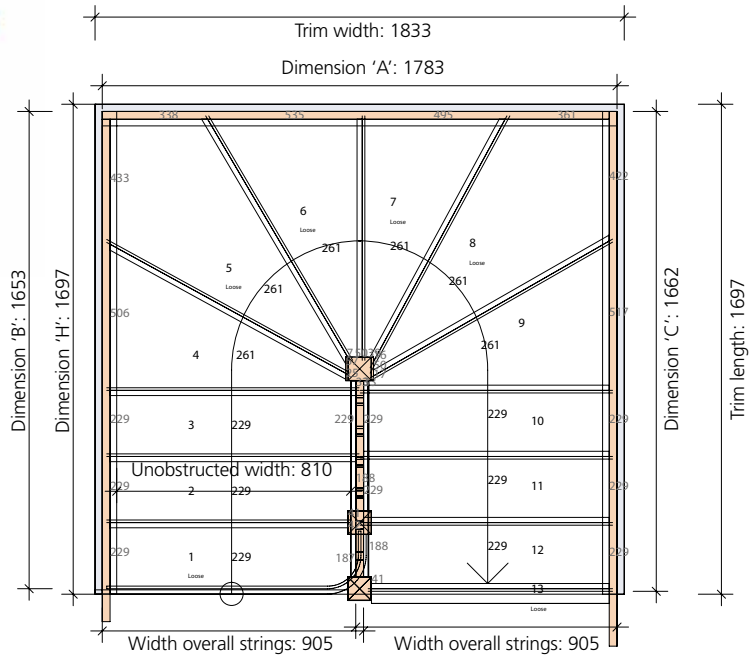


Dimensions

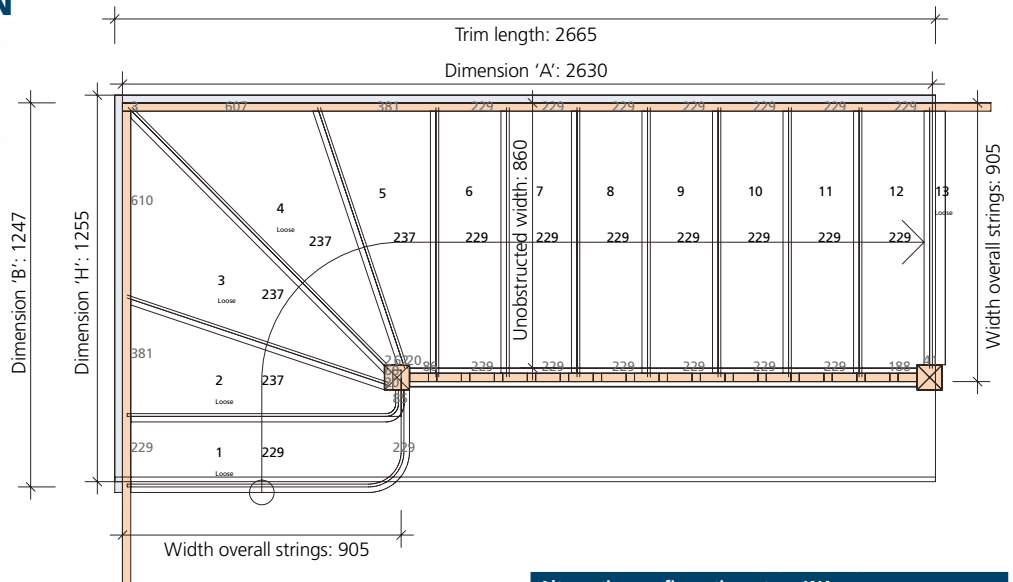
- A: Wall string to wall string
- B: Face of bottom riser to back of wall string
- C: Back of top riser to wall string
- H: Minimum distance to give statutory headroom (Headroom based on storey heights between 2588mm up to 2680mm with 339mm floor zone)

Unobstructed width dimension based on a 'pigs ear' wall handrail with a 50mm projection being incorporated; should a different type be used the difference in projection would need to be taken into account.

Alternative configurations: type W6				
Code	"A"	"B"	"C"	"H"
SLW66N	1783	966	2349	995
SLBW65N	1783	1195	2120	1220
SLB1W64N	1783	1424	1891	1448
SLB2W63N	1783	1653	1662	1697
SLB3W62N	1783	1882	1433	1908
SLB4W61N	1783	2111	1204	2137
SLB5W6N	1783	2340	975	2364



LAYOUT M – SLBW47N



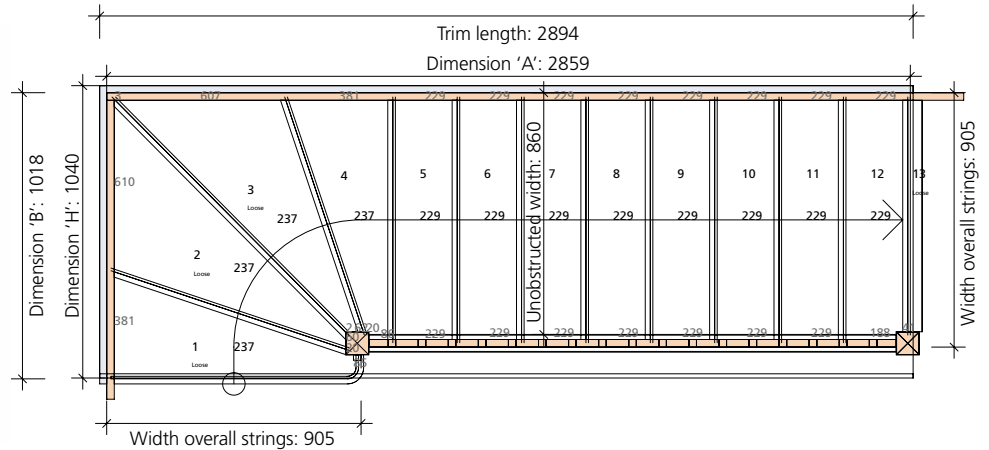
Dimensions

- A: Wall string to back of top riser
- B: Face of bottom riser to wall string
- H: Minimum distance to give statutory headroom (Headroom based on storey heights between 2588mm up to 2680mm with 339mm floor zone)

Unobstructed width dimension does not allow for a wall handrail; should this be a requirement the projection of the handrail would need to be deducted.

Alternative configurations: type W4				
Code	"A"	"B"	"C"	"H"
SLW44W4N	2952	1018	1027	1040
SLW48N	2859	1018	N/A	1040
SLBW47N	2630	1247	N/A	1255
SLB1W46N	2401	1476	N/A	1502
SLB2W45N	2172	1705	N/A	1731
SLB3W44N	1943	1934	N/A	1945
SLB4W43N	1714	2163	N/A	2188
SLB5W42N	1485	2392	N/A	2418
SLB6W41N	1256	2621	N/A	2646
SLB7W4N	1027	2850	N/A	2875

LAYOUT N – SLW48N



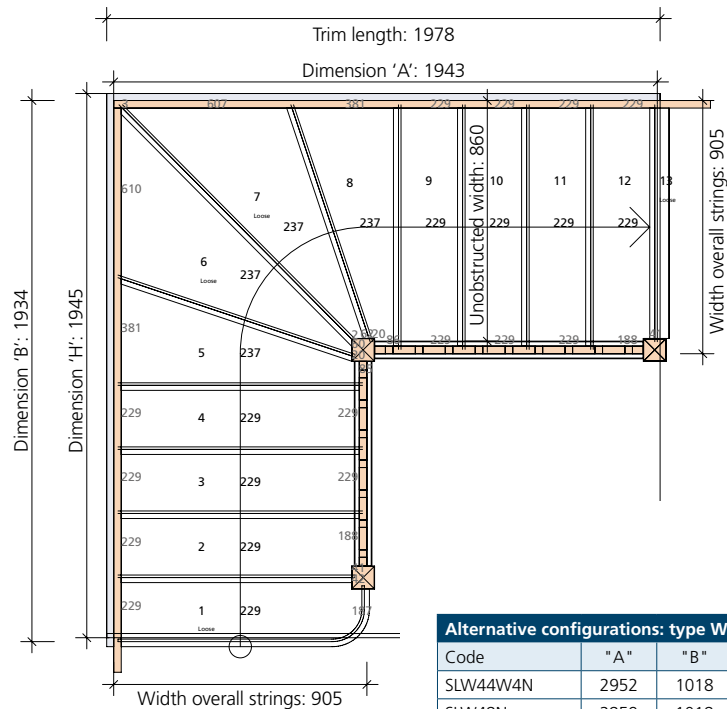
Dimensions

- A: Wall string to back of top riser
- B: Face of bottom riser to back of wall string
- H: Minimum distance to give statutory headroom (Headroom based on storey heights between 2588mm up to 2680mm with 339mm floor zone)

Unobstructed width dimension does not allow for a wall handrail; should this be a requirement the projection of the handrail would need to be deducted.

Alternative configurations: type W4				
Code	"A"	"B"	"C"	"H"
SLW44W4N	2952	1018	1027	1040
SLW48N	2859	1018	N/A	1040
SLBW47N	2630	1247	N/A	1255
SLB1W46N	2401	1476	N/A	1502
SLB2W45N	2172	1705	N/A	1731
SLB3W44N	1943	1934	N/A	1945
SLB4W43N	1714	2163	N/A	2188
SLB5W42N	1485	2392	N/A	2418
SLB6W41N	1256	2621	N/A	2646
SLB7W4N	1027	2850	N/A	2875

LAYOUT O – SLB3W44N



Dimensions

- A: Wall string to back of top riser
- B: Face of bottom riser to back of wall string
- H: Minimum distance to give statutory headroom (Headroom based on storey heights between 2588mm up to 2680mm with 339mm floor zone)

Unobstructed width dimension does not allow for a wall handrail; should this be a requirement the projection of the handrail would need to be deducted.

Alternative configurations: type W4				
Code	"A"	"B"	"C"	"H"
SLW44W4N	2952	1018	1027	1040
SLW48N	2859	1018	N/A	1040
SLBW47N	2630	1247	N/A	1255
SLB1W46N	2401	1476	N/A	1502
SLB2W45N	2172	1705	N/A	1731
SLB3W44N	1943	1934	N/A	1945
SLB4W43N	1714	2163	N/A	2188
SLB5W42N	1485	2392	N/A	2418
SLB6W41N	1256	2621	N/A	2646
SLB7W4N	1027	2850	N/A	2875

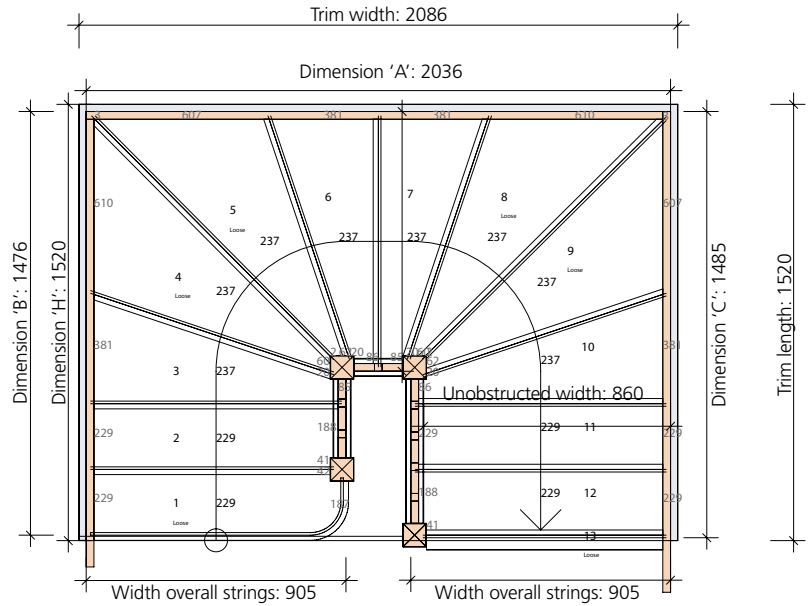
LAYOUT P – SLB1W4W42N



Dimensions

- A: Wall string to wall string
- B: Face of bottom riser to back of wall string
- C: Back of top riser to wall string
- H: Minimum distance to give statutory headroom (Headroom based on storey heights between 2588mm up to 2680mm with 339mm floor zone)

Unobstructed width dimension does not allow for a wall handrail; should this be a requirement the projection of the handrail would need to be deducted.



Alternative configurations: type W4W4

Code	"A"	"B"	"C"	"H"
SLW4W44N	2036	1018	1943	1046
SLBW4W43N	2036	1247	1714	1270
SLB1W4W42N	2036	1476	1485	1520
SLB2W4W41N	2036	1705	1256	1729
SLB3W4W4N	2036	1934	1027	1958

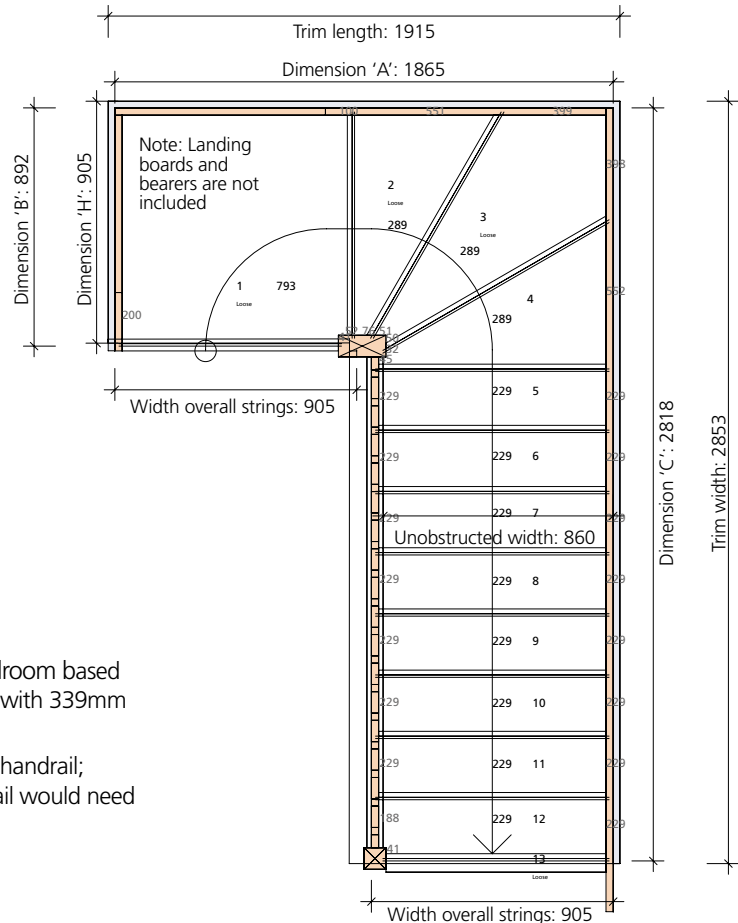
LAYOUT Q – SLQLW38N



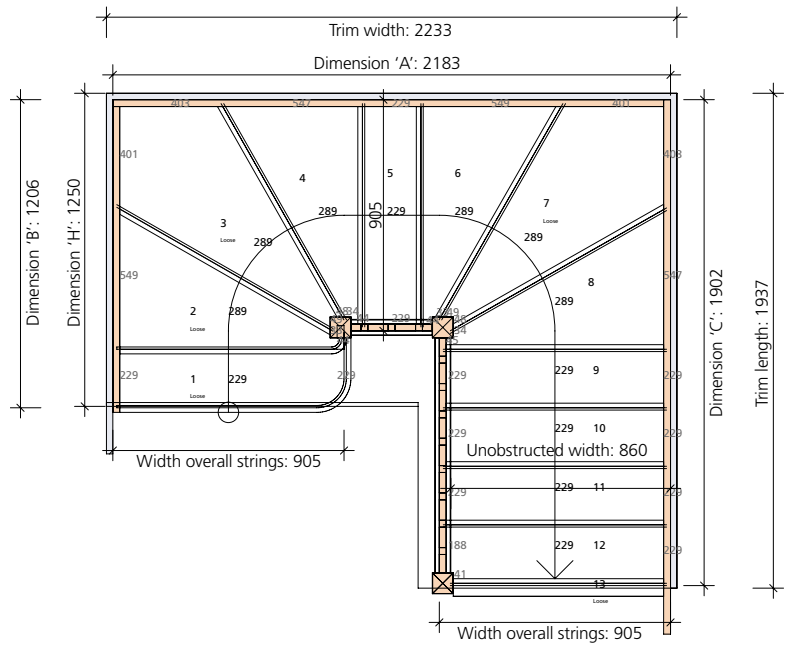
Dimensions

- A: Wall string to wall string
- B: Face of bottom riser to back of wall string
- C: Back of top riser to wall string
- H: Minimum distance to give statutory headroom (Headroom based on storey heights between 2588mm up to 2680mm with 339mm floor zone)

Unobstructed width dimension does not allow for a wall handrail; should this be a requirement the projection of the handrail would need to be deducted.



LAYOUT R – SLBW31W34N



Dimensions

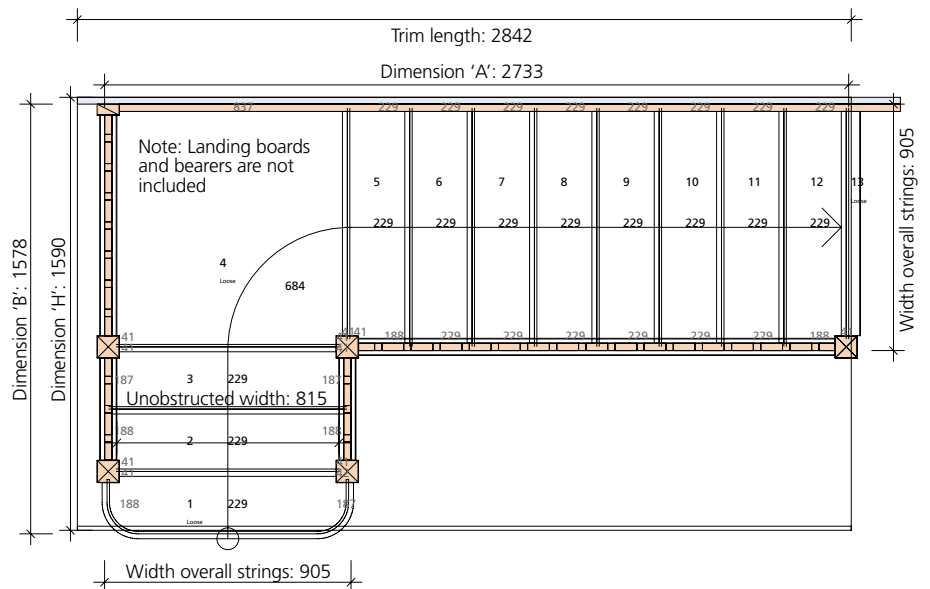
- A: Wall string to wall string
- B: Face of bottom riser to back of wall string
- C: Back of top riser to wall string
- H: Minimum distance to give statutory headroom (Headroom based on storey heights between 2588mm up to 2680mm with 339mm floor zone)

Unobstructed width dimension does not allow for a wall handrail; should this be a requirement the projection of the handrail would need to be deducted.

Alternative configurations: type W3				
Code	"A"	"B"	"C"	"H"
SLW39N	3047	977	N/A	1005
SLBW38N	2818	1206	N/A	1230
SLB1W37N	2589	1435	N/A	1440
SLB2W36N	2360	1664	N/A	1690
SLB3W35N	2131	1893	N/A	1919
SLB4W34N	1902	2122	N/A	2148
SLB5W33N	1673	2351	N/A	2375

Alternative configurations: type W3				
Code	"A"	"B"	"C"	"H"
SLB6W32N	1444	2580	N/A	2606
SLB7W31N	1215	2809	N/A	2815
SLB8W3N	986	3038	N/A	3064
SLW36W3N	3328	977	986	1005
SL1W34W31N	2870	1206	1215	1250
SLBW31W34N	2183	1206	1902	1250

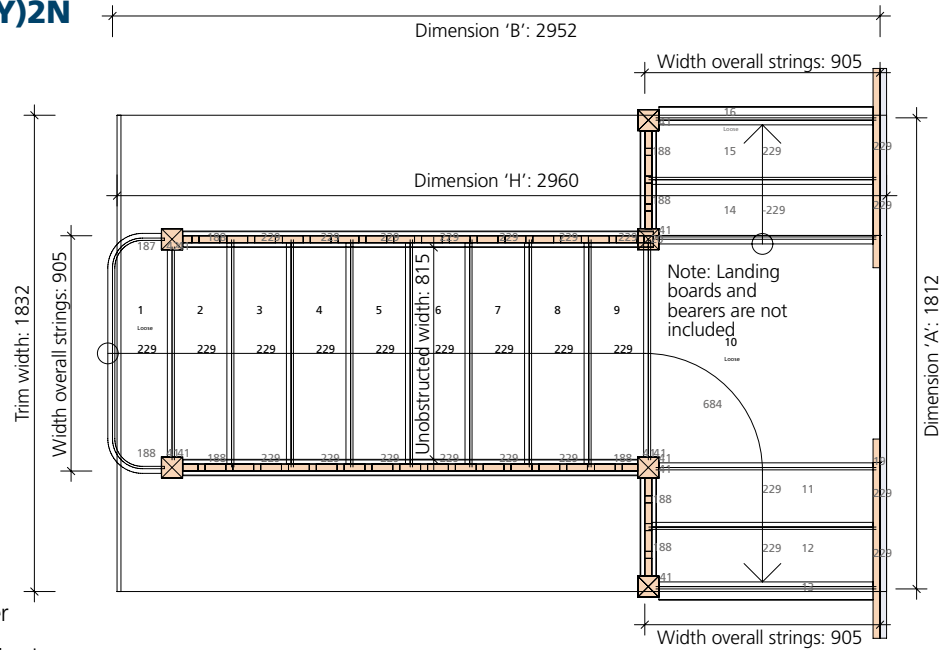
LAYOUT S – SLB(D)2QL8N



Dimensions

- A: Pulpit end string to back of top riser
- B: Face of bottom riser to wall string
- H: Minimum distance to give statutory headroom (Headroom based on storey heights between 2588mm up to 2680mm with 339mm floor zone)

LAYOUT T – SLB(D)8QL(Y)2N



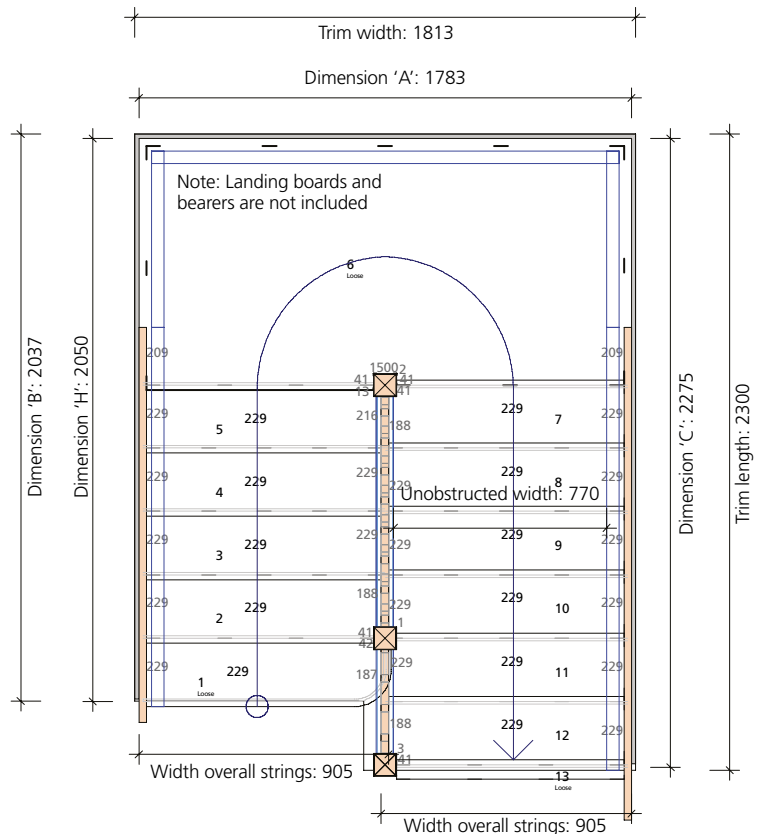
Dimensions

A: Back of top riser to back of top riser

B: Face of bottom riser to back of wall string

H: Minimum distance to give statutory headroom (Headroom based on storey heights between 2588mm up to 2680mm with 339mm floor zone)

LAYOUT U – SLB4HLS6N



Dimensions

A: Wall string to wall string

B: Face of bottom riser to wall string

C: Back of top riser to wall string

H: Minimum distance to give statutory headroom (Headbased on storey heights between 2588mm up to 2680mm with 339mm floor zone).

Unobstructed width dimension does not allow for a wall handrail; should this be a requirement the projection of the handrail would need to be deducted.

Alternative configurations: type HLS				
Code	"A"	"B"	"C"	"H"
SL1HLS10N	1783	1121	3191	1145
SL2HLS9N	1783	1350	2962	1375
SL3HLS8N	1783	1579	2733	1590
SLB3HLS7N	1783	1808	2504	1833
SLB4HLS6N	1783	2037	2276	2050
SLB5HLS5N	1783	2266	2046	2290
SLB6HLS4N	1783	2495	1817	2520
SLB7HLS3N	1783	2724	1588	2749
SLB8HLS2N	1783	2953	1359	2978

STAIR LAYOUTS

SCOTLAND

The most popular stair layouts designed to Scottish Regulations are listed on the following pages together with the critical dimensions relevant to each design including the trimming dimension necessary to obtain headroom clearance.

Our stair layouts are designed to satisfy the required geometry of a private stair in Scotland which is as follows:

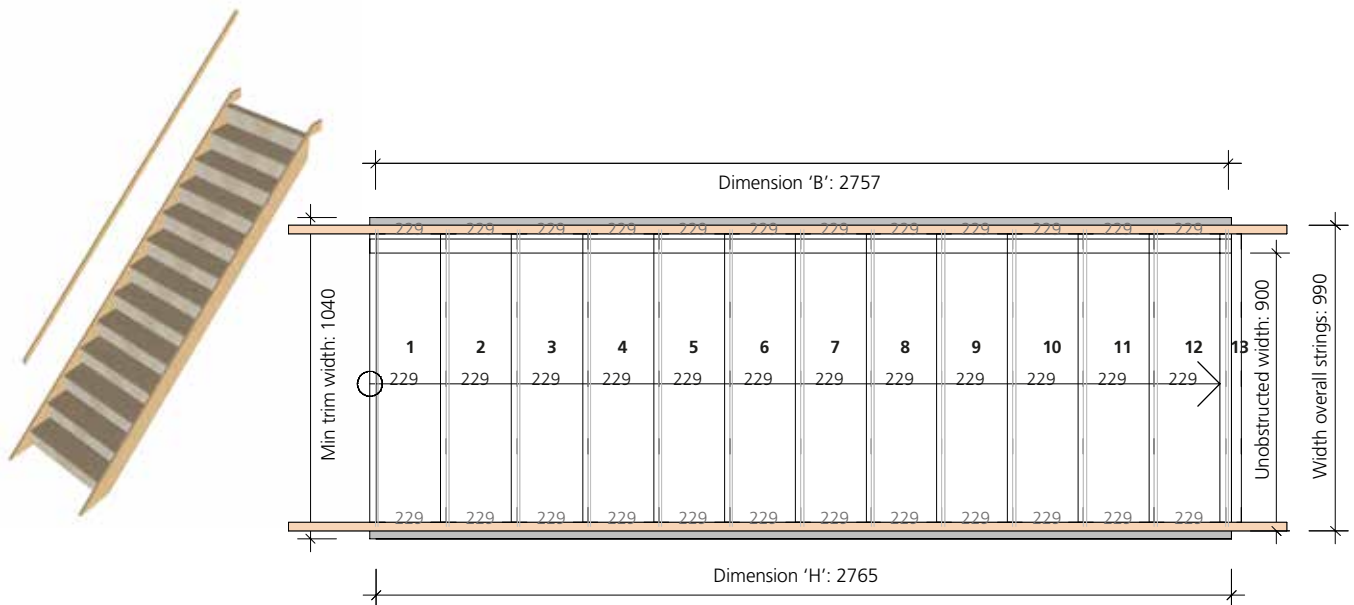
- Minimum rise: 100mm; Maximum rise: 220mm;
Minimum going: 225mm;
- Maximum pitch: 42°.

Our layouts have been designed to provide an effective width of 800mm, measured between handrails, where a continuous handrail is fitted to both sides of a flight. Alternatively, where there is no wall mounted handrail allowed for, layouts have been designed to provide 900mm between any walls or protective barriers / balustrade. The projection of any stringer or newel post should not intrude more than 30mm into this width.

Our specialist stairs team is always on hand to offer help and advice on any aspect of design, construction or the Scottish Technical Handbook. You can contact them on **0845 122 2894**.



LAYOUT 1 – SL12N

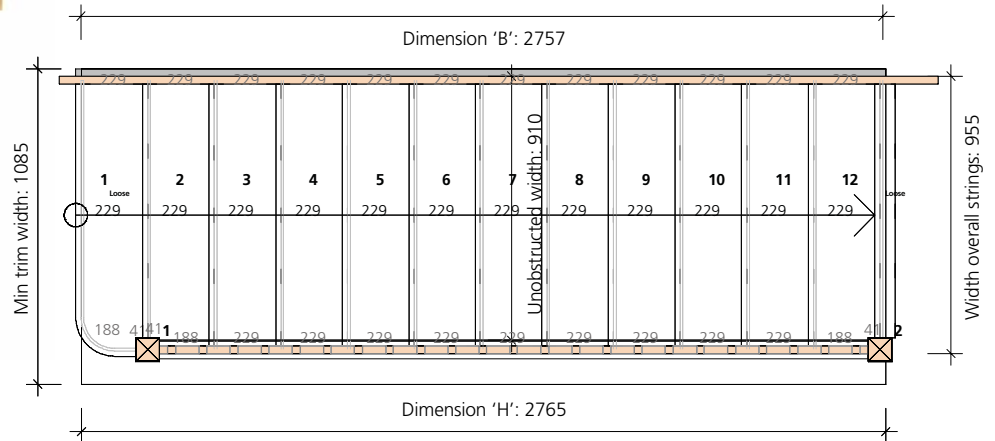


Dimensions

- B. Face of bottom riser to back of top riser
- H. Minimum distance to give statutory headroom (Headroom based on storey heights between 2588mm up to 2680mm with 339mm floor zone).

Unobstructed width dimension does not allow for a wall handrail; should this be a requirement the projection of the handrail would need to be deducted.

LAYOUT 2 – SLB11N



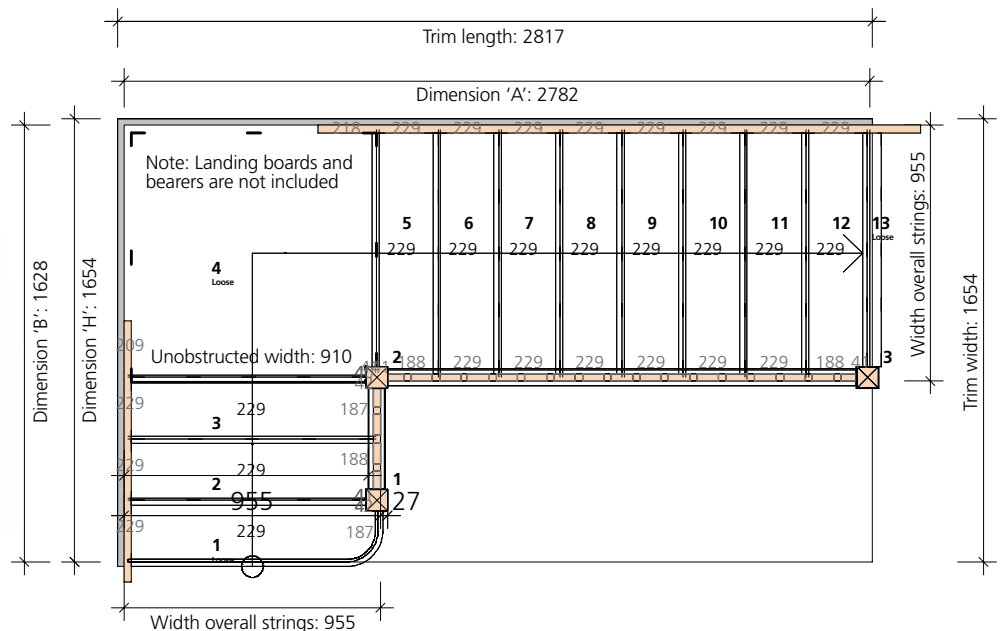
Dimensions

B. Face of bottom riser to back of top riser

H. Minimum distance to give statutory headroom
(Headroom based on storey heights between 2588mm up to 2680mm with 339mm floor zone).

Unobstructed width dimension does not allow for a wall handrail; should this be a requirement the projection of the handrail would need to be deducted.

LAYOUT 3 – SLB2QL8N



Dimensions

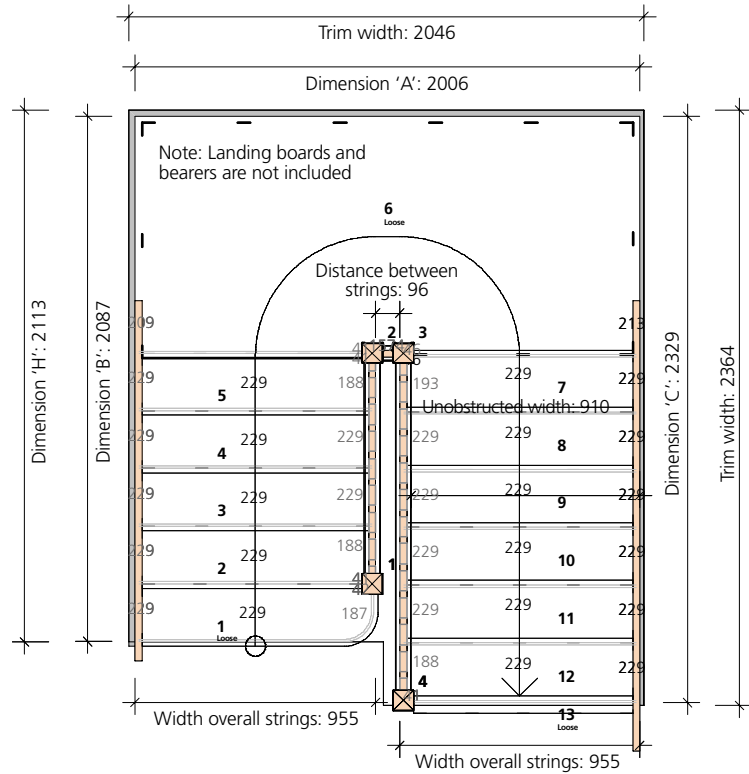
A. Wall string to back of top riser

B. Face of bottom riser to wall string

H. Minimum distance to give statutory headroom
(Headroom based on storey heights between 2588mm up to 2680mm with 339mm floor zone).

Unobstructed width dimension does not allow for a wall handrail; should this be a requirement the projection of the handrail would need to be deducted.

LAYOUT 6 – SLB4HL(TN)6N

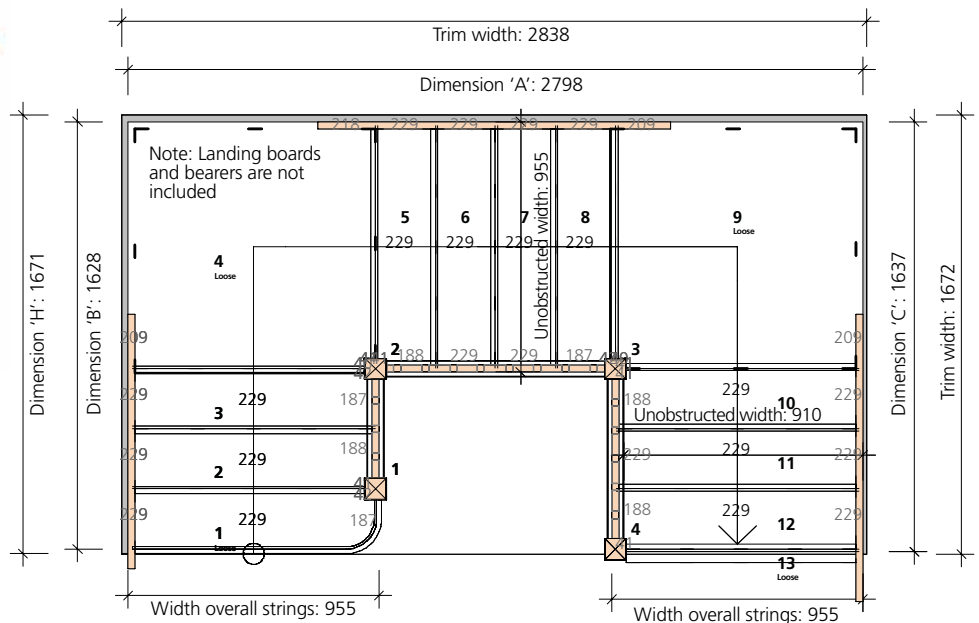


Dimensions

- A. Wall string to wall string
- B. Face of bottom riser to wall string
- C. Back of top riser to wall string
- H. Minimum distance to give statutory headroom (Headroom based on storey heights between 2588mm up to 2680mm with 339mm floor zone).

Unobstructed width dimension does not allow for a wall handrail; should this be a requirement the projection of the handrail would need to be deducted.

LAYOUT 7 – SLB2QL4QL3N

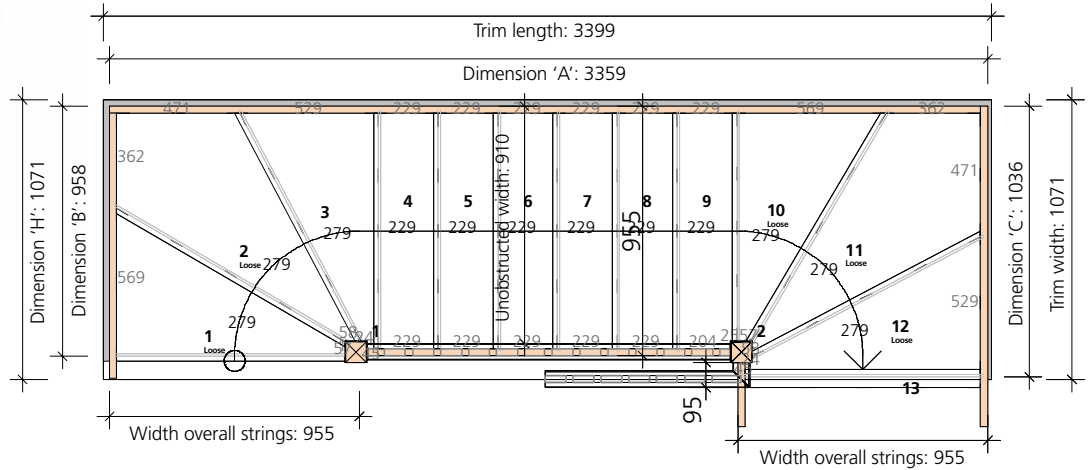


Dimensions

- A. Wall string to wall string
- B. Face of bottom riser to wall string
- C. Back of top riser to wall string
- H. Minimum distance to give statutory headroom (Headroom based on storey heights between 2588mm up to 2680mm with 339mm floor zone).

Unobstructed width dimension does not allow for a wall handrail; should this be a requirement the projection of the handrail would need to be deducted.

LAYOUT 10 – SLW36W3N

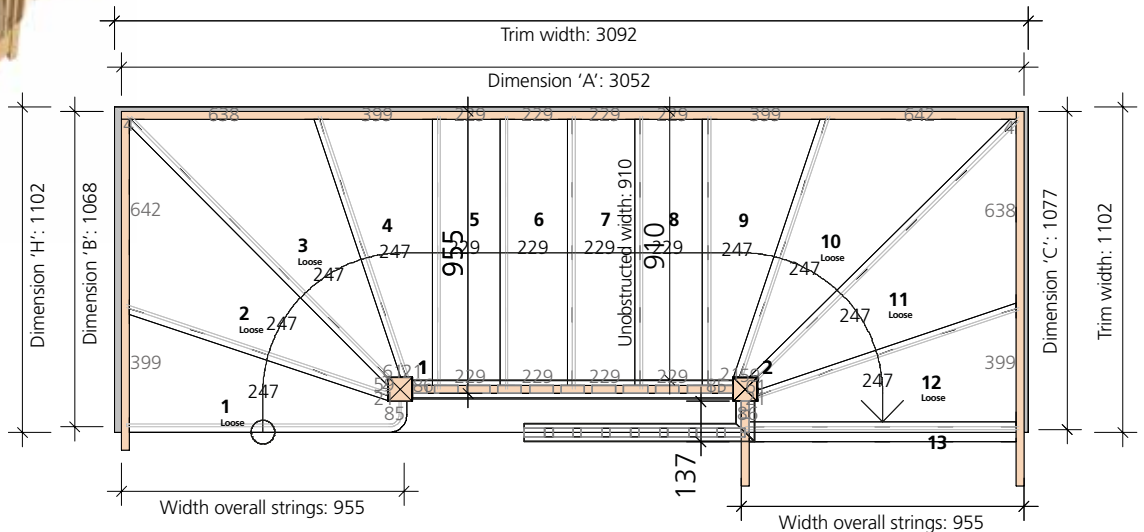
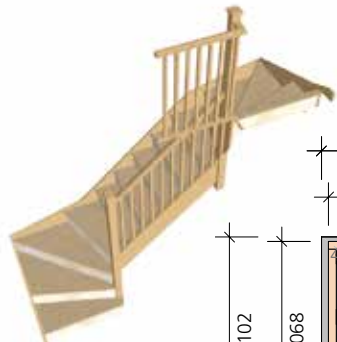


Dimensions

- A. Wall string to wall string
- B. Face of bottom riser to wall string
- C. Back of top riser to wall string
- H. Minimum distance to give statutory headroom (Headroom based on storey heights between 2588mm up to 2680mm with 339mm floor zone).

Unobstructed width dimension does not allow for a wall handrail; should this be a requirement the projection of the handrail would need to be deducted.

LAYOUT 11 – SLW44W4N

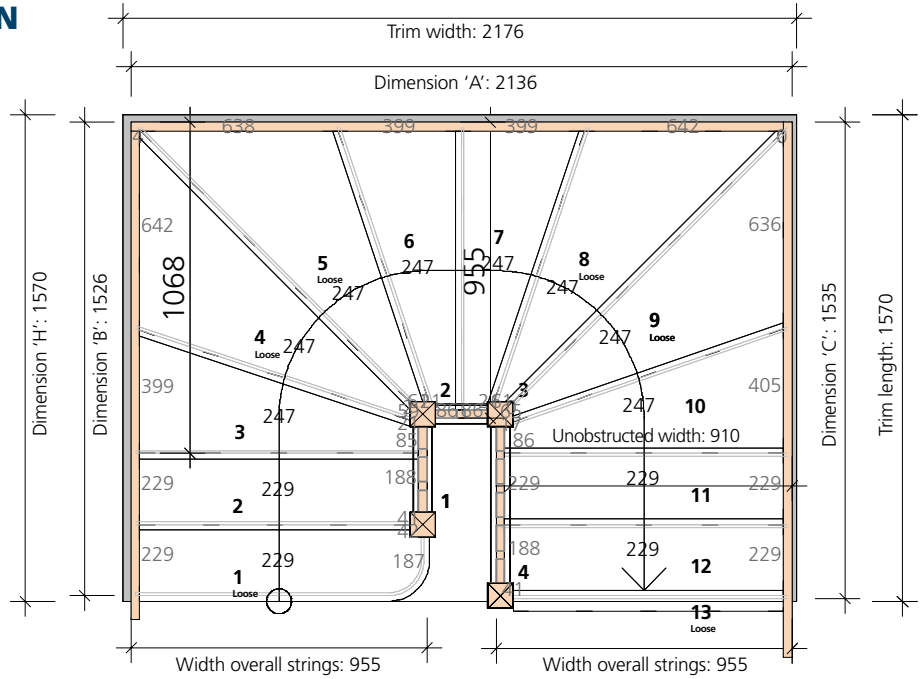


Dimensions

- A. Wall string to wall string
- B. Face of bottom riser to wall string
- C. Back of top riser to wall string
- H. Minimum distance to give statutory headroom (Headroom based on storey heights between 2588mm up to 2680mm with 339mm floor zone).

Unobstructed width dimension does not allow for a wall handrail; should this be a requirement the projection of the handrail would need to be deducted.

LAYOUT 12 – SLB1W4W42N

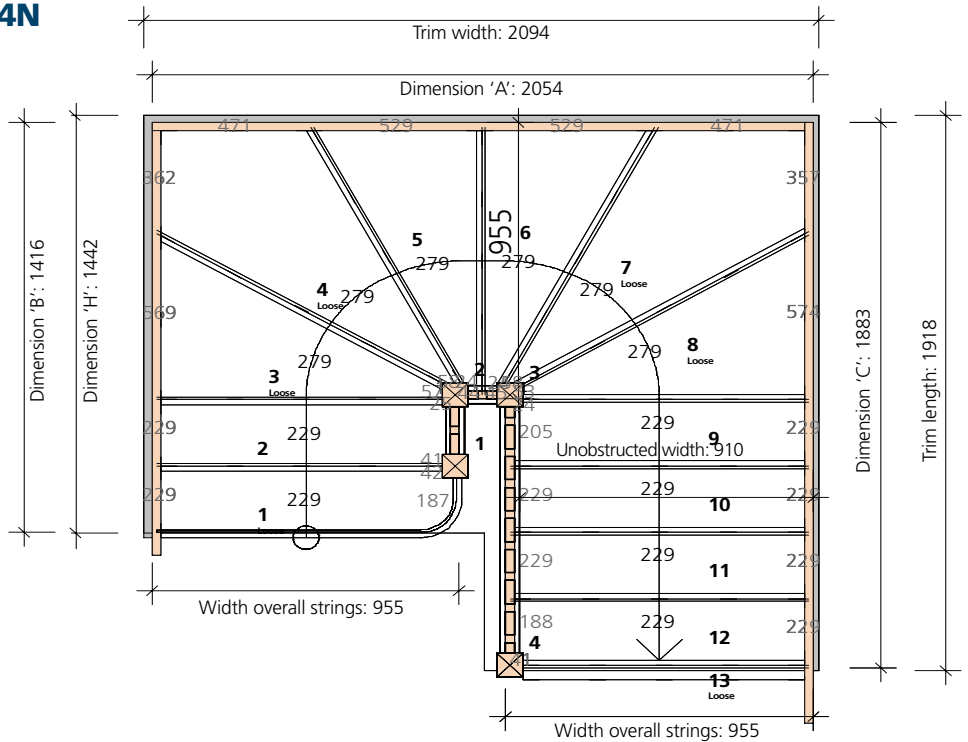


Dimensions

- A. Wall string to wall string
- B. Face of bottom riser to wall string
- C. Back of top riser to wall string
- H. Minimum distance to give statutory headroom
(Headroom based on storey heights between 2588mm up to 2680mm with 339mm floor zone).

Unobstructed width dimension does not allow for a wall handrail; should this be a requirement the projection of the handrail would need to be deducted.

LAYOUT 13 – SLB1W3W34N



Dimensions

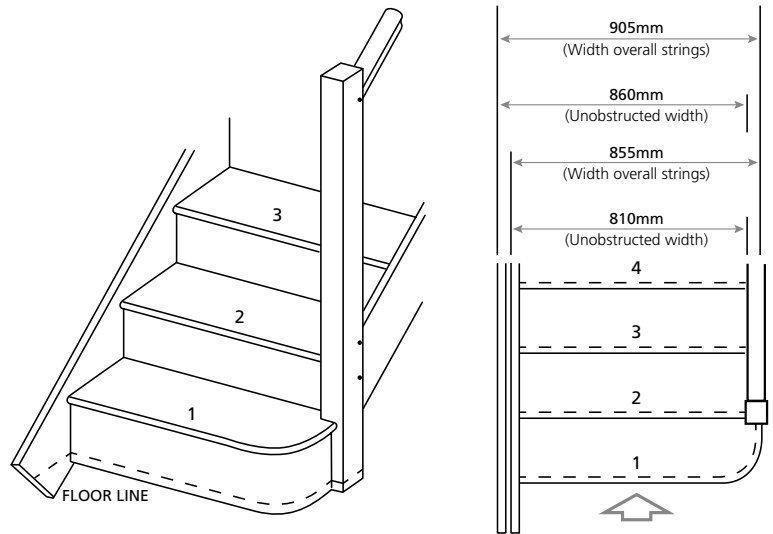
- A. Wall string to wall string
- B. Face of bottom riser to wall string
- C. Back of top riser to wall string
- H. Minimum distance to give statutory headroom
(Headroom based on storey heights between 2588mm up to 2680mm with 339mm floor zone).

Unobstructed width dimension does not allow for a wall handrail; should this be a requirement the projection of the handrail would need to be deducted.

BULLNOSE TREADS

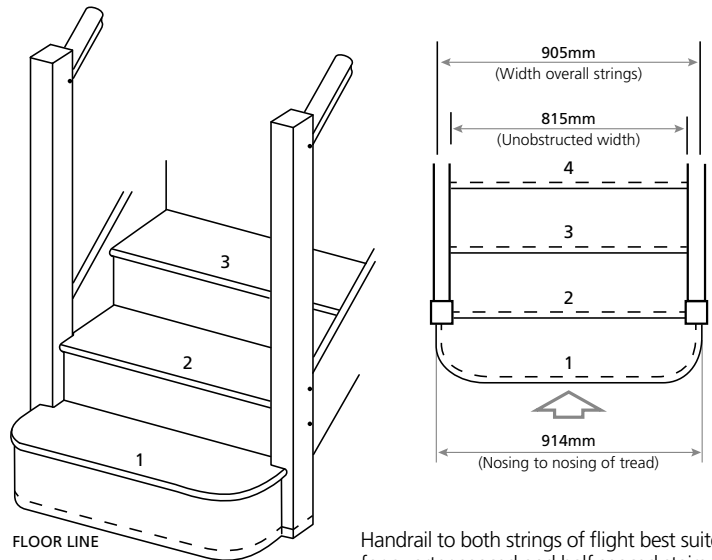
Bullnose treads are feature curved first or second treads that curve into the front face of the newel post(s), or out past the newel post(s) to the side of the stair. Or in the absence of a newel post into a return string.

SINGLE GO: SINGLE END BULLNOSE TREAD



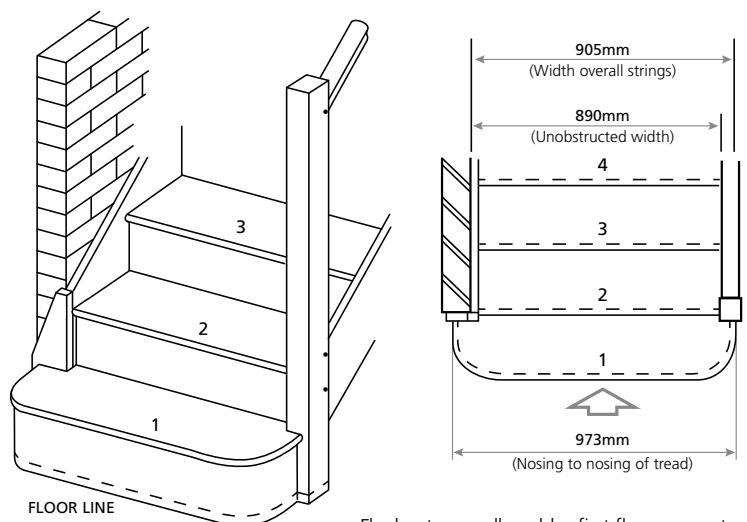
Double End Bullnose Tread

SINGLE GO: DOUBLE END BULLNOSE TREAD



Handrail to both strings of flight best suited for quarter spaced and half spaced stairs.

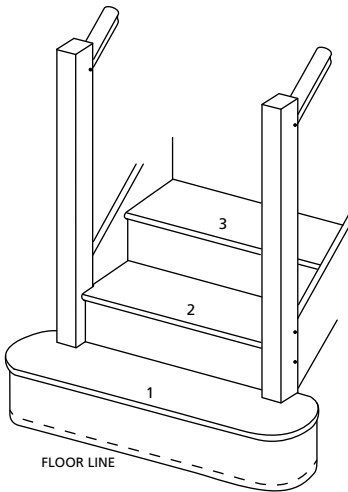
SINGLE GO: DOUBLE END: WIDE BULLNOSE TREAD



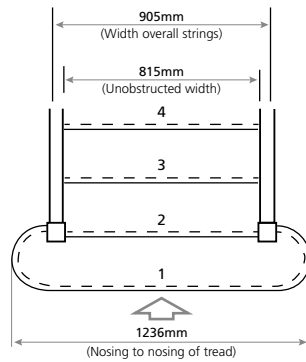
Flank return wall enables first floor support with the maximum approach at foot of stair.

CURTAIL TREADS

Curtil treads are feature curved first or second treads that curve into the side face of the newel post(s), or out past the newel post(s) to the side of the stair, or in the absence of a newel post into a return string.

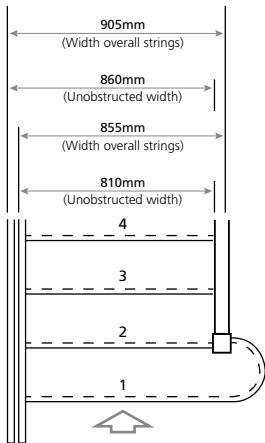


SINGLE GO: DOUBLE END WIDE CURTAIL TREAD

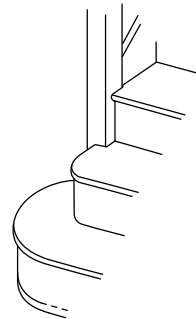
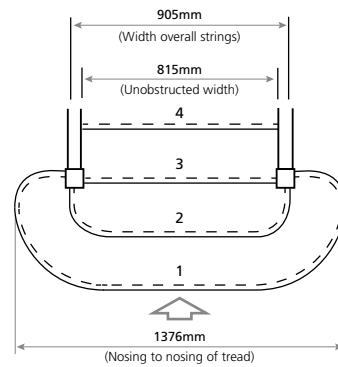


Double End Curtil Tread

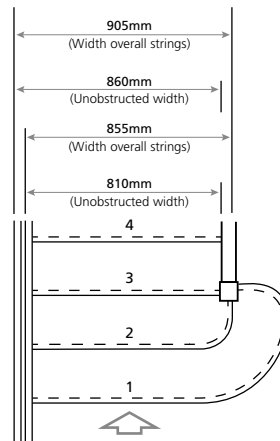
SINGLE GO: SINGLE END CURTAIL TREAD



DOUBLE GO: DOUBLE END CURTAIL WITH BULLNOSE



DOUBLE GO: SINGLE END CURTAIL WITH A SINGLE GO BULLNOSE TREAD





Prestige



Traditional



Contemporary



Straight
Stock Flights



DOMESTIC STAIRS

JELD-WEN offer made to measure timber staircases in almost any design, size and specification to suit any domestic property.

For the ultra-modern look you can opt for our Contemporary range, or alternatively if it's a premium finish you are looking for choose from our Prestige oak and redwood ranges.



Chamfered
Oak



Chamfered
Oak

PRESTIGE RANGE

Upstanding and unbeatable quality. When you look good you feel good. But it's not all about good looks. What lies beneath the surface matters too, which is why we've built the Prestige range using the finest timbers.

With over a century of experience at crafting stairs we know how important first impressions are. The classic, cool tread of our oak staircase creates a grand entrance. For a more colourful impact, the earthy glow of our redwood finished stairs will add a touch of real warmth. Both ranges fit in perfectly with classic or modern décor.



Oak

Redwood

WHITE OAK COMPONENTS

This hardwood offers strength and durability with a beautiful grain and texture. Oak truly reflects the traditional and historical qualities of English craftsmanship.



Oak Spindles



Oak Newels

Oak Handrails

Oak Newel Caps

*Only available with 55mm spindles ** Newel size will depend on choice of staircase

Prestige Oak					
	Size	Code		Size	Code
Plain	55mm	WW900	Traditional	32mm	SMB31909
Twist	55mm	WBT900	Prestige Handrail	92 x 55mm	WHR3.60
Flute	55mm	WF900	Traditional Handrail	63 x 44mm	SMH3036
Turned Colonial	41mm	SMB4709	Traditional Handrail	63 x 44mm	SMH4036
Turned Barley Twist	41mm	SMB42209	Square Newel	82mm	SMNS8015
Provincial	41mm	SMB41309	Turned Newel	82mm	SMNT8014
Traditional	41mm	SMB42309	Prestige Cap		WNC20
Fluted Colonial	41mm	SMB42409	Pyramid Cap		SMPCPO
Square	41mm	TSM440BB	Traditional Cap		SMPCSO
Chamfered	41mm	TSM440BBC	Mushroom Cap		SMTCSMO
Square	32mm	TSM330BB	Ball Cap		SMTCSBO
Chamfered	32mm	TSM330BBC	Acorn Cap		SMTCSAO
Georgian	32mm	SMB3909			

REDWOOD COMPONENTS

Our range of redwood stair parts introduces rich colours which can be highlighted by a polished finish making an unmistakable statement of elegance and quality.



Prestige Redwood		
	Size	Code
Plain	55mm	WW90P
Twist	55mm	WBT90P
Flute	55mm	WF90P
Prestige Handrail	92 x 55mm	WHR3.6P
Prestige Cap		WNC2P
Square Newel	115mm	Special order
Turned Newel	115mm	Special order





Chamfered Oak



Continuous Volute Handrail



Twist Oak



TRADITIONAL RANGE

Past meets present. At JELD-WEN our tradition of superb craftsmanship combined with modern day technology allows us to create staircases of fashion and quality.

If it's the past you hanker for then take a look at our elegantly designed colonial hemlock and colonial primed staircases. Whether it's traditional or fluted we've got plenty of designs to choose from. Whether you live in a Georgian mansion or a trendy town house, you'll be spoilt for choice! Choose the Traditional range for a touch of ageless beauty.



Hemlock



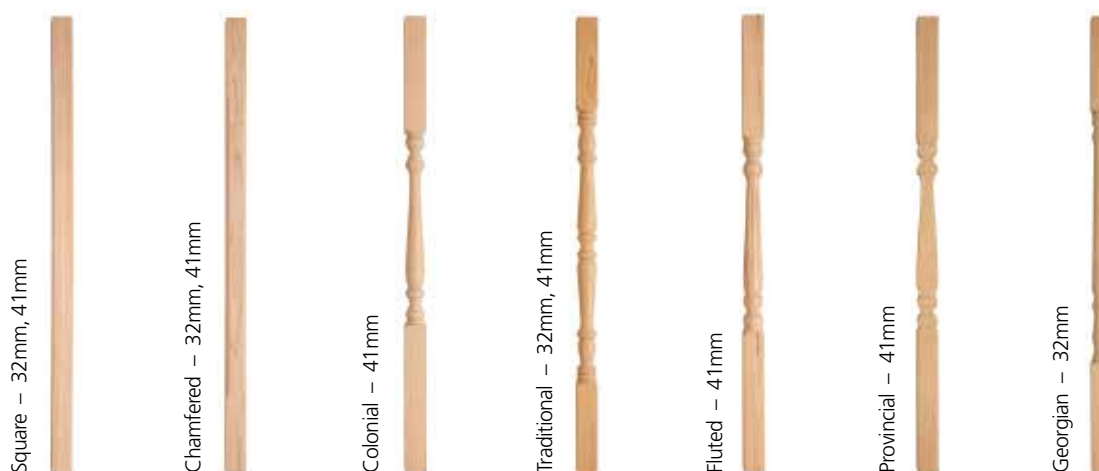
White Primed



Redwood

HEMLOCK COMPONENTS

Hemlock is a conifer belonging to the pine family. The timbers we select are free from knots with a uniform grain and suitable to take a variety of stain finishes.



Hemlock Spindles



Hemlock Newels

Hemlock Handrail

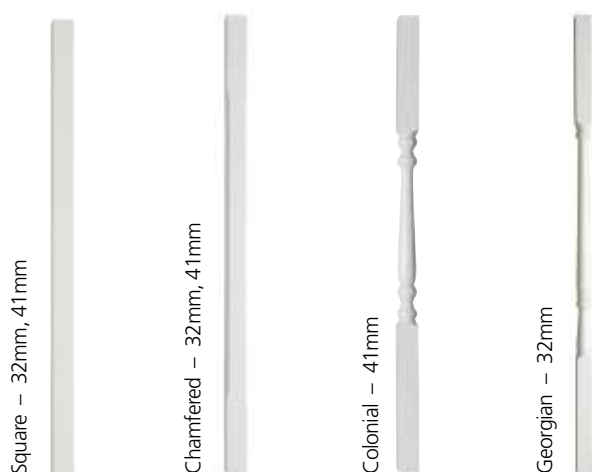
Hemlock Caps

Traditional Hemlock					
	Size	Code		Size	Code
Square	41mm	TSM44HBB	Traditional Handrail	63 x 44mm	SMH4H36
Chamfered	41mm	TSM44HBBC	Traditional Handrail	63 x 44mm	SMH3H36
Colonial	41mm	SMB47H9	Traditional Handrail	63 x 44mm	SMH2H36
Traditional	41mm	SMB423H9	Square Newel	82mm	SMNS8H14
Fluted	41mm	SMB424H9	Turned Newel	82mm	SMNT8H14
Provincial	41mm	SMB413H9	Square Cap		SMPCSP
Square	32mm	TSM33HBB	Mushroom Cap		SMTCSMH
Chamfered	32mm	TSM33HBBC	Ball Cap		SMTCSBH
Georgian	32mm	SMB39H9	Acorn Cap		SMTCSAH
Traditional	32mm	SMB319H9			

TRADITIONAL RANGE

WHITE PRIMED COMPONENTS

The most time consuming part of fitting a staircase is the painting. Our solution is to offer pre-primed components that save time and help you deliver your project on time and within budget. The primed range of stair parts are made from premium grade softwood, sanded to a high specification and primed with a satin white finish.



White Primed Spindles



White Primed Newels



Traditional

White Primed Handrail



Ball Cap

White Primed Caps



Acorn Cap



Square Cap



Mushroom Cap

Traditional White Primed		
	Size	Code
Square	41mm	TSM44WBB
Chamfered	41mm	TSM44WBBC
Colonial	41mm	SMB47WFL
Square	32mm	TSM33WBB
Chamfered	32mm	TSM33WBBC
Georgian	32mm	SMB39WFL
Traditional Handrail	63 x 44mm	SMH4WF36
Traditional Handrail	63 x 44mm	SMH3WF36
Traditional Handrail	63 x 44mm	SMH2WF36
Square Newel	82mm	SMNS8WF14
Chamfered Newel	82mm	SMNS8WF13C
Turned Newel	82mm	SMNT8WF14
Square Cap		SMPCSPWF
Mushroom Cap		SMTCSMWF
Ball Cap		SMTCSBWF
Acorn Cap		SMTCSAWF



Colonial Primed

REDWOOD COMPONENTS

Our range of redwood stair parts introduces rich colours which can be highlighted by a polished finish making an unmistakable statement of elegance and quality.



Redwood Spindles



Redwood Newels

Redwood Handrail

Redwood Caps

Traditional Redwood					
	Size	Code		Size	Code
Square	41mm	TSM44RBB	Georgian	32mm	SMB39R9
Chamfered	41mm	TSM44RBBC	Traditional	32mm	SMB319R9
Colonial	41mm	SMB47R9	Traditional Handrail	63 x 44mm	SMH2R36
Traditional	41mm	SMB423R9	Square Newel	82mm	SMNS8R14
Fluted	41mm	SMB424R9	Turned Newel	82mm	SMNT8R14
Provincial	41mm	SMB413R9	Square Cap		SMPCSR
Barley Twist	41mm	SMB422R9	Mushroom Cap		SMTCSMR
Square	32mm	TSM33RBB	Ball Cap		SMTCSBR
Chamfered	32mm	TSM33RBBC	Acorn Cap		SMTCSAR



CONTEMPORARY RANGE

Out with the old, in with the new. Think modern. Our Contemporary staircase fits perfectly into a funky brand new build and can provide a total transformation for a dark Victorian hallway.

Contemporary stair parts come in all shapes and sizes in a variety of finishes to help you create stairs that capture the style and personality of the people who live there.

Connect the solid smooth lines of oak with a dash of metal from our Liskeard range to create a modern but classy look. For a see through effect, add a touch of glass from our Radiance range to give the illusion of lots more space.

For something completely different have a look at the Casa staircase, a new take on the traditional hacienda Spanish style with beautiful hardwearing black iron spindles.

Whatever you want, our stair technician will measure up for free and help you and your customers choose newels, caps, connectors and balusters in a choice of timbers and metals ranging from oak to white primed timber or nickel balustrades.



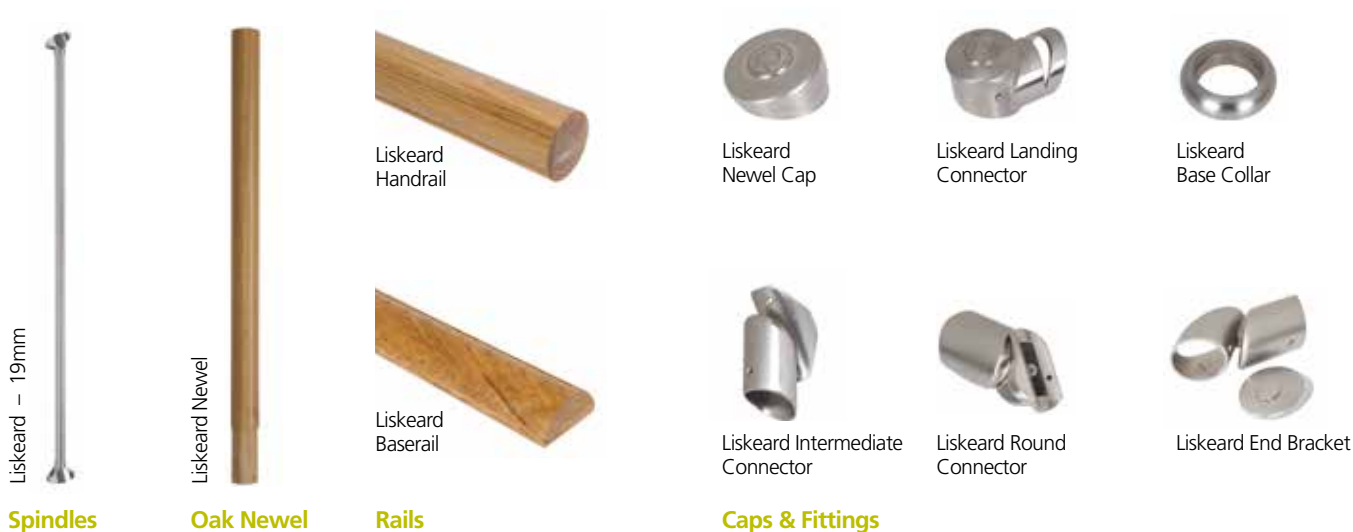
Oak

White Primed

For more information contact us on **0845 122 2894**

LISKEARD COMPONENTS

This hardwood offers strength and durability with a beautiful grain and texture. Oak truly reflects the traditional and historical qualities of English craftsmanship.



Spindles

Oak Newel

Rails

Caps & Fittings

Contemporary Liskeard					
	Size	Code		Size	Code
Liskeard Spindles Rake	19mm	LS758NR	Liskeard Base Collar		LEVBCN
Liskeard Spindles Landing	19mm	LS817NL	Liskeard Landing Connector		LEVLHCBN
Liskeard Newel	54mm	LNT9500	Liskeard Handrail 2400mm	54 x 54mm	LHR2.40
Liskeard End Bracket		LEVEBN	Liskeard Handrail 4200mm	54 x 54mm	LHR4.20
Liskeard Newel Cap		LEVNCN	Liskeard Baserail 2400mm	27 x 53mm	LBR2.40
Liskeard Round Connector		LEVHRN	Liskeard Baserail 4200mm	27 x 53mm	LBR4.20
Liskeard Intermediate Connector		LEVICN			

RADIANCE COMPONENTS

Open up your home with this premium combination of glass and oak.



Glass Panels

Rails

Caps & Fittings

Contemporary Radiance		
	Size	Code
Radiance Glass Panel Landing	850 x 87 x 8mm	GLAN80PNL
Radiance Glass Panel Landing	850 x 210 x 8mm	GLAN210PNL
Radiance Glass Panel Rake	835 x 210 x 8mm	GRK210PNL
Radiance Bracket		GBKT
Radiance Handrail	2400mm	GHR2.40
Radiance Handrail	4200mm	GHR4.20
Radiance Baserail	2400mm	GBR2.40
Radiance Baserail	4200mm	GBR4.20

CONTEMPORARY RANGE

ASHFORD COMPONENTS

Choose from white softwood primed or oak.



Ashford – 41mm

Oak Spindles



Ashford – 41mm

White Primed Spindles

Contemporary Ashford		
	Size	Code
Oak Ashford Spindle Landing	41mm	SMB425OL
Oak Ashford Spindle Rake	41mm	SMB425OR
White Primed Ashford Spindle Landing	41mm	SMB425WFL
White Primed Ashford Spindle Rake	41mm	SMB425WFR

CASA COMPONENTS

Sleek and minimalistic.



Casa – 14mm

Iron Spindles



Casa Handrail



Casa Baserail

Rails

Contemporary Casa		
	Size	Code
Casa Spindle Rake	14mm	SMBIRBR
Casa Spindle Landing	14mm	SMBIRBL
Casa Handrail 2400mm	60 x 69mm	SMHIR24O
Casa Handrail 4200mm	60 x 69mm	SMHIR42O
Casa Baserail 2400mm	63 x 50mm	SMBIR24O
Casa Baserail 4200mm	63 x 50mm	SMBIR42O

BARBICAN COMPONENTS

Choose a standard oak newel and handrail from the 'Prestige' range or order a Barbican newel on special order.



Barbican – 41mm

Oak Spindles

Contemporary Barbican		
	Size	Code
Barbican Spindle	41mm	SMB4DRO9
Barbican Newel		Special order

CAMBER COMPONENTS

Slender and beautiful.



Camber – 41mm

Oak Spindles

Contemporary Camber		
	Size	Code
Camber Spindle	41mm	SMB435O9



STRAIGHT STOCK FLIGHTS

For those projects with time and budget constraints and where made to measure is not a necessity our standard specification straight stock flights are available on express delivery.

JELD-WEN offer closed riser 13 up straight stock flights in whitewood/composite materials or open riser versions which are available to order.

See the table below for further details:

Stair Code	Whitewood strings & MDF Treads	Total Rise	Total Going	Width over string	Individual Rise	Individual Go
Stair WM	✓	2600mm	2676mm	855mm	200mm	223mm
Stair WMSC	✓	2600mm	2700mm	905mm*	200mm	225mm
Stair W85	✓	2574mm	2676mm	855mm	198mm	223mm
Stair W88	✓	2639mm	2712mm	855mm	203mm	226mm

*955mm wide available on request





COMMUNAL STAIRS

JELD-WEN offers a complete solution for communal stairs and our range has been proven to meet even the most exacting performance standards.



STANDARD COMMUNAL

JELD-WEN manufacture general access communal stairs that comply with the standards set by the BWF stair scheme, in accordance with BS 585 and BS 6399-1.

General access stair

A general access stair is intended for all users of a building on a day-to-day basis, as a normal route between levels. Our communal staircases are designed and tested to meet the requirements of 'Usage Type 2' and 'Usage Type 3' as defined below:

Usage Type 1	Self-contained dwelling units and communal areas in blocks of flats not more than three storeys high and not more than four units per floor accessible from one stair.
Usage Type 2	Communal areas in blocks of flats other than use type 1, and institutional buildings (not subject to crowds), hostels, guest houses, residential clubs.
Usage Type 3	All other buildings including hotels and motels.

Multi-occupancy dwellings

Communal stairs will be required for use in multi-occupancy dwellings i.e. in flats for access to apartments, but also in some dwellings where entry is shared. Unlike domestic flights, the load bearing characteristics of trunks and handrails are greater, and communal stairs may require fire protection, all of which JELD-WEN can provide.

Where the build programme determines particular requirements, in areas such as handling or installation e.g. Off-Site Manufacturing or other Modern Methods of Construction (MMC), JELD-WEN can develop the standard stairs designs by including features such as;

- Lifting points
- Pre-assembly
- Factory finishing
- Fire protection
- Packaging and protection
- Fixing to particular joist designs
- Shrinkage allowance for timber frame

General access communal stair specification

Components	Material Style
Newel Posts	90mm square or stop chamfered - hemlock
Handrails	63.5mm x 44mm profiled - hemlock
Balusters	41mm square or stop chamfered - hemlock
Strings	32mm x 350mm Kerto-S
Treads	25mm MDF
Risers	15mm MDF

Basement stairs

If an escape stair forms part of the only escape route from a building it should not be continued down to serve a basement. A separate stair should serve the basement.

If there is more than one escape stair from a building only one of the stairs serving the upper storeys need to be terminated at ground level. Other stairs may connect with the basement if there is a protected lobby, or a protected corridor between the stair(s) and accommodation at each basement level. Refer to Building Regulations for more details.

Handrails for communal stairs

Stairs should have a handrail on one side if they are less than 1m wide. They should have a handrail on both sides if they are wider. Handrails should be provided beside the two bottom steps where stairs are intended to be used by people with disabilities (AD M).

In all buildings handrail heights should be between 900mm and 1000mm measured to the top of the handrail from the pitch line or floor.

Guarding must be capable or resisting at least the horizontal force given in BS 6399: Part 1: 1996. For further guidance on design of barriers and infill panels refer to BS 6180: 1995 Code of practice for protective barriers in and about buildings.

Loading of balustrades

At JELD-WEN we independently load test our balustrades in accordance with BS 6399-1:1996, clause 10, which specifies a uniformly distributed line load for the barrier and a uniformly distributed and point load applied to the infill. JELD-WEN communal stairs meet and exceed the requirements shown below:

Horizontal loads to handrails and balusters

Test load	Usage Type 1	Usage Type 2 & 3
Horizontal UDL to handrail	0.36 kN/m run	0.74 kN/m run
UDL applied to the infill	0.5 kN/m ²	1.0 kN/m ²
Concentrated Load	0.25 kN	0.5 kN





FIRE PROTECTED COMMUNAL

Fire protected communal stairs may be required in multi-occupancy buildings if they act as an escape route in the event of a fire. So it is vital that it is able to resist the effects of the fire and remain its integrity after the fire has gone out.

Concrete stairs have long been the solution to dealing with these requirements, however timber fire protected stairs have many advantages over the use of concrete, not least the aesthetics, cost and lead-time savings. Unlike many other materials, timber behaves predictably in a fire, forming a charred surface which provides protection for the inner structure so that timber can stay intact and fully load bearing during a fire.

Fire protected stairs may be required in the following circumstances:

Utility stairs

A stair used for escape, access for maintenance, or purposes other than as the usual route for moving between levels on a day-to-day basis.

General access stair

A stair intended for all users of a building on a day-to-day basis, as a normal route between levels.

Assembly stair

A stair serving a place where many people gather.

Firefighting stairs

A stair of acceptable width for everyday use will be sufficient for escape purposes, however if it is also a fire fighting stair it should be at least 1100mm wide. Refer to Building Regulations to determine when a fire fighting stair may be required.

High standards

JELD-WEN has worked hard to drive up standards within the industry and are the only volume manufacturer to be independently certified by the British Woodworking Federation (BWF) and the BRE Loss Prevention Certification Board (LPCB) for fire protected stairs. The LPCB tests and verifies designs, performance, manufacturing process and quality assurance throughout manufacture to establish whether the timber stairs are serviceable and an effective means of escape, even after an extremely hazardous fire.

Where required, JELD-WEN's communal stairs are treated with the Envirograph ES/VFR Fire Retardant Coating System, and tested to BS 476: Part 6: 1989, Class O for fire propagation and BS 476: Part 7: 1987, Class I for surface spread of flame.

Manufacturers offering fire protected stairs have to demonstrate that their stairs comply with the requirements for fire protection under the test method set out by BD2569 Fire Performance of Escape Stairs – Guidance Document (Department of Communities and Local Government, 2009).

The LPCB audits the manufacturing process and quality assurance throughout manufacture to establish whether the timber stairs are serviceable and an effective means of escape, even after an extremely hazardous fire.

JELD-WEN is the only UK manufacturer to be certified for fire protected stairs. Our stairs proved to be capable of carrying a static load of 270kg in weight after the fire test, which confirmed they are suitable for use as escape stairs, providing a safe route out of a multi-storey building.

Fire testing fire protected stair:



Before



During



After fire has gone out



Fire protected communal stair specification

Components	Treatment Process	Material Style
Newel Posts	2 coats of Envirograf ES/VFR fire protection coating applied at a rate of 12-15m ² /litre/coat in accordance with manufacturers instructions.	90mm square or stop chamfered - hemlock
Handrails		63.5mm x 44mm profiled - hemlock
Balusters		41mm square or stop chamfered - hemlock
Strings		32mm x 350mm Kerto-S
Treads	None: impregnated	25mm Euroclass B FR MDF Premier Products Ltd
Risers	None: impregnated	15mm Euroclass B FR MDF Premier Products Ltd

Note: It is recommended that the fire precautions incorporated into any proposed building works meet the requirements of all the authorities that may be involved in the enforcement of fire safety legislation, and that consultation with those authorities takes place in conjunction with the Building Regulation approval.

Fire protection and maintenance

In order to maintain coatings in good condition, the following procedure should be followed:-

- Clean as required using a soft cloth and mild solution of warm soapy water. Do not saturate the surface.
- Spills and heavy stains should be removed immediately using a mild detergent solution to avoid permanent discolouration of the coatings.
- Avoid the use of aggressive and abrasive cleaning materials and cleaners containing wax and silicones.
- Avoid placing hot items directly onto the finished surface as this may result in permanent damage.
- Avoid excessive heat and direct sunlight, which may result in discolouration.
- It is possible to touch up light scratches provided the correct products are used.
- After 5 years the coatings should be inspected annually and if necessary a maintenance coat of ES/VFR/TCW (or HW05 if a solvent borne Top Seal was used.) in selected sheen level should be applied. No longer than 10 years should elapse before maintenance topcoat is applied.



BALUSTRADE SOLUTIONS

With increasing pressure on timescales for new build projects, JELD-WEN have developed several balustrading solutions to speed up installation and provide temporary measures during the construction process.

DEMOUNTABLE BALUSTRADE

With the increase in town-house style developments, where space is at a premium, JELD-WEN can provide a demountable balustrade - meaning the balustrade can be simply removed to allow large items to be moved up and down the staircase. The balustrade can then be secured back into place.

Four easy steps:



1

The balustrade fully assembled.



2

Unscrew and remove the bolt holding the handrail and keep safely.



3

Unscrew the floor rail.



4

Once all the fittings have been removed, the section of assembled balustrade is simply lifted off.



Demountable balustrade unclipped and removed

Important: The demountable balustrade is a temporary measure. You should ensure that the stairwells are adequately protected at all times to prevent accidents occurring.

PRE-ASSEMBLED BALUSTRADE

JELD-WEN offers factory assembled balustrading, to ensure a quick and easy fix on site. All our balustrade components arrive fully assembled so there is no need for time consuming sawing and cutting. Simply slot the balustrade into place and secure.



TEMPORARY GUARDRAIL

In new build properties safety on site is crucial at all times. At JELD-WEN we have developed a simple temporary guardrail and edge protection solution to provide additional safety measures while properties are under construction.

During construction the new staircase strings, treads, risers and newel posts are secured in place at the first fix stage, and temporary safety measures will be required to remove the risk of falling prior to the second fix of the baluster and spindles.

Our temporary guardrail and edge protection provides a temporary safety barrier both up the stairs and across landings that alleviates the risk of falling, whilst allowing access for materials to be moved easily up the stairs.

Testing has been conducted for the resistance against static loading in accordance with BS EN 13374: 2013 Class A.

RAKING FITTING INSTRUCTIONS

STEP 1

Install the pre-sized principal raking guardrail by fixing each end to the newel posts using the fixing bolts supplied.

STEP 2

Hang both hanging brackets over the upper guardrail and position evenly from each end to create three equal gaps. Fix using 2 no. M4x40mm CE marked screws on each bracket.

STEP 3

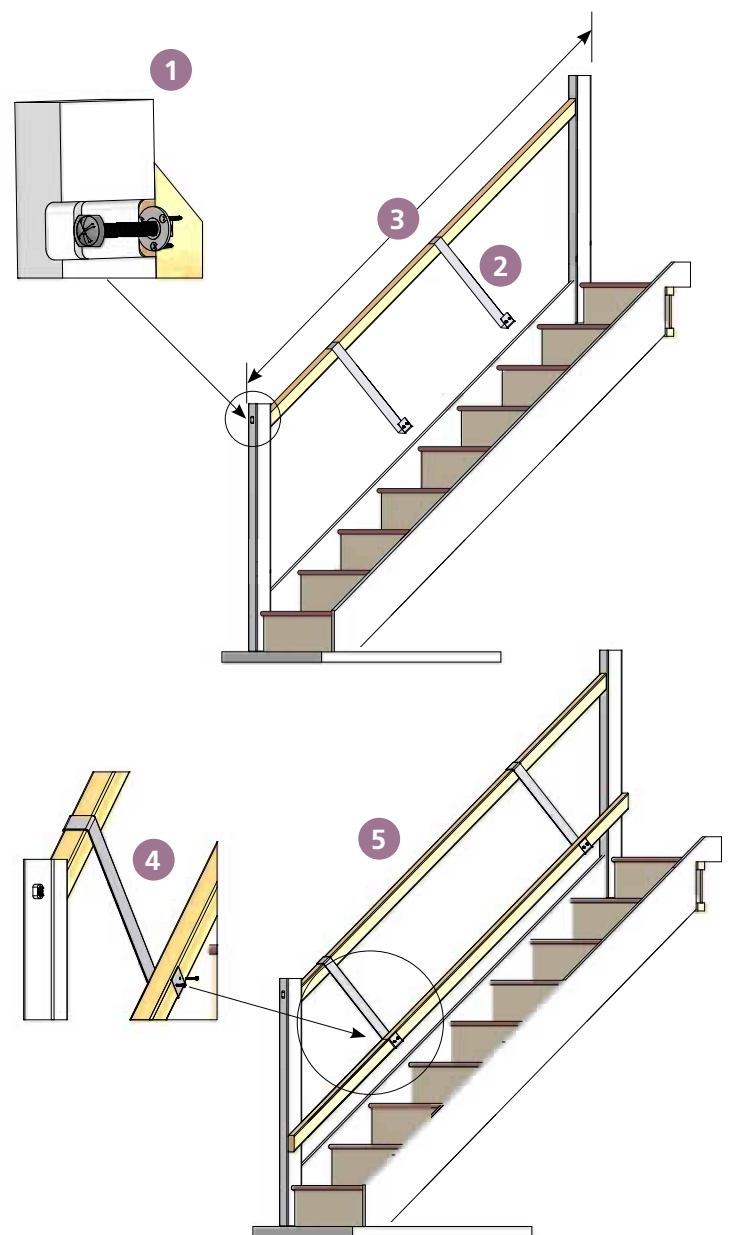
Measure the overall width of the guardrail system from the outer edge of each newel post as per illustration, and cut the mid-guardrail to suit this dimension.

STEP 4

Locate the mid-guardrail into the hanging bracket as per illustration. Fix using 2 no. M4x40mm CE marked screws per hanger. Ensure the length of the mid-guardrail overhangs the newel post at both ends.

STEP 5

The finished system should look as per illustration 5. Ensure all fixings are in place and secure. Please note the gap between the upper and mid guardrails will be determined by the hanging brackets, illustration for reference only.



LANDING RETURN FITTING INSTRUCTIONS

STEP 1

Locate temporary newel post into metal floor plate. Secure using 4 no. M5x60mm CE marked screws. Repeat this to create both ends of the landing return.

STEP 2

Fix both floor plates to the floor at either end of the edge to be protected using 4 no. M5x60mm CE marked screws for each plate. Please note overall width of the complete system should not exceed 2500mm.

STEP 3

Measure between the two fixed newel posts and ensure the guardrail is the correct length. Trim to suit if necessary.

STEP 4

Locate L bracket into the pre-machined recess in the newel post and fix using 2 no. M4x40mm CE marked screws on each newel post. Locate upper guardrail onto the L bracket as illustrated, ensure it sits central over the L bracket and screw from underside as per illustration using 2x M4x40mm screws. Please note image shows cross-sectional detail.

STEP 5

Hang both hanging brackets over the upper guardrail and position evenly from each end to create three equal gaps. Fix using 2 no. M4x40mm CE marked screws on each bracket.

STEP 6

Measure the overall width of the guardrail system from the outer edge of each newel post as per illustration and cut mid-guardrail to suit this dimension.

STEP 7

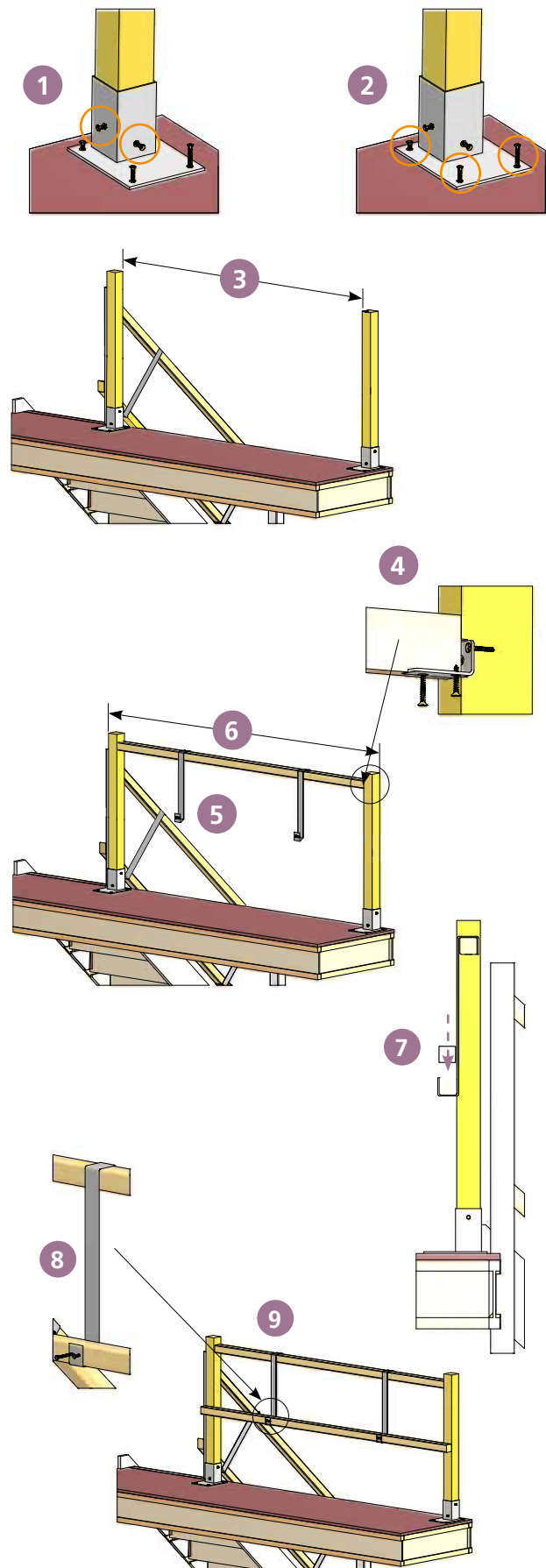
Locate the mid-guardrail into the hanging bracket as per illustration. Ensure the length of the mid-guardrail overhangs the newel post at both ends.

STEP 8

Fix the mid-guardrail to the hanging bracket using the 2 no. M4x40mm CE marked screws per hanger.

STEP 9

The finished system should look as per illustration 9. Ensure all fixings are in place and secure. To ensure full compliance with BS EN 13374:2013 a toe board should be fitted.







CASE STUDIES

AVANT HOMES

Premium housebuilder Avant Homes partners with JELD-WEN to develop bespoke timber staircases for a brand new range of contemporary homes.

Avant Homes, leading residential developer of premium homes, who build 1300 plots per year nationally, has recently enhanced their specification to develop a brand new range of homes. Their premium development projects typically feature high end private properties with three to five bedrooms, with a brand new enhanced specification throughout, from kitchens and internal doors, fixtures and fittings right through to the stairs.

Staircases can leave a lasting impression on a potential buyer, so a bespoke design is worth the investment. Avant Homes' 'vision' was to create homes inspired by the aspirations and needs of their customers, and required a bespoke staircase that was different to a standard new build specification to help differentiate the homes for sale. In order to achieve this, the housebuilder needed to partner with a manufacturer with the technology and flexibility to create something new, and enlisted the expertise of JELD-WEN.

The challenge for JELD-WEN was to create a product that was original and fit the brief: 'different, unique and high-end,' as well as complementing Avant Homes' vision to create homes that are contemporary and reflective of a modern way of living.

Working closely with Avant Homes' technical and design teams JELD-WEN's final bespoke design included a hemlock newel post and newel cap with dark wood inlay detail. The subtle detail provided a stylish look and feel to meet Avant Homes' 'contemporary' vision, and the unique baluster design gave the properties a prestigious, yet modern, feel throughout.

Avant Homes fact sheet

Project:	Brand new range of homes for Avant Homes
Location:	National Supply
Products:	Made to measure stairs

Martin Sanwell, Group Procurement Director at Avant Homes, said:

"We looked to JELD-WEN for a solution to fit with our vision and worked closely with them to implement a unique design for our projects. We were delighted with their approach to the project and with their flexibility to work with us to develop a tailored package specifically for our needs. We were extremely pleased with the end result and the excellent service that JELD-WEN provided."



For project support email us at projectsuk@jeldwen.com, or for more case studies visit the website

BOVIS HOMES

JELD-WEN has worked in partnership with Bovis Homes over the last few years to supply both their domestic and communal staircases.

During 2013 Bovis Homes took the decision to enhance their existing specification. Michael Black, Bovis Homes Group Development Director said:

“As our customers enter their homes the staircases are quite often one of the first things that they see, therefore it is very important that the appearance reflects our design direction. In reviewing our specification we wanted to achieve a premium appearance whilst still maintaining the solidity that people rightly expect from their staircases.

“We are delighted both with JELD-WEN’s flexibility during this process and, of course, the end result. Our new baluster design combined with the oak handrail and newel cap detail has been very well received by our customers.”

Bovis Homes also wanted to include communal timber stairs in their medium rise apartments, as part of creating a warmer, more welcoming and less institutionalised feel for occupants within the communal areas. The national house builder also wanted to try out a number of different installation methods to find out where timber staircase installation best fits into the build schedule.

Bovis Homes fact sheet

Project:	New apartments at Loughborough
Location:	Loughborough, Leicestershire
Contractor:	Bovis Homes
Products:	Communal stairs

Michael Black, explained

“There should be significant cost savings of using timber stairs in our apartment developments, not just in the stairs themselves, but also in their assembly and in the need for less scaffolding. However, the true benefits are to the customer. Timber stairs avoid the institutionalised feel of other materials, such as concrete and metal work, that is often used in apartments.

“It also ensures that a development stands out from the rest, creating a more aesthetically pleasing feel that buyers will appreciate and that adds value in the long term.”



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PEROWNES FARM

16th Century farmhouse in rural Norfolk has been brought back to life, following the devastating effects of a fire two years ago.

The idyllic thatched roof property, home to the Rogerson family for eight years, was devastated by a fire in 2012. Adamant that they would not leave this picturesque setting, which housed two acres of garden, they decided to re-build their home and JELD-WEN were recommended to supply their joinery products.

The farmhouse took three weeks to take down, following which it was rebuilt using oak and original materials, including beams and bricks from the chimney that complemented six bedrooms, and bathrooms and five reception rooms.

The family also opted for a bespoke Chamfered oak staircase from JELD-WEN's prestige oak range to create an immediate impressive of a grand entrance.

Simon Barron, Sales Representative at JELD-WEN, said:

"Despite the unfortunate circumstances in which the family came to use JELD-WEN products, this was a fantastic project to be a part of. We knew how much this rebuild meant to the family so we made sure they had all the necessary information to choose the products that best suited them. We also supported the builders to ensure that they had both the knowledge and information required to handle and fit JELD-WEN products, particularly as oak is extremely heavy to work with."

Perownes Farm fact sheet	
Project:	16th century farmhouse rebuild after fire
Location:	Blofield, Norfolk
Contractor:	Darrin Moore Builders
Products:	<ul style="list-style-type: none"> • Canberra Folding Sliding Patio Doors • Oak Stormsure Windows • Oakfold Patio Doors • Chamfered Standard Staircase

The Rogerson family, said:

"JELD-WEN was fantastic throughout this entire project. Not only did they provide a very good service, but the quality of its products was exceptional."

"This was a very emotional project for all of the family, but JELD-WEN's support helped everything run so smoothly. Two years after the fire, it's great to feel so settled again in such a beautiful home."



For project support email us at projectsuk@jeldwen.com, or for more case studies visit the website

HOPE STREET

JELD-WEN, the leading manufacturer of timber windows, doors and stairs was chosen to supply fire protected timber stairs for a pioneering student accommodation development in Liverpool.

The Hope Street site was a former 1867 hospital which was previously demolished and has now seen one of the biggest development projects delivered in Liverpool's historic Georgian Quarter.

The build itself was of particular significance with a volumetric construction system being used, which is not usually available in the UK. Each building was constructed with highly insulated, FSC certificated timber frame modules which were manufactured and delivered on site fully fitted, decorated to a high standard and ready wired and plumbed for all services. The stairwells were created by the walls of each module converging to create a rectangular shaft through the building where the stairs could later be installed.

Timber stairs were specified for all residential levels, but it was crucial that these were fire protected communal stairs due to the multi-occupancy nature of the building. JELD-WEN is the first and only volume UK timber stairs manufacturer to be certified by the BRE Loss Prevention Certification Board (LPCB) for fire-protected timber stairs through the BWF Stair Scheme. The LPCB tests and verifies designs, performance, manufacturing process and quality assurance throughout manufacture to establish whether the timber stairs are serviceable and an effective means of escape, even after an extremely hazardous fire.

In addition, JELD-WEN also faced the challenge that the stairs supplied were for a seven storey building which is higher than normally specified for timber stairs.

Roy Anderson, Technical Manager at JELD-WEN stairs said:

"Despite the challenging nature of this project, The Hope Street development was a fantastic project to be a part of. Our team at JELD-WEN stairs worked closely with building control to ensure that the stairs we supplied would meet the Building Regulations with flying colours."

Hannah Mansell, Manager of the BWF Stair Scheme, says:

"The specification of BWF Stair Scheme accredited stairs was a wise move in this challenging and innovative build. The scheme promotes effective design and reliable manufacture, developing guidance where standards and regulations are in conflict, and ensuring best practice advice is passed to installers to reassure that such products consistently meet the relevant performance requirements for loading, deflection and fire resistance where needed."

"The standard expected of BWF Stair Scheme members for their stairs is extremely high to ensure quality and safety. There is no straightforward method for Building Control to verify that a stair has been manufactured correctly and complies with the relevant standards and Building Regulations, other than looking for the Stair Scheme badge."

Hope Street fact sheet

Project:	339 room student accommodation development
Location:	Hope Street, Liverpool
Client:	Buildbase, Gloucester
Contractor:	Nordic Construction UK Ltd
Architect:	Hester Architects
Products:	Fire protected communal timber stairs

"The increasing use of timber stairs in multi-storey, multi-occupancy buildings such as this student accommodation project brings this into sharp focus. If a stair failed during an emergency evacuation, the consequences would be devastating. The common flight stair may act as one of the routes of escape in the event of fire. So it is vital that it is able to resist the effects of the fire and maintain its integrity. This demands a higher level of accreditation, which JELD-WEN has achieved through rigorous product development and testing."



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MARINE DRIVE

When Bovis Homes were looking to build a prestigious new housing development in Teignmouth, Devon, they called on JELD-WEN to supply the contemporary staircases for the properties that would provide that added wow factor.

The Marine Drive development of twenty six luxury homes is situated with far reaching sea views across the Teign estuary over to Shaldon and beyond. These high specification four and five bedroom homes have been thoughtfully designed to take full advantage of the impressive outlook, whilst providing that extra high quality finish throughout.

When specifying the stairs for this development Bovis Homes were looking for something to complement the stunning and stylish interiors.

Malcolm Gilmore, Technical Director at Bovis Homes, said:

“We pride ourselves on our high specification homes and as these large Marine Drive properties are of a different style to some of our other houses, we were looking for the stairs to reflect that alternative look and feel. The staircase in a property is an important feature that will set the atmosphere and ambience of the interior, so it was crucial that we selected a product that would make an impact.”

JELD-WEN's Casa staircase design from the Contemporary stair range was specified to provide a sleek and minimalistic look. The Casa staircase offers something completely different by combining Spanish style black iron spindles, with beautiful oak handrails and accessories.

Marine Drive fact sheet	
Project:	Marine Drive
Location:	Teignmouth, Devon
Client:	Buildbase, Gloucester
Contractor:	Bovis Homes
Architect:	• Casa contemporary staircase

Chris Fletcher-Smith, Account Manager at JELD-WEN said:

“The site was delighted with the product we supplied. The three storey houses with two flights of stairs brought about particular challenges which we were happy to assist with and the finished product is a joy to behold. The Casa staircase was brand new to our range at the time, so this project was a fantastic opportunity for us to showcase how great the new product looks..”



For project support email us at projectsuk@jeldwen.com, or for more case studies visit the website

CONTACT US

To send us your enquiry you can contact us as follows:

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