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Laidlaw handrail & balustrading

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Making spaces safe and accessible

Balustrading Solutions

The supply partner of choice

Laidlaw Balustrading Solutions, part of the Laidlaw Interiors Group, offers the most comprehensive package of standards-compliant solutions in the market

Laidlaw Balustrading Solutions maintains its position as market leader in the supply and installation of bespoke handrail and balustrading solutions through outstanding levels of standards compliance, product and service quality and the development of a close working relationship with architects and contractors.

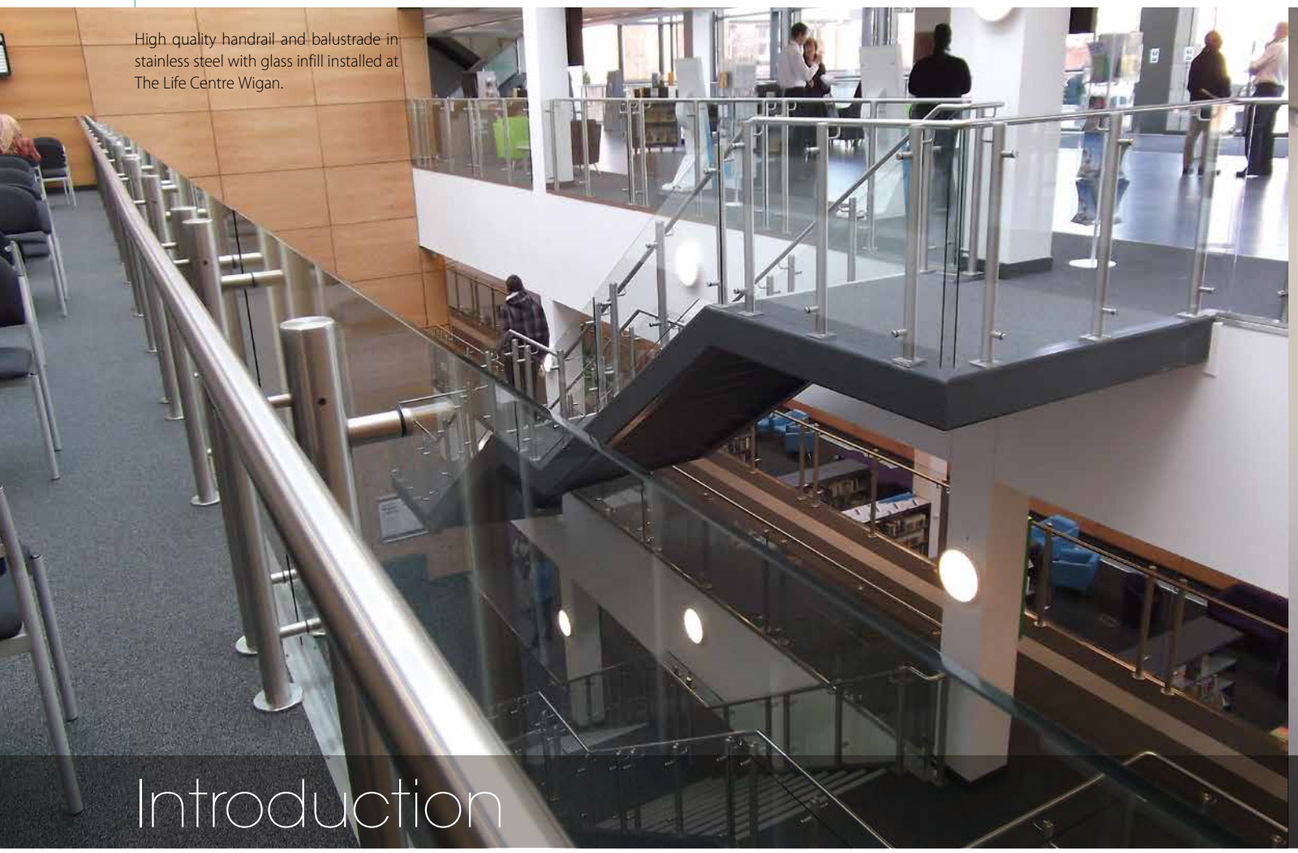
Compliance with all aspects of Building Regulations, British Standards guidance and recommendations for structural stability, safety and accessibility come as standard with all Laidlaw Balustrading Solutions systems. Our technical support staff are readily available at all stages of the specification, design and supply process to advise on all aspects of system design.

When choosing Laidlaw Balustrading Solutions as your supply partner you can be assured of the highest level of service, technical support and ultimately the highest quality installation available in the market.

Contents

Modular handrail and balustrading solutions in stainless steel, timber, nylon and structural glass to suit all applications

Contents



High quality handrail and balustrade in stainless steel with glass infill installed at The Life Centre Wigan.

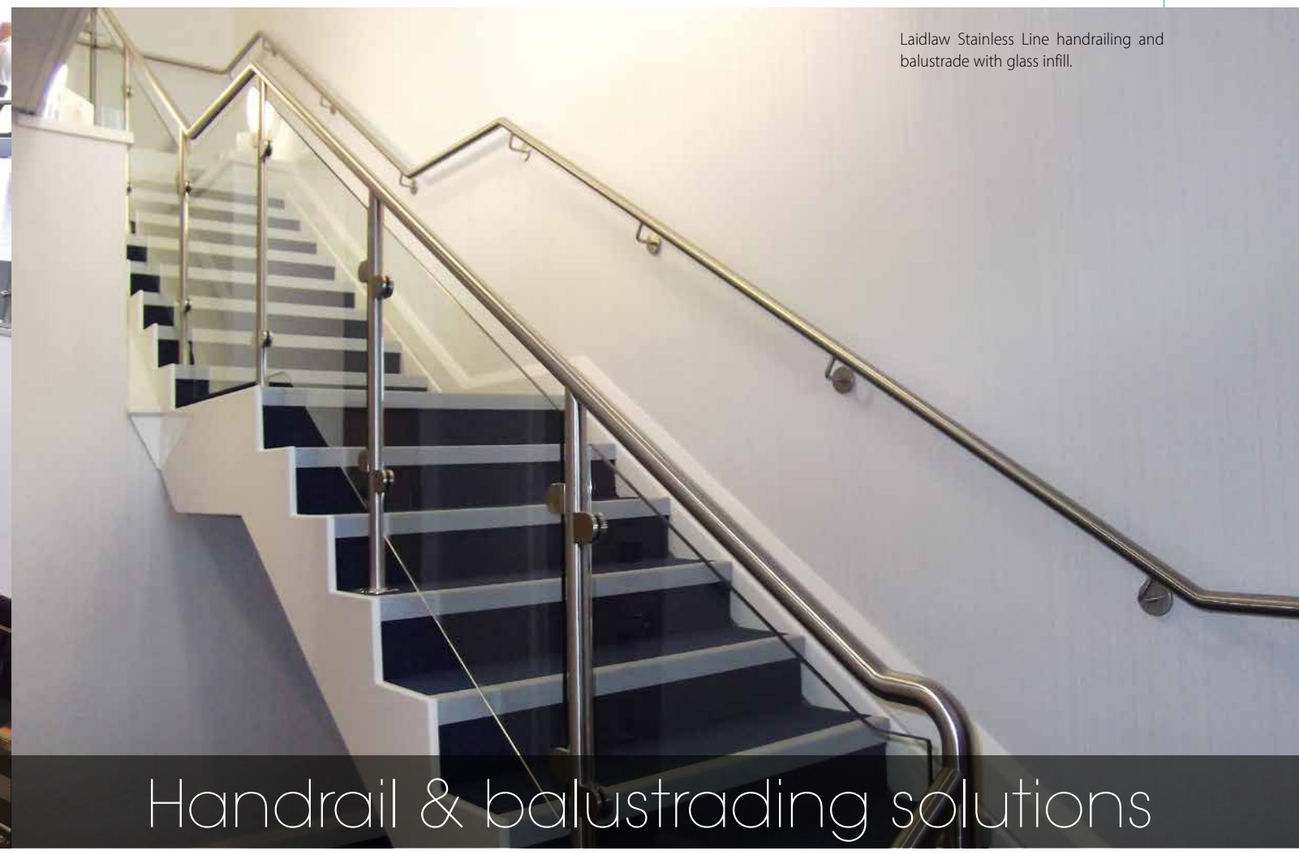
Introduction

The installation of a good quality handrail and balustrade system can have a significant effect on the way we interact with the built environment

The installation of a well designed handrail and balustrade system, using quality materials and construction enhances the visual and tactile nature of a building and influences the way in which the building is perceived as a welcoming and comfortable place to be.

It is easy to underestimate the practical contribution a well designed handrail can make, particularly to elderly or less mobile individuals. It will have an impact on how accessible the building is and has a direct bearing on the health and safety of everyone who uses it.

Even in the more temperate parts of the UK, an external metal handrail can become extremely forbidding during the winter months. For some, including the 10 million Reynauds Disease sufferers in the UK, the touch of a cold handrail can be a painful process, causing a natural reluctance to use the handrail. Choice of materials is an important aspect therefore and unlike the cheaper 'on-site' constructions offered by some other manufacturers, the factory engineered quality of a Laidlaw Balustrading Solutions system offers a more practical, sympathetic and aesthetically pleasing option.



Laidlaw Stainless Line handrailing and balustrade with glass infill.

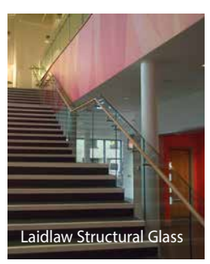
Handrail & balustrading solutions

Laidlaw Balustrading Solutions offer five fundamental handrail and balustrade systems, precision manufactured using high grade materials which will enhance a wide range of interior styles and applications:

- Laidlaw Nylon Line – using 4mm thick nylon-sleeved galvanised steel components
- Laidlaw Timber Line – using timber rails with stainless steel or nylon components
- Laidlaw Stainless Line – precision manufactured stainless steel
- Laidlaw Combi Line - combining, nylon and stainless steel
- Laidlaw Structural Glass - sophisticated system using glass as the support structure

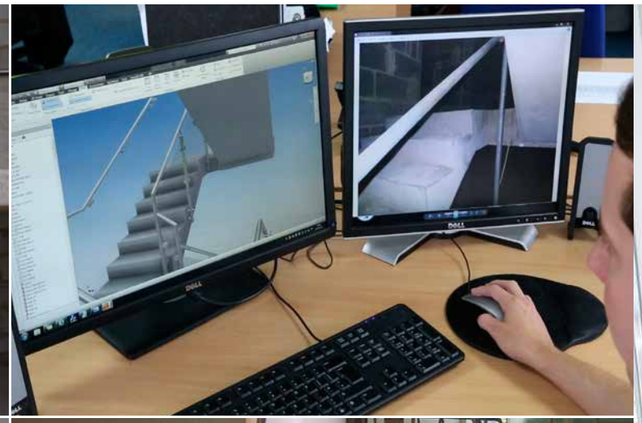
Laidlaw Nylon Line

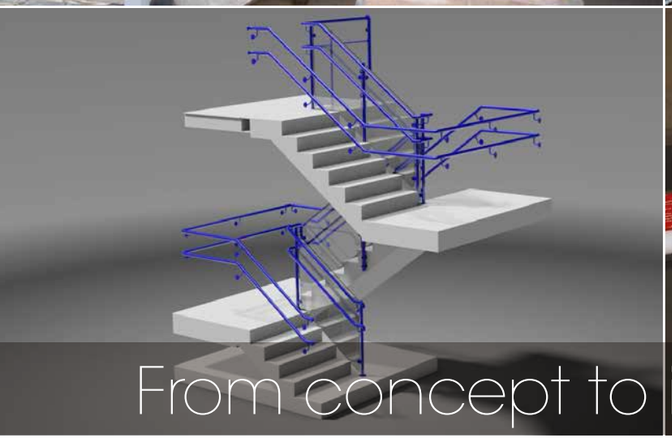
Laidlaw Timber Line



Laidlaw Structural Glass

Laidlaw Combi Line





From concept to installation

A Comprehensive Service and Quality Brand

Unlike many other handrail and balustrade providers our systems are supplied as a complete package, from initial site survey to detailed design, producing a bill of quantities and through to full installation. Laidlaw Balustrading Solutions trained staff are always on hand at every stage of the process to give advice on all aspects of specification, legislation and best practice guidance to ensure each project reaches the optimum level of quality, finish and performance.

Guidance on regulations, standards and legislation

Laidlaw Balustrading Solutions trained staff can offer guidance on all relevant aspects of Building Regulations and legislation including all aspects of accessibility in accordance with The Equality Act.

Design and detailing

Having selected the most appropriate system to suit the client's practical and aesthetic requirements, we will design the most cost effective system, produce a detailed specification and schematics of each handrail or balustrade.

Manufacture

From the schematics of each system we will produce detailed drawings for the bespoke manufacture of each system. The componentised nature of the Laidlaw Balustrading Solutions systems ensures:

- Stock of key components ensures quick delivery
- Factory assembly of large sections enables quick installation, minimises joints and welds and produces accurate bends and high quality finish
- Ensures all components are recyclable

Installation

As the final stage in the process from site survey, through design and precision manufacturing, Laidlaw Balustrading Solutions offer a complete installation service for their factory-assembled handrail and balustrade systems. By adopting the best principles of supply chain management and using specialist fixing teams, Laidlaw Balustrading Solutions ensure that the final installation is in strict accordance with the original design.

BIM capabilities

Our systems are all BIM ready and each handrail or balustrade specification can be supplied with data suitable for inputting into architect's BIM database.

CPD

RIBA approved CPD's entitled *'Making spaces safe and accessible'* are available. Please contact Laidlaw Balustrading Solutions for further information on: **01902 600420**

Laidlaw Timber Line balustrading with stainless steel supports and glass infill panels at St. Oswalds Hospice, Gosforth, Newcastle-upon-Tyne.

Handrail & balustrade system summary

LAIDLAW NYLON LINE

Material – 4mm Polyamide (PA) sleeve on galvanised steel core.

Properties:

- High fracture resistance, high strength and thermal stability
- Smooth and brilliant surface with exceptionally high resistance to abrasion
- Coloured throughout
- High resistance to most solvents, chemicals, cleansing agents and disinfectants
- No electrostatic charge and does not attract dust
- Conforms to the requirement of BS 8300 requiring that handrails should not be cold to the touch - 68 times warmer than stainless steel and 950 times warmer than aluminium
- Environmentally safe - cadmium and lead free colours
- Physiologically harmless, compliance with requirements of food law in Europe and USA (inert to bacteria)
- Completely recyclable
- Suitable for 0.74kN/m category loading (see page 22)

LAIDLAW TIMBER LINE

Mixed material combinations using a system of stainless steel or nylon supports and connectors.

Properties:

- Combination of timber rails with stainless steel or nylon supports and connectors
- Stainless steel support system gives high stability and long lasting performance
- Timber and stainless steel combination uses the strength and durability of stainless steel with the beauty and warmth of timber
- Timber and nylon combination has the inherent beauty and feel of timber rails with the additional colour option of nylon supports and connectors
- Suitable for 0.74kN/m category loading (see page 22)

LAIDLAW STAINLESS LINE

Material - Stainless steel with a satin polished 320 grit finish

Properties:

- High mechanical strength, dimensionally stable and nearly indestructible
- High stability and durability suitable for areas subject to high levels of use and abuse
- Very good resistance to atmospheric corrosion and chemical corrosion (detergents and cleansing agents)
- High resistance to abrasion
- Very easy to clean and to disinfect
- Suitable for 0.74kN/m and 1.5kN/m category loadings (see page 22)

Handrail & balustrade system summary

LAIDLAW COMBI-LINE

Combining the structural stability of stainless steel uprights with nylon rails.

Material - Rails are 4mm solid Polyamide sleeve over a galvanised steel core.

Material - Uprights are Stainless steel with a satin polished 320 grit finish in 40mm or 60mm diameter depending on loading.

Properties:

- Physical properties of the nylon handrailing as for Laidlaw Nylon Line
- Physical properties of the support structure as for Laidlaw Stainless Line
- Suitable for 0.74kN/m, 1.5kN/m and 3kN/m category loadings (see page 22)

LAIDLAW STRUCTURAL GLASS

Materials - Structural toughened glass with stainless steel capping and handrail

This beautiful balustrading solution is ideally suited to high end architectural applications where the simplicity of the structure and free open aesthetic are required. It also provides a continuous glass barrier which makes it ideally suited to areas where children are likely to be present

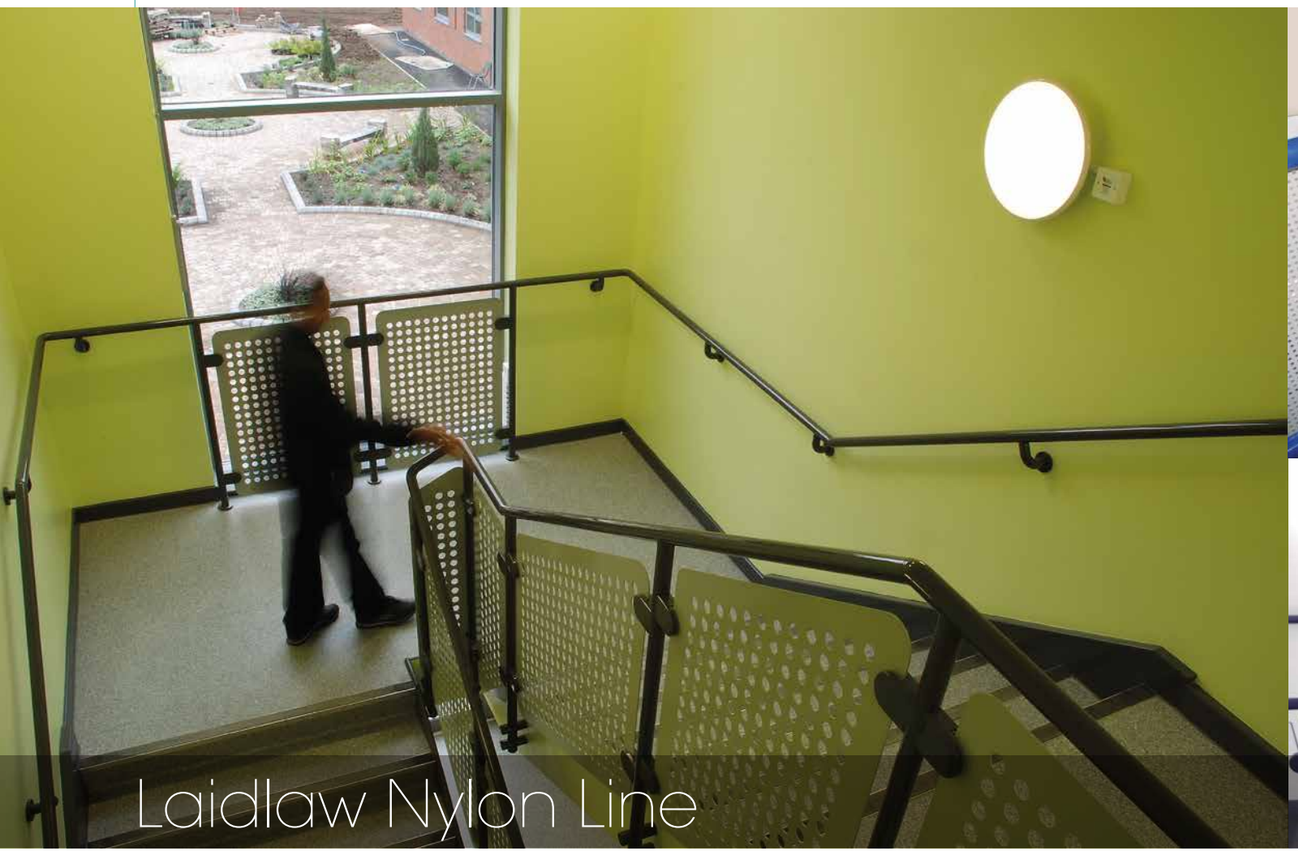
Properties:

- Continuous glass structure allows for free run of handrail or without handrail using laminated glass
- Simple lines with uninterrupted view through balustrade
- High levels of safety with minimal gaps
- Handrail available in stainless steel or timber
- Nylon handrail available with offset supports
- Suitable for 0.74kN/m, 1.5kN/m and 3kN/m category loadings (see page 22)

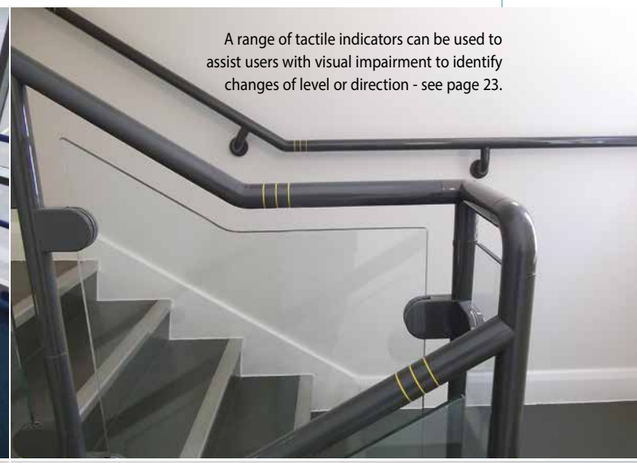
MARKET SECTOR APPLICATIONS

Through considerations of aesthetics, materials, numbers or frequency of use, use by members of the public, internal or external, each system is particularly (but not exclusively) suited to the following market sector applications.

	Stainless Line	Nylon Line	Timber Line	Combi Line	Structural Glass
Residential	✓		✓	✓	
Healthcare	✓	✓	✓	✓	✓
Education	✓	✓		✓	
Commercial	✓		✓	✓	✓
Transport	✓	✓		✓	
Retail	✓			✓	✓



Laidlaw Nylon Line



A range of tactile indicators can be used to assist users with visual impairment to identify changes of level or direction - see page 23.

Laidlaw Nylon Line

The Laidlaw Nylon Line combines the structural strength and non-corrosive nature of a galvanised steel core with the pleasant feel and permanent colour of a 4mm thick nylon sleeve

Laidlaw Nylon Line provides one of the most effective ways of complying with all aspects of the guidance in Approved Document M in relation to The Equality Act. The nylon material used has a low thermal conductivity and therefore is not cold to the touch, a situation which at its most acute is linked to Reynauds syndrome which can cause pain and problems with hand function.

Handrail construction features a fully galvanised tubular steel core with a solid nylon sleeve 40mm diameter with a 4mm wall thickness. A variety of wall fixing bracket options are available with straight supports and 90° bends.

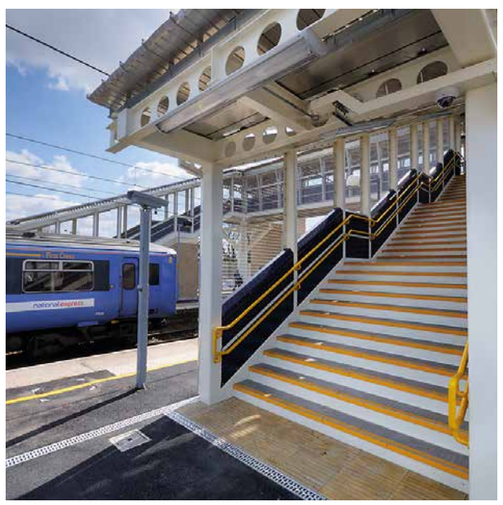
Handrail ends can be with a 90° bend return to the wall with flat end cover cap or with a 90° bend return connected to the wall with or without rose fixing.

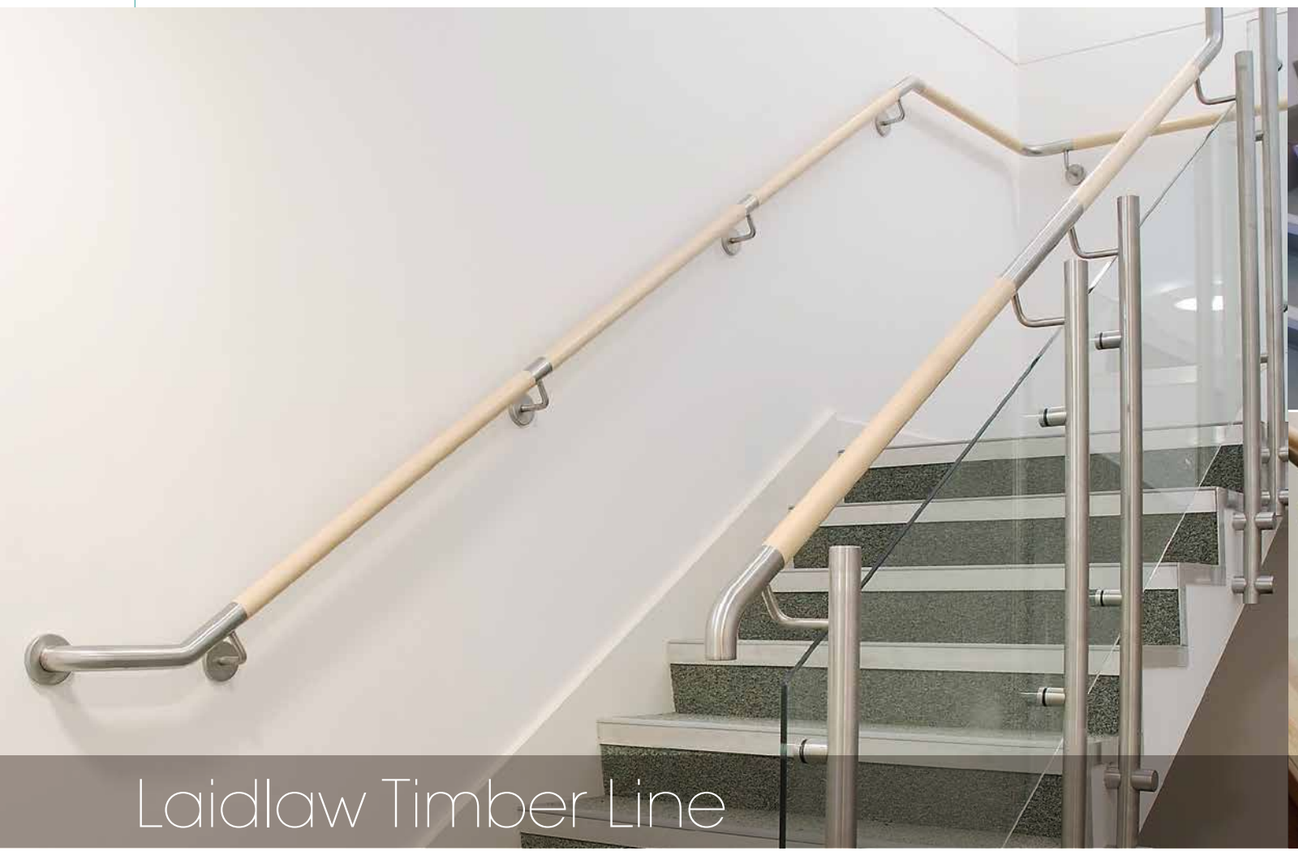
The handrail is supplied pre-assembled, including all corner pieces, connection elements, screws and fixings.

For colour and infill options please refer to pages 20 & 21.

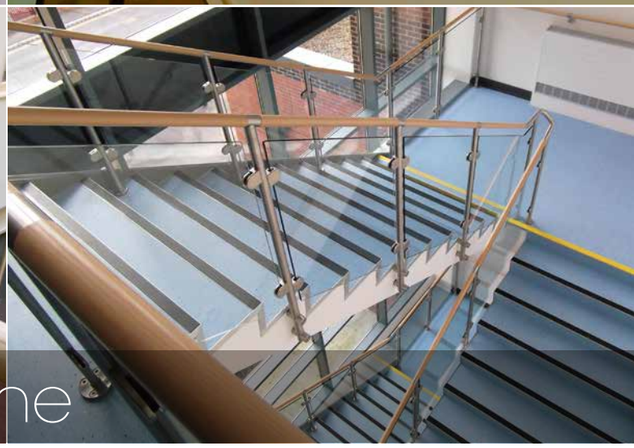
The Laidlaw Nylon Line system is capable of a wide range of colours and construction options including the following:

- Handrail terminations with 90° bends return to wall or floor
- In line or offset intermediate supports
- Factory produced curved horizontal rails
- Wide range of panel supports and wall supports
- Multiple options for upright mounting
- Wide range of infill materials, intermediate rails or tension wires
- Tactile indicators for visually impaired users
- Optional anti-slip textured grip





Laidlaw Timber Line



Laidlaw Timber Line

Laidlaw Timber Line provides the specifier with the ideal blend of traditional and modern styles, combining the crisp clean look of stainless steel or the warmth of nylon with the inherent beauty of timber

Timber Line systems are characterised by the use of stainless steel or nylon uprights and components with timber handrails.

The straight handrail sections are 40mm diameter solid beech as standard (alternative materials include ash, oak, maple). All handrails are A-grade material without red core, steamed and kiln dried, with a clear polyurethane surface finish.

A variety of wall fixing brackets, rail ends and connectors are available straight or with 90˚ bends in tubular stainless steel with a satin polished finish. Alternatively, fittings and uprights can be supplied in coloured nylon.

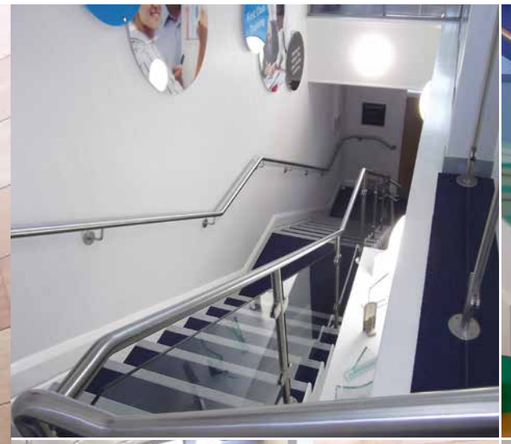
All handrails are supplied pre-assembled, including all corner pieces, connection elements, screws and fixings.

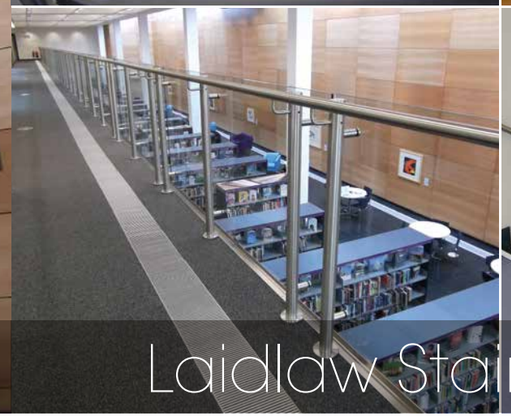
For material and infill options please refer to pages 20 & 21.

The Laidlaw Timber Line system is capable of a wide range of material and construction options including the following:

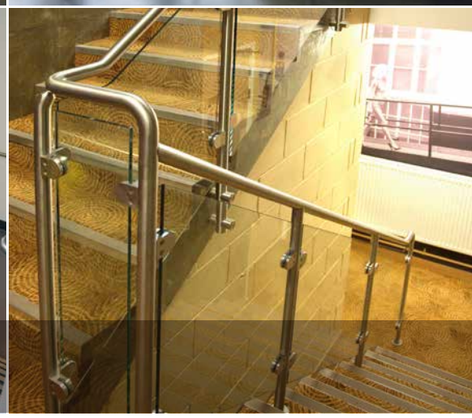
- Handrail joints and components in stainless steel or nylon
- In line or offset intermediate supports
- Wide range of solid timber rails
- Wide range of infill panel supports and wall supports
- Multiple options for upright mounting
- Wide range of infill materials, intermediate rails or tension wires
- Tactile indicator for visually impaired users

Laidlaw Stainless Line





Laidlaw Stainless Line



The Laidlaw Stainless Line handrail and balustrading systems achieve the cool, sleek look often favoured in the design of modern buildings

This high quality engineered system is often used to complement the stainless steel finish of other elements of the building such as lighting and architectural hardware.

The straight or curved handrail sections are 40mm or 32mm diameter as standard with a fine satin polished finish.

A variety of wall fixing brackets, rail ends and connectors are available straight or with 90˚ bends in tubular stainless steel with a satin polished finish.

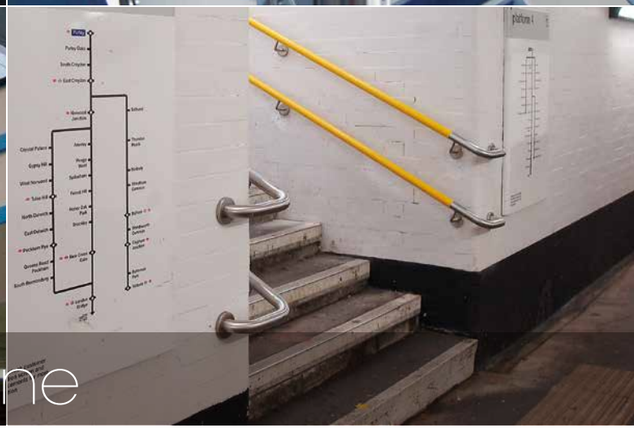
All handrails are supplied pre-assembled, including all corner pieces, connection elements, screws and fixings.

For infill options please refer to page 21.

The Laidlaw Stainless Line system is capable of producing long and complex continuous handrails using high quality componentry. A range of construction options are available including the following:

- Handrails can be straight or curved (horizontal only)
- In line or offset intermediate supports
- Wide range of infill panel supports and wall supports
- Multiple options for upright mounting
- Wide range of infill materials, intermediate rails or tension wires
- Tactile indicator for visually impaired users

Laidlaw Combi Line



Laidlaw Combi Line

The Laidlaw Combi Line handrail and balustrading systems achieves the cool, sleek look often favoured in the design of modern buildings

This high quality engineered system is often used to complement the stainless steel finish of other elements of the building such as lighting and architectural hardware.

The straight or curved horizontal handrail sections are 40mm diameter nylon or stainless steel.

A variety of wall mounting brackets, straight or 90˚ return rail terminations, straight and angled connectors are available in stainless steel with a high quality satin polished finish.

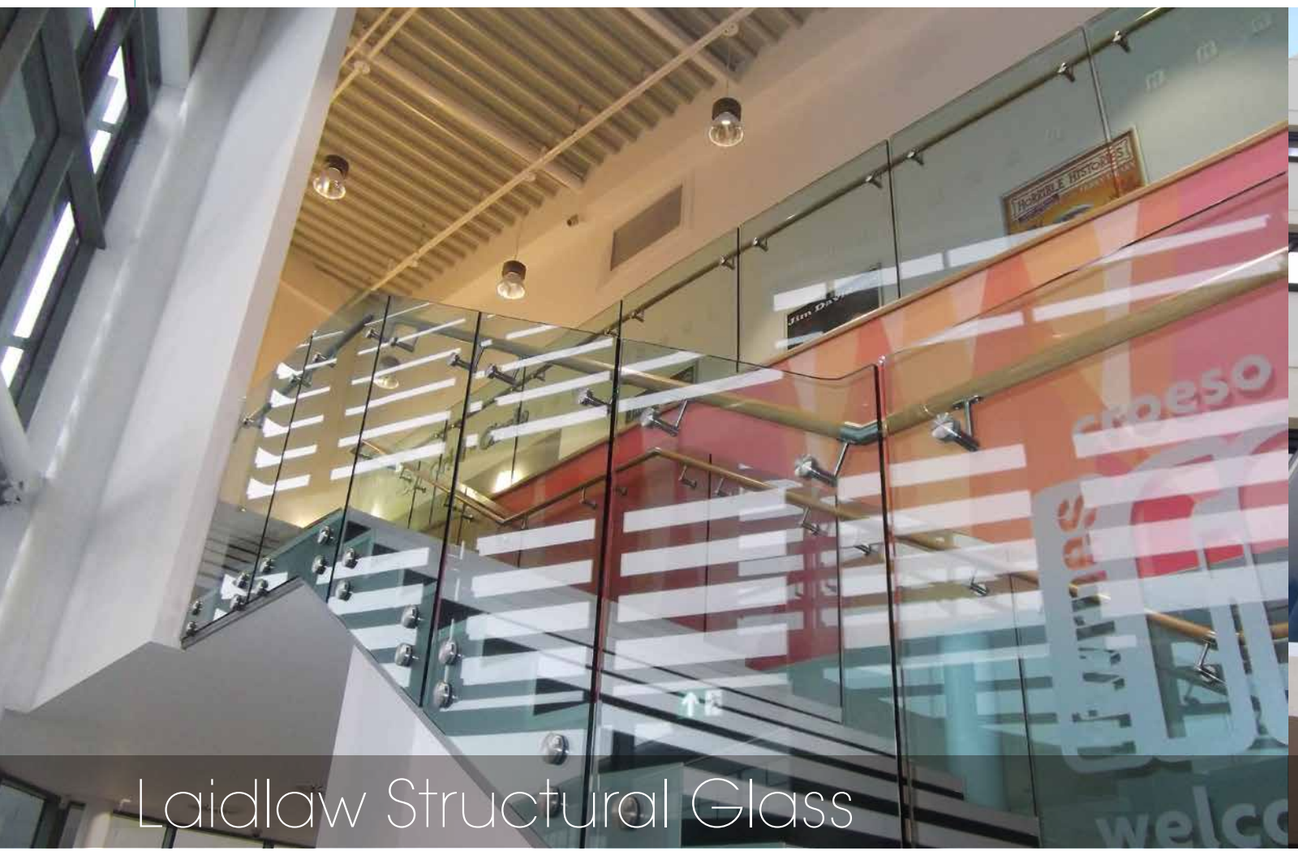
Uprights are either 40mm or 60mm diameter satin polished stainless steel depending on the loading requirement.

All handrails are supplied pre-assembled, including all corner pieces, connection elements, screws and fixings.

For material and infill options please refer to pages 20 & 21.

The Laidlaw Combi Line system is capable of producing long and complex continuous handrails using high quality componentry.
A range of construction options are available including the following:

- Handrails can be straight or curved
- Straight or offset intermediate supports
- 40mm or 34mm handrail diameters
- Wide range of infill panel supports and wall supports
- Multiple options for upright mounting
- Wide range of infill materials, intermediate rails or tension wires
- Tactile indicators for visually impaired users
- Optional anti-slip textured grip
- Up to 3kN/m loading



Laidlaw Structural Glass

Laidlaw Structural Glass

The Laidlaw Structural Glass system is a perfect example of a technical solution providing exceptional levels of visual simplicity combined with high levels of safety

The desire to create a system which is based on the concept of a free-standing balustrade with no visible uprights has led to the creation of a system with a high degree of safety & security. The ability to minimise gaps by the use of a continuous glass support structure negates the chances of a child squeezing through or climbing onto the balustrade.

The system is available with a number of handrail possibilities in stainless steel or timber and the structural glass element can be treated with a variety of tints or manifestations

For material and infill options please refer to pages 20 & 21.

The glass balustrade

The toughened glass balustrade is the structural element that supports the top rail, which can be of solid timber or stainless steel with a satin polished finish. In each case, the top rail has a groove in the underside to locate onto the glass balustrade.

Alternatively an offset timber, stainless steel or nylon handrail with separate supports may also be incorporated.

At the base, the glass is clamped between steel sections which are bolted to the floor structure following the principles set out in BS 6180 on free-standing toughened glass balustrades.

The Laidlaw Structural Glass system has the following features:

- Handrails/capping rails can be stainless steel or timber
- Glass is clamped between steel sections bolted to the floor or side fixed with stainless steel bosses
- Designed to meet the most demanding line loading requirements of BS 6180:2011
- Suitable for internal or external applications
- Multiple options for glass treatment
- Complies with the guidance of Approved Doc. K

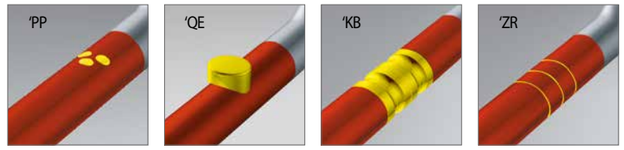
System options, finishes and special features

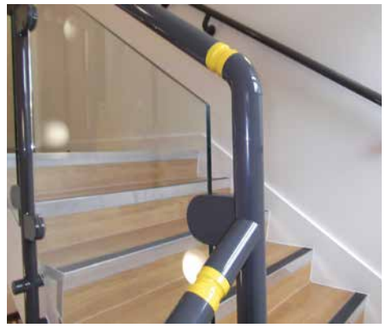
Having selected the most appropriate system for your application, a number of options are available for handrail materials, colour, infill panel types and finishes.

Tactile Indicators

Although not included in Building Regulation guidance, tactile indicators can help to make a building more 'inclusive'. When incorporated into handrails, they can indicate to a visually impaired person the presence of the first and last riser on a staircase as well as floor levels. Braille indicators can also be included to highlight a floor number.

Different types of indicator are available, as projecting buttons, rings or grooves.





Coloured Nylon

All nylon handrails, uprights and connectors are available in a range of solid colours. The colours are fully compatible with the Normbau range of coloured nylon architectural ironmongery allowing specifiers to match other hardware elements in the building.

19 White
NCS S 0500-N
RAL-DS 000 95 00
RAL 9016


67 Manhattan
NCS S 2502-Y
RAL-DS 080 70 05
RAL 7038


18 Dark Grey
NCS S 7500-N
RAL-DS 000 35 00
RAL 7043


16 Black
NCS S 9000-N
RAL-DS 000 15 00
RAL 9005


63 Slate Blue
NCS S 4020-B
RAL-DS 240 50 15
RAL 5014


11 Blue
NCS S 3560-R80B
RAL-DS 270 30 40
RAL 5002


37 Dark Blue
NCS S 7020-R80B
RAL-DS 270 20 25
RAL 5003


13 Green
NCS S 5540-G
RAL-DS 160 30 38
RAL 6016


22 Yellow
NCS S 1080-Y10R
RAL-DS 080 80 90
RAL 1023


12 Red
NCS S 2570-R
RAL-DS 030 30 45
RAL 3003

Timber handrails

A quality timber, steamed, kiln dried and surface treated with colourless lacquer. Timber is used in combination with Nylon and stainless steel elements for indoor handrails and balustrades. Other timber handrails are also available, in American White Oak, European Ash and Maple.


Beech


*Maple


*American White Oak


*European Ash

*available to special order

System options, finishes and special features

Types of infill

Balustrade infill is available in three basic forms:

- Bottom rails & midrails
- Solid infill panels using a variety of materials
- Tension cables

Infill panels

The most common infill material is 10mm toughened glass. It maintains an open character and helps to maximise the amount of light which falls onto the staircase. However, in some circumstances a more enclosed feel is required and several forms of solid infill panels are available including perforated metal sheet and solid laminate which gives possibilities of colour and finish combinations to be achieved.

Toughened glass colour options

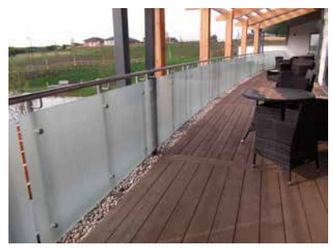
Manifestations

Glass infill panels can be enhanced further by the use of manifestations applied to the glass to fulfil a variety of purposes including:

- Full or partial screening but still allow light passage
- To distinguish surfaces for visually impaired users
- Information, for example at an entrance
- Logos or other identification symbols

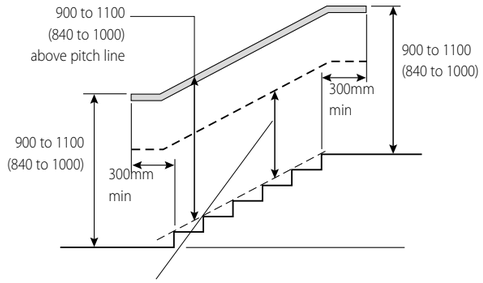
Manual gate access

Sections of balustrade can be adapted to provide access, manually activated.



Technical design details and fixing methods

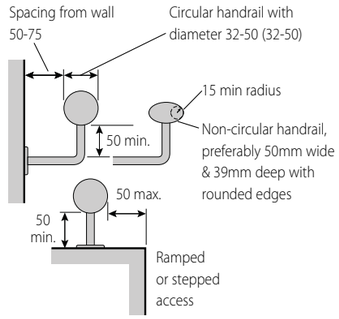
Handrail heights for steps and stairs



600 where a second handrail is provided for children or people of short stature – install only where there is a full height structural guarding to prevent accidents if the handrail were climbed by a child.

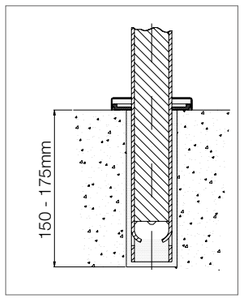
Note: Dimensions for Scotland in brackets (in mm).

Handrail design



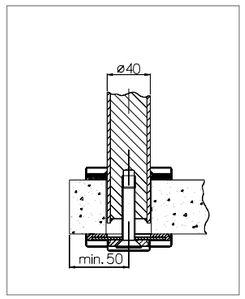
Note: Dimensions from BS 8300 in brackets (in mm).

Minimum horizontal imposed line loads for balustrades Load conditions	U.D horizontal line load [kN/m]	U.D load on the infill [kN/m²]	Point load on infill [kN]
Domestic and residential, office and work areas. Areas without obstacles for moving people and not susceptible to overcrowding.	0.74	1.0	0.5
Areas where people might congregate. Areas with tables or fixed seating. Retail areas and vehicular.	1.5	1.5	1.5
Areas susceptible to overcrowding.	3.0	1.5	1.5



Type A

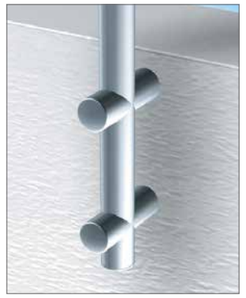
Anchor fixing supplied with anchor and rose. Dimensions may vary according to loading requirements.

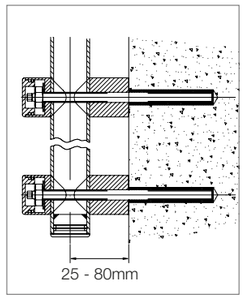


Type B

Bolt-through fixing with steel reinforced roses.

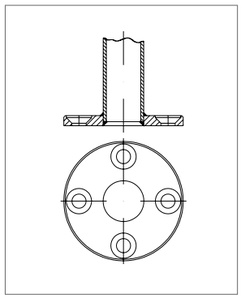
Supplied with roses and screws.





Type C

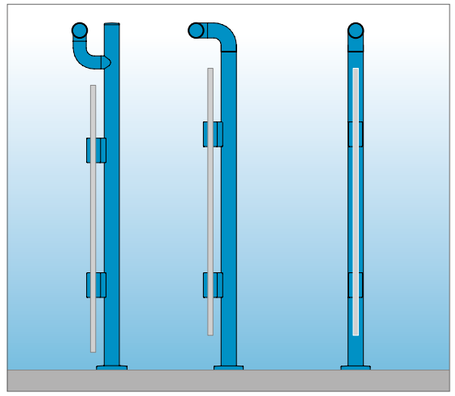
2-point side fixing with clearance and spacing as shown above.

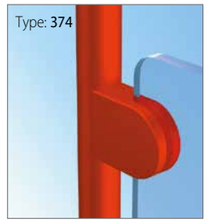


Type E

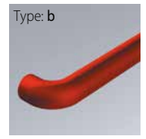
Plate fixing for securing uprights onto a variety of structures. Dimensions of plate may vary according to loading requirements.

In-line and offset handrail options

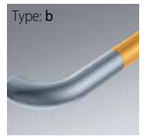




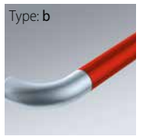
Laidlaw Nylon Line



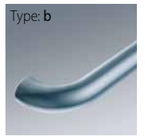
Laidlaw Timber Line



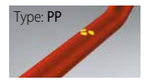
Laidlaw Combi Line

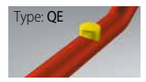


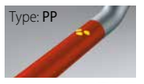
Laidlaw Stainless Line

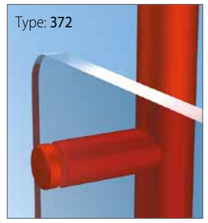


Tactile indicators



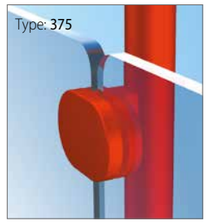


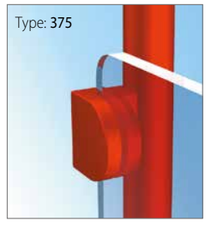


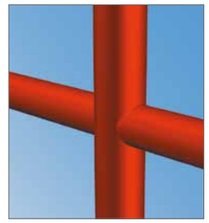


Midrails

Midrails are available in nylon in 40mm and 34mm diameter. Stainless steel midrails are available in 40mm and 26mm diameter.







Technical details - NBS Specifications - Balustrades (Section L30 clause 560)

To help specify the Laidlaw Balustrading Solutions range of handrail and balustrade systems, the following specification paragraphs are provided in a format compatible with NBS. These are also available electronically on the Laidlaw Balustrading Solutions website at **www.balustradingsolutions.com**, on NBS Plus or by contacting the Laidlaw Balustrading Solutions Enquiry Line on **01902 600420**.

The text shown below is an example NBS specification for a Laidlaw Stainless Line system. Those paragraphs highlighted may be varied in accordance with each system or to suit alternative options, for example upright fixings method or infill panel variations. Please refer to the alternative clauses shown and insert as required.

PRODUCT REFERENCE: Laidlaw Stainless Line – Balustrade to be 40mm o/d x 2.0mm Satin brushed stainless steel with concealed connections in running lengths. - **Standards**: Handrail to be removable to address Part 9 of BS5395 that states that *"The design of handrail and balustrade should allow easy replacement of damaged components, in a manner that minimizes the risk of theft and vandalism."* ADM, BS 8300 - **Posts**: Uprights to be 40mm x 4.0mm thick Satin brushed stainless steel extended for concrete anchor fixing ref: 1.12A, grouted into pockets using certite mortar. - **Infill**: Infill panels to be 10mm thick clear toughened float glass with radiussed corners and flat polished edges. - **Standard**: BS EN 12150 - **Fixings**: concrete anchor fixing ref: 1.12A, grouted in pockets using certite mortar. Pockets to 150mm deep x 60mm dia to be prepared by main contractor to our pre-determined setting out positions - **Performance Verification**: Stainless Steel to be satin polished effect 320 grit finish - All fixings to be mechanical joints and no welded joints. - **Design Criteria** – Design liability to be with the manufacturer, drawings to be submitted for approval before manufacture. - Structural Calculations required to be provided (Generic test certificates not acceptable). Structural testing to address shear, moment and deflection capacities. - Deflection to be less than 25mm at highest point of Balustrade from top of fixing point BS 6180:2011:6.4.1 (Not less than 25mm at Design level) - **Product Reference**: NT A-s - **Lower Handrail**: to be 40mm o/d x 2.0mm Satin brushed stainless steel with concealed connections in running lengths connected to 14mm dia elbow supports ref: 14.90V - **Standards**: BS 8300 5.10.1 states that "a lower handrail will benefit people of short stature" - **Wall Fixed Handrail**: Handrail to be 40mm o/d x 2.0mm Satin brushed stainless steel with concealed connections in running lengths connected to 14mm dia elbow supports ref: 14.90V complete with rosettes at 1300mm centres. - **Product Reference** – NT IIc-s/40 - **British Standards and Building Regulations**: All in accordance with BS 8300, BS 6180, BS 5395, BS EN 12150 (European Standard), Building Regs Doc B, Building Regs Doc M, and Building Regs Doc K	Insert product reference and general description - see **[A]** page 25 Standards remain consistent for all systems Insert appropriate detail for post uprights - see **[B]** page 25 Insert appropriate infill options including solid infill panels, mid rails and tension wires - see **[C]** Insert upright fixing alternatives - see **[D]** page 25 Insert appropriate performance information - see **[E]** page 25 Design Criteria is consistent for all systems Insert appropriate product reference (contact Balustrading Solutions) Lower handrail is optional but recommended for full compliance with The Equality Act Insert appropriate detail for wall fixed handrail - see **[F]** page 25 Insert appropriate product reference (contact Balustrading Solutions) British Standards and Building Regulations are consistent for all systems

Technical details - NBS Specifications

[A] PRODUCT REFERENCE:

- Laidlaw Stainless Line (as shown opposite).
- Laidlaw Nylon Line

  Balustrade top rail to be 40mm o/d nylon with a 4mm wall thickness over a steel tube core of 32mm o/d x 2.0mm thick Galvanized steel tube core.
- Laidlaw Timber/Stainless Line

  Balustrade to be 40mm dia 'A' quality beech wood without foxiness steamed and kiln dried, surface treated with colourless lacquer, connected to 40mm o/d x 2.0mm Satin brushed stainless steel parts. (Please contact us for details for other timber variants).
- Laidlaw Combi Line

  Balustrade with removable top rail facility to be 40mm o/d nylon with a 4mm wall thickness over a steel tube core of 32mm o/d x 2.0mm.

[B] POSTS

- Laidlaw Nylon Line

  40mm o/d uprights with a 4mm wall thickness 32mm x 4.0mm thick Galvanized steel tube core
- Laidlaw Timber Line

  40mm o/d x 4.0mm thick satin brushed stainless steel uprights, extended for fixing using ... - *(insert fixing method).*
- Laidlaw Combi Line

  40mm o/d x 4.0mm thick satin brushed stainless steel uprights, extended for fixing using ... - *(insert fixing method).*

[C] INFILL - insert option for all systems

- Infill panels to be 10mm thick clear/grey/bronze/green float glass toughened to BS EN 12150 with radiussed corners and flat polished edges.
- Anti Vandal Panels to be 13mm thick solid laminate with radiussed corners and smooth edges.
- Infill panels to be 3mm thick perforated aluminium panels with 30mm dia. holes at 50mm centres with a 60mm clear border all round and 75% clear area. Polyester powder-coated. Held in position using panel holders to uprights.
- Mid rail(s) to be 34mm or 40mm o/d nylon with a 4mm wall thickness over a galvanised steel tube core of 26mm or 32mm o/d x 2.0mm connected to uprights (excluding stainless steel).
- Mid rail(s) to be 26mm, 32mm or 40mm o/d x 2.0mm brushed stainless steel connected to uprights. (stainless steel only).

[D] FIXINGS - insert option for all systems

- Type A Concrete anchor fixing ref: 1.12A, grouted in pockets using certite mortar. Pockets to 150mm deep x 60mm dia to be prepared by main contractor to our pre-determined setting out positions
- Type B Clamp through fixing ref: 1.12 B
- Type C Side fixing ref: 1.12 C
- Type E Plate fixing ref: 1.12 E

[E] PERFORMANCE VERIFICATION

- Laidlaw Stainless Line (as shown opposite).
- Laidlaw Nylon Line

  Nylon sleeve must be 4mm thick, nylon coated or powder coated will not be acceptable. All fixings to be mechanical joints and no welded joints.
- Laidlaw Timber/Stainless Line

  Stainless steel to be satin polished effect 320 grit finish. All fixings to be mechanical, no welded joints.
- Laidlaw Combi Line

  Nylon sleeve must be 4mm thick, nylon coated or powder coated will not be acceptable. All fixings to be mechanical, no welded joints.

[F] WALL FIXED HANDRAIL

- Laidlaw Stainless Line (as shown opposite).
- Laidlaw Nylon Line

  40mm wall fixed handrail to be 40mm o/d nylon with a 4mm wall thickness over a steel tube core of 32mm o/d x 2.0mm connected to 34mm dia steel cored nylon elbow supports ref. 34.90V complete with steel rosettes and clip on 70mm nylon cover caps at 1300mm centres. .
- Laidlaw Timber/Stainless Line

  Handrail to be 40mm dia A quality beech wood without foxiness steamed and kiln dried, surface treated with colourless lacquer, connected to 40mm o/d x 2.0mm Satin brushed stainless steel parts, supported on Satin brushed stainless steel 14mm dia elbow supports ref: 14.90V complete with rosettes at 1200mm centres.
- Laidlaw Combi Line

  Handrail to be 40mm o/d nylon with a 4mm wall thickness over a steel tube core of 32mm o/d x 2.0mm connected to 14mm dia brushed stainless steel elbow supports ref: 14.90V complete with rosettes at 1300mm centres.

PRODUCT REFERENCE:

Laidlaw Structural Glass system

Balustrade with fixed top rail 50mm o/d to be selected from one of two options:

- 50mm dia. solid timber, A quality, selected from Beech, American White Oak, European Ash or Canadian Maple, kiln dried, surface treated with colourless lacquer, with continuous groove for fixing to, ...
- 50mm o/d brushed stainless steel with continuous groove for fixing to, ...

  ... toughened or laminated glass, clamped between stainless steel sections bolted to the floor structure in accordance with BS 6180.

  (Please contact us for further advice).

Case Study - Kensington Health Care

The Kensington health care centre recently opened its doors to the public, the £5m facility is situated on a major strategic gateway to Liverpool city centre. The Kensington facility will provide patients with enhanced services including dental, pharmacy, immunisations, vaccinations and treatment rooms. Laidlaw Balustrading Solutions provided stainless steel balustrades with glass infill to the project, the continuous stainless steel rail guides and glass panels allowed for natural light to flood into the centre.

Case Study - Wigan Life Centre

The Life Centre is a multi-million pound public service and leisure hub in the centre of Wigan. Architects LCE / AStudio, main contractor Morgan Sindall and sub-contractor Parpac selected Stainless Line handrails and balustrades throughout both the north and south buildings.

"We have specified a wide range from the available Laidlaw products, including doors, glazed partitions and glass balustrades throughout the Wigan Life Centre Project. The robustness of their products and their performance criteria matched perfectly the client's aspirations for this PFI project.

Due to the nature of our design, in which transparency and spatial connectivity were key, the stainless steel balustrade system from Laidlaw offered a cost effective, whilst bespoke, solution for the continuous and clean glazing lines achieved. The Laidlaw team worked very close with us to resolve every technical situation we encountered".

Nick Gazanis - on behalf of Astudio Limited.

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