

SPECTRUM

MODULAR HANDRAIL AND BALUSTRADING SYSTEMS

NEAGO
accessibility
FOR ALL

Innovation from the beginning

Neaco is a company that, right from the beginning, has brought innovation to the architectural products market. Over the years our Spectrum range of nylon coated aluminium and stainless steel balustrade has been continually developed into its current form, providing versatile modular design and construction that meets every aesthetic requirement as well as the most rigorous performance demands. Neaco's design team has also expanded the range to include Spectrum structural glass applications.

Whether adding metallic sheen to an office entrance, eye-catching colour to a school stairwell, stylish looks to an apartment balcony or a smooth, comfortable handrail for a hospital facility, Spectrum provides a definitive architectural solution for a huge variety of commercial, residential, industrial, public and private developments.

Expertise at every stage

Our extensive in-house manufacturing resources and technical development facilities operate as part of an all-round quality culture to ensure that we are focused on quality from start to finish. Neaco's wealth of expertise can be provided at every stage, from site survey to design drawings and eventual installation by our dedicated team of fitters.

In the following pages of this brochure we will introduce the various Spectrum modular handrail and balustrade ranges, illustrating their many qualities with a series of examples highlighting their use in a wide range of construction sectors. Utilising a proven design concept in a wide range of configurations, these versatile systems add practicality to visual appeal in any built environment.

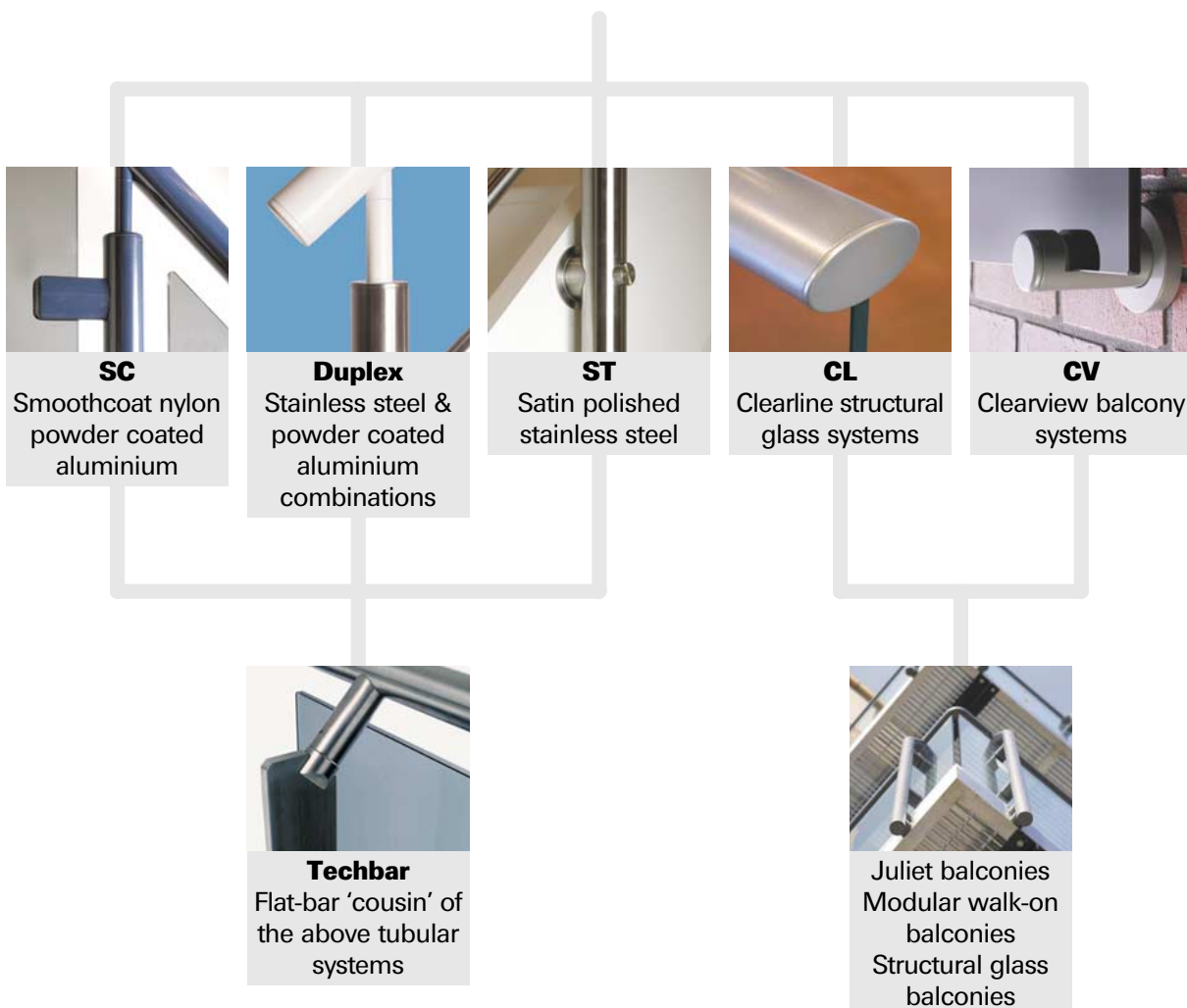


The Spectrum range of handrail and balustrade systems

Developed over many years with the expertise of Neaco's technical team, the evolution of our Spectrum Handrail and Balustrade range has produced a lineage of related systems to provide a broad choice of applications and design options. All share the high performance and aesthetic qualities that have characterized Spectrum from its inception.



SPECTRUM[®]
Handrail and Balustrade Systems





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Benefits and features

Spectrum systems provide a unique range of benefits which meet the most rigorous performance demands and design requirements:

- Durable and hard wearing qualities provide a maintenance-free installation
- Meets all relevant Building Regulations
- A comprehensive range of modular components and infills - versatile enough to meet virtually any design permutation
- Modular connection system that requires no welding and uses internal fixtures, providing smooth, clean lines for comfortable touch and high aesthetic value
- Components manufactured off-site to an exacting standard and delivered with full technical support service - advice and guidance provided before specification and after installation
- Bespoke components also available
- Spectrum balconies are extremely easy to install, by either your own construction crew or Neaco's team of fitters
- Glass-fronted balconies provide a superior appearance, a clear view out and maximum sunlight penetration





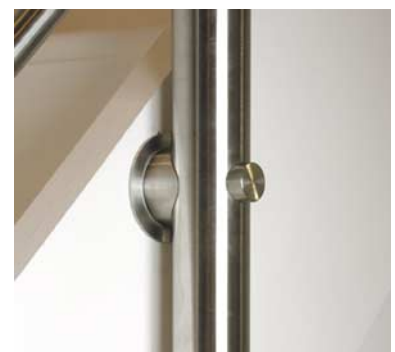
Design solutions across the SPECTRUM®

Spectrum balustrade in nylon powder coated aluminium



The nylon powder coating gives a beautiful satin smooth finish which is permanent, hard wearing and abrasion resistant. Handrails have excellent insulation properties, and are warm to the touch and comfortable to handle, even in the most extreme conditions. Available in a wide choice of standard RAL or contemporary metallic colours.

Spectrum balustrade in stainless steel



Sharing the versatile modular format of its nylon powder coated 'cousin', this high-specification system incorporates a similar range of design options with cast components in hand finished, satin polished stainless steel. System variations can be accommodated at the design stage to determine the most cost-effective solution.

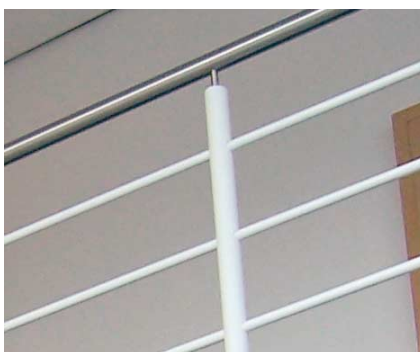
Our Spectrum balustrade, balcony and structural glass systems provide a comprehensive range of modular design solutions for both internal and external applications.

Clearline structural glass systems



Our new structural glass systems provide a high aesthetic solution combining smooth clean lines with maximum visibility and the durability to cope with high traffic areas for both internal and exterior applications.

Spectrum Duplex systems



The stainless steel and aluminium versions of Spectrum both provide a high aesthetic look and the two systems can be combined to provide an attractive contrast between the satin polished and nylon coated finishes.

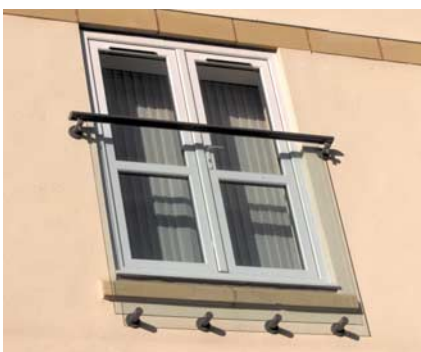
Clearview walk-on balconies



An easy-to-install solution to enhance the aesthetic value of any building whilst allowing ample sunlight into interiors.

Attractive aluminium flooring drains rainwater quickly to prevent pooling. Balustrade is manufactured from stainless steel or nylon powder coated aluminium with tinted or clear glass infills available to complete the high material and aesthetic quality.

Clearview Juliet balconies



Our glass-fronted Juliet Balconies provide attractively minimalist looks and allow occupants to enjoy the benefits of sunlight in safety and style. Extremely easy to install, with no stanchions needed, this ultra-stylish system is very adaptable with a nylon coated finish ensuring a rust-free, maintenance-free application that can handle the most demanding environments.



PROJECT: **Water's Edge, Cotswold Water Park**

CLIENT: **Lake 10 Developments**

SPECTRUM SYSTEM: **Aluminium balustrade SC**

SECTOR: **Residential**



Spectrum with glass infills has been specified at Water's Edge, a prestigious development of contemporary luxury homes in the heart of the Cotswold Water Park, Britain's largest wetland nature reserve. The system was chosen for stairways, mezzanine floors, balconies and decking overlooking the site's 28-acre lake. Its rust-free, maintenance-free powder coated finish was important for an installation so close to water.

PROJECT SPOTLIGHT

PROJECT: **WN1, Wigan**

CLIENT: **Dorbcrest Homes**

SPECTRUM SYSTEM: **Modular walk-on balconies CV**

SECTOR: **Residential**



The easy installation, contemporary aesthetics and overall manufacturing quality offered by the Modular Balconies range led to its specification at WN1, a major development of luxury apartments and mews and detached houses in Wigan from Dorbcrest Homes. The simplicity of the balcony design kept Dorbcrest's building looking clean and unimposed.

PROJECT SPOTLIGHT

PROJECT: **Tempo, Leeds**

CLIENT: **Britannia Developments**

SPECTRUM SYSTEM: **Juliet balconies CV**

SECTOR: **Residential**



The Spectrum Juliet balconies range is providing kerb appeal at Tempo, a prestigious scheme of luxury apartments near Leeds city centre. Britannia were very impressed by their glass fronted style, which is much more attractive than heavily railed balconies, whilst residents are benefiting from maximum sunlight penetration and a clear view out.

PROJECT SPOTLIGHT

PROJECT: Shorecliffe Rise, near Bury

CLIENT: Alcamay Homes

SPECTRUM SYSTEM: Modular walk-on balconies CV

SECTOR: Residential



The blend of stylish metallic looks and precision engineered quality which characterizes the Spectrum modular balconies range led to its extensive specification at Shorecliffe Rise, Alcamay Homes' prestigious development of luxury apartments near Bury. Alcamay Homes required contemporary aesthetics to fit the overall design of the scheme and Spectrum's combination of clear glass infills, aluminium decking and balustrade powder coated in a metallic finish provided the ideal visual effect.

PROJECT SPOTLIGHT

PROJECT: **Centurion Court, Tamworth**

ARCHITECT: **Haden Ritchie**

SPECTRUM SYSTEM: **Stainless steel balustrade ST**

SECTOR: **Commercial**



Spectrum stainless steel balustrading was used at Centurion Court, a prestigious commercial development in Tamworth comprising 25,000 square feet of new office facilities. The system was installed with a glass infill in the main staircase leading from Centurion Court's elegant reception.

PROJECT SPOTLIGHT

PROJECT: **Denaby Lane Industrial Estate, Doncaster**

CLIENT: **Marshall Construction, West Yorkshire**

SPECTRUM SYSTEM: **Duplex balustrade**

SECTOR: **Commercial**



Featured on a stairway in the office space of a light industrial unit, the installation provides an attractive contrast between a top rail manufactured from satin polished stainless steel and stanchions and rail infills manufactured from white nylon coated aluminium. Marshall Construction were very pleased with Neaco's contribution to the development, praising our ability to provide a cost effective design solution and fit it to a high standard, within budget and on time.

PROJECT SPOTLIGHT

PROJECT: **ASDA Superstore, Monk's Cross, York**

CLIENT: **ASDA**

SPECTRUM SYSTEM: **Aluminium balustrade SC**

SECTOR: **Commercial**



Aesthetic appeal, durability, adaptability and safety performance were all factors behind ASDA's decision to select nylon coated Spectrum for a stairwell and mezzanine floor in the development of their Monk's Cross store near York. Not many companies offered balustrade with the necessary 3kn specification but Spectrum met this demand.

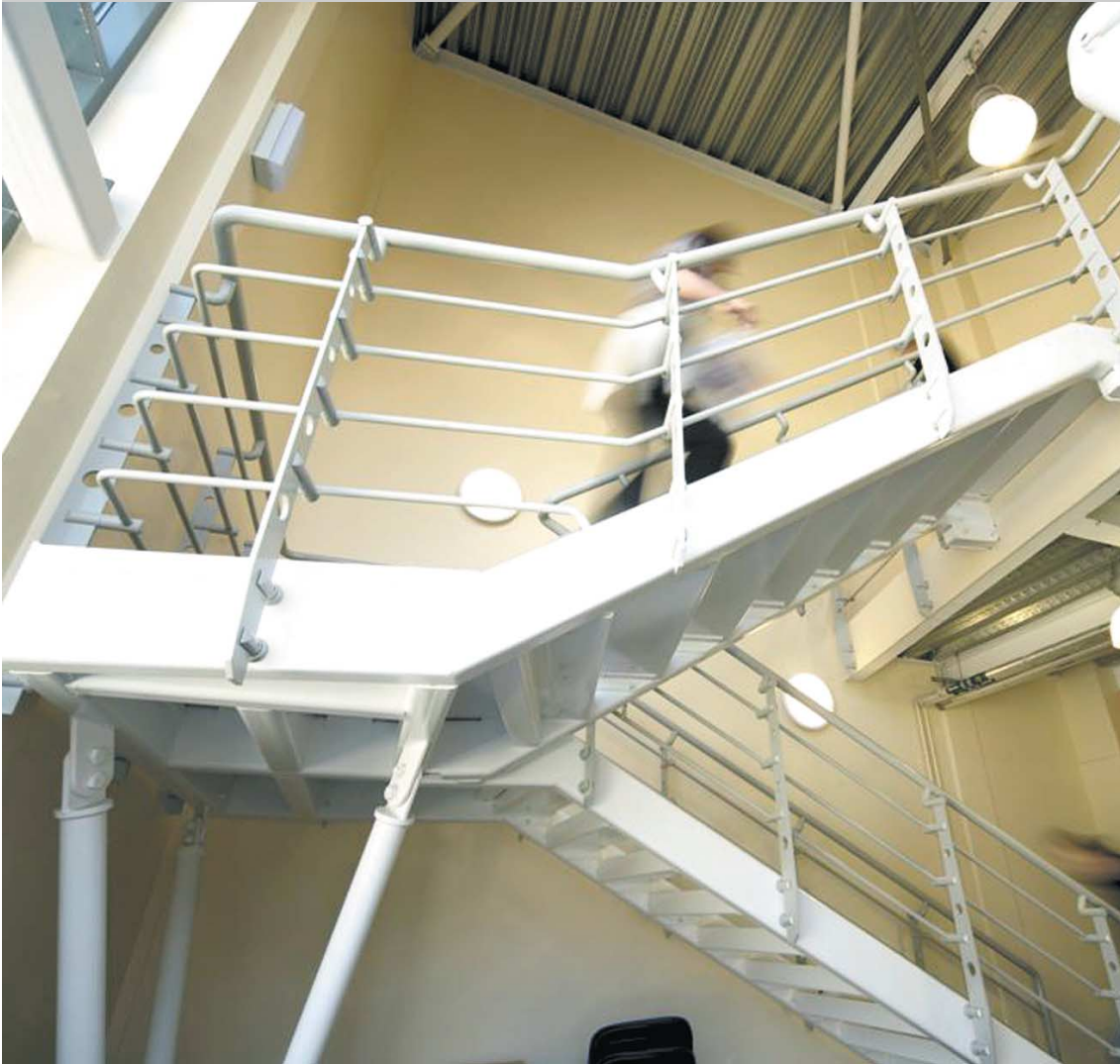
PROJECT SPOTLIGHT

PROJECT: **Hopwood College, Manchester**

ARCHITECT: **Cruickshank & Seward**

SPECTRUM SYSTEM: **Aluminium Techbar balustrade**

SECTOR: **Educational**



Spectrum's nylon coated finish is providing the durability to handle a high traffic area in an internal stairwell at Hopwood College Campus. Cruickshank & Seward wanted a distinctive flat-bar stanchion with precision-cut holes and they also specified Neaco's Brise Soleil aluminium sunscreen panels.

PROJECT SPOTLIGHT

PROJECT: Driffield School, East Yorkshire

CLIENT: East Riding of Yorkshire Council

SPECTRUM SYSTEM: Aluminium balustrade SC

SECTOR: Educational



Spectrum demonstrated its ability to adapt to bespoke designs when it was installed with a unique etching feature in the Performing Arts Building at Driffield High School. The etching pattern on Spectrum's smoked glass infill formed part of the architects' Elizabethan-style design theme.

PROJECT SPOTLIGHT

PROJECT: **St. Martin's College**

ARCHITECT: **Architects Plus**

SPECTRUM SYSTEM: **Aluminium balustrade SC**

SECTOR: **Educational**



Architects Plus chose Spectrum balustrade for two stairwells and a central atrium as part of an extensive new build project. The architects commented on its high-class looks and smooth, clean finish.

PROJECT SPOTLIGHT

PROJECT: **Stepping Hill Hospital, Stockport**

CLIENT: **Tarmac Building**

SPECTRUM SYSTEM: **Aluminium balustrade SC**

SECTOR: **Medical/care**



Spectrum was selected to create three internal stair flights at Stepping Hill's Children's Treehouse Centre – a flagship service for child healthcare in Stockport. Tarmac saw the product's durability as ideal for a hospital environment with its comfortable feel and non-chip, non-peel permanent finish.

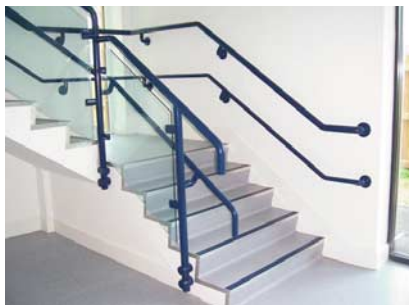
PROJECT SPOTLIGHT

PROJECT: **Bridlington Sure Start Centre**

CLIENT: **East Riding of Yorkshire Council**

SPECTRUM SYSTEM: **Stainless steel balustrade ST**

SECTOR: **Medical/care**



Nylon coated aluminium balustrade to internal areas

Spectrum demonstrated its ability to adapt to bespoke requirements with a unique installation. The new build nursery includes a balcony terrace featuring stainless steel Spectrum with a trespa infill as a non-standard specification requested by East Riding of Yorkshire Council.

PROJECT SPOTLIGHT

PROJECT: Beverley Leisure Centre, East Yorkshire

CLIENT: East Riding of Yorkshire Council

SPECTRUM SYSTEM: Stainless steel balustrade ST

SECTOR: Leisure



Spectrum's Grade 316 stainless steel balustrade provided the necessary specification for spectator seating areas overlooking the centre's swimming pool. Neaco's Brise Soleil sunscreen system was also selected on the development for the building's south-facing elevation.

PROJECT SPOTLIGHT

PROJECT: **The Deep, Hull**

ARCHITECT: **birdjohnson associates**

SPECTRUM SYSTEM: **Stainless steel balustrade ST**

SECTOR: **Leisure**



Spectrum stainless steel balustrade added a splash of style to The Deep, Hull's £53 million Millennium Commission Lottery Project. Installed with a glazed glass infill for a queuing screen within the reception, the system is capable of handling the performance demands of such a high traffic area.

PROJECT SPOTLIGHT

PROJECT: Kilworth House Open Air Theatre, Leicestershire

ARCHITECT: Corporate Architecture

SPECTRUM SYSTEM: Aluminium balustrade SC

SECTOR: Leisure



Situated within a natural woodland glade, this impressive project won Best Small Building Scheme of the Year in the 2007 Procon Awards and Best Structural Innovative Design in the 2007 LABC Awards. Having used Spectrum before, Corporate Architecture knew that it was a proven high specification product with a durable and warm-to-touch finish required for an external installation.

PROJECT SPOTLIGHT



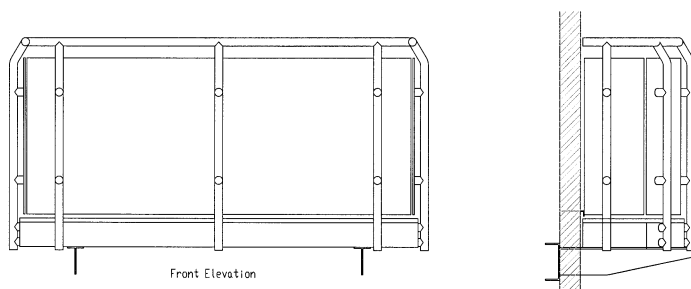
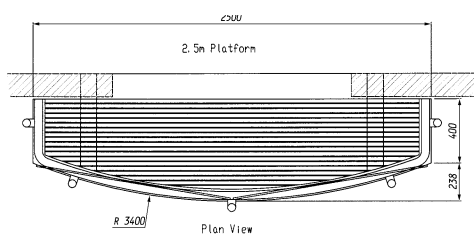
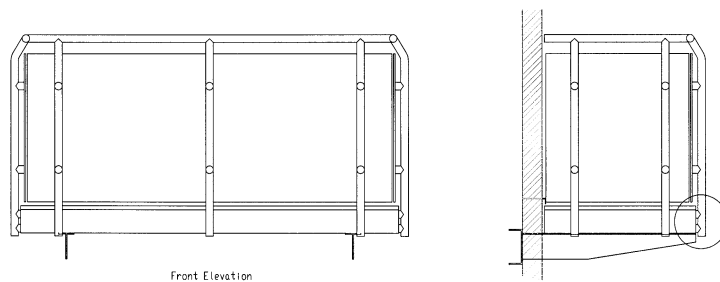
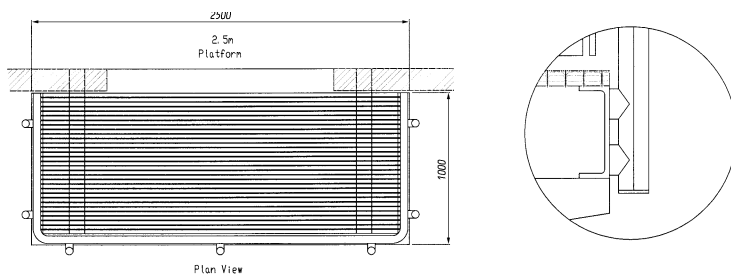
Modular balcony specification

Frame	152mm x 51 mm aluminium alloy channel frame - Mill finish.
Flooring	25mm deep aluminium alloy Neatdek with 5mm gap banded on open ends - Mill finish. A PVC balcony strip can facilitate a closed construction on the flooring if required.
Handrail	50mm outside diameter aluminium alloy - Nylon coated finish.
Stanchions	50mm outside diameter aluminium alloy offset and cranked c/w offset glass clip - Nylon coated finish.
Infill	10mm clear toughened glass

Customised options available on request

Stanchions	Techbar offset c/w offset glass clip - Nylon coated finish.
Infill	10mm Bronze or Grey tinted toughened glass.

For advice and guidance on thermal bridge solutions please contact Schöck Ltd. Tel: 0845 241 3390 or visit www.schoeck.co.uk



Juliet balcony specification

Handrail 90mm x 45mm oval aluminium alloy top rail with nylon coated finish in a wide range of colours. Rail connected to the wall structure by means of circular stem brackets with rose covers.

Infill Top rail encapsulates 10mm thick toughened safety glass which is 1200mm in height and available in clear or tinted options. The minimum width for each glass panel is 900mm. Each glass panel is secured at the base with a minimum of two circular support brackets.

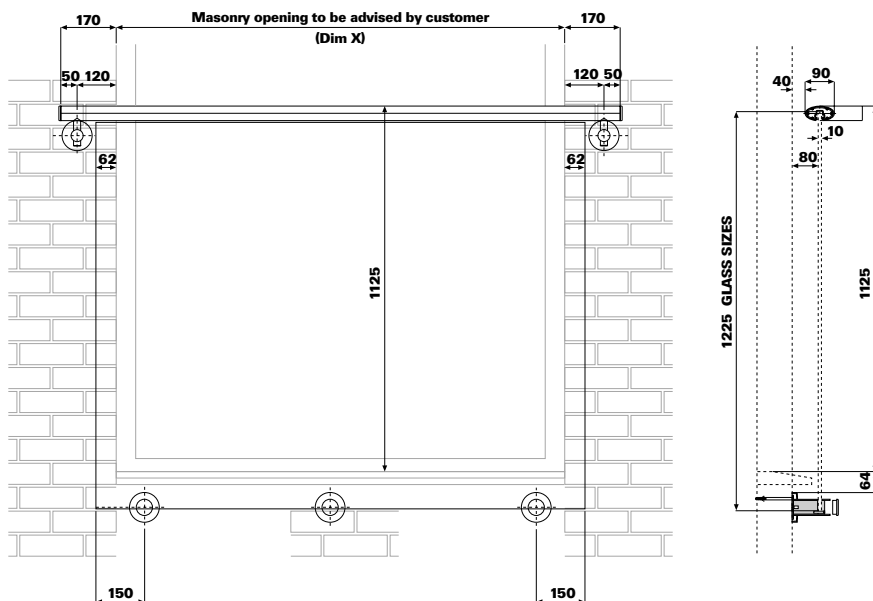
The maximum span for a uniformly distributed load of 0.74 kn/m is a 2.5 metre masonry opening.

In accordance with BS 6180:1999 the balustrade has been designed to meet the minimum horizontal imposed loads stated in

BS 6399:part 1:1996 for occupancy classes A, B, E and C3.

Fixings are not supplied - these are to be determined by the project's structural engineers on the assumption that the wall construction is capable of withstanding the applied load.

Typical example



Structural glass specification

Glass

Toughened in accordance with BS EN 12150 1(C)1

The following table offers guidance on the recommended glass thickness for general building categories. Please refer to the relevant codes of practice and British Standards to assess the overall loading requirements.

The two systems that we currently offer cater for the 0.74kN and a 1.5kN UDL line loading.

HORIZONTAL LOAD	MINIMUM GLASS
0.74 kn/m	15mm
1.5 kn/m	19mm

To assess which building categories this covers please refer to Table 4 of BS 6399-1.

Low iron glass

A low iron glass option is available, offering a noticeably clearer panel than the inherent green cast of standard clear float glass used in balustrade applications. Samples and prices are available on request.

Heatsoaking

Neaco can use a heatsoaking process to accelerate crystallisation, reducing the risk of potential breakages when the glass is in situ. Prices for this service are available upon request.

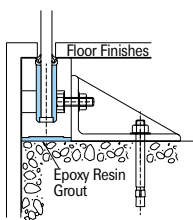
The aluminium extruded channel base

The channel base is extruded from 6063 T6 aluminium and can be top, flush or side fixed directly to a suitable structure. Top and side fixed bases can be capped or cloaked.

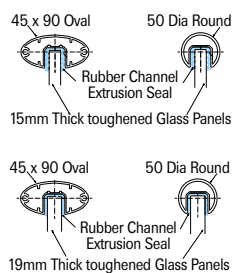
Top rail

Oval or tubular top rails extruded from nylon coated aluminium (6063 T6) providing a warm touch finish in cold winter conditions in accordance with clause 5.10.1 of BS 8300.

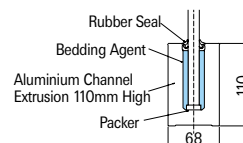
Concealed top fixing



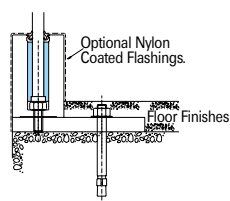
Nylon coated aluminium extrusion top handrails



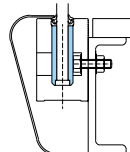
0.74 Kn/m Bottom channel section



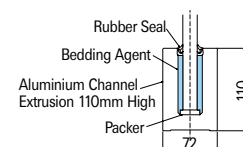
Exposed top fixing



Balcony detail



1.5 Kn/m Bottom channel section



General Spectrum balustrade specification

ALL SPECTRUM BALUSTRADE SYSTEMS

- Manufactured in accordance with BS 6180:1999 and with procedures approved to BS EN ISO 9002:1994.
- Modular system offers the versatility to meet virtually any design requirement, no matter how complex.
- Engineered to close tolerances, with quality formed bends eliminating the need for unsightly mitred joints.
- Component parts are mechanically secured with concealed fixings, requiring no welding and ensuring rapid assembly on site (all fixings are supplied).
- Available with a choice of infill options, including glass, perforated panels or 22mm rail infills.
- Balustrades can be designed to suit the following Kn/m loadings: 0.36, 0.74, 1.5, 3.0. Please specify your loading requirement with your enquiry.

SPECTRUM - NYLON COATED ALUMINIUM

- Aluminium alloy to BS1474:1987 (6063 T4 & T6).
- Electrostatically sprayed nylon powder coating with non-chip performance.
- Available in a choice of RAL/BS solid colours or metallic options.
- Satisfies Fire Officer requirements.
- Infills and stanchions are selected to suit site requirements, environment and loadings.
- Comfortable and warm to the touch.

SPECTRUM - STAINLESS STEEL

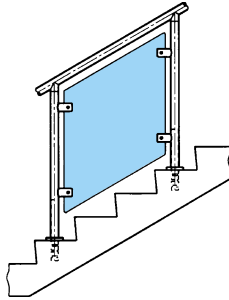
- High grade 316 (ANC4B) cast components to BS3146 pt 2 1975.
- Clean, sharp intersection lines created by true unidirectional polishing.
- Hand finished, satin polished components.
- Substantial 50mm diameter x 3mm thick tubular stanchions and rail.
- Infills and stanchions are selected to suit site requirements, environment and loadings (typically grade 316 for external use and 304 for dry internal use).

General Spectrum infill specification

Toughened glass infill

10mm THICK

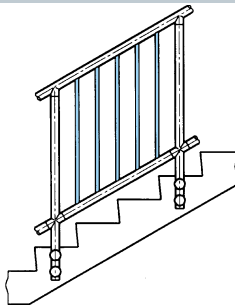
1



CLEAR
GREY
BRONZE
GREEN
(NON-STANDARD)

Vertical infill

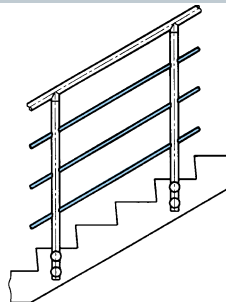
2



STANCHION DIA	INFILL DIA
50mm	22mm

Rail infill

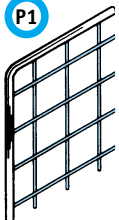
3



INFILL RAIL DIA (mm)	STANCHION DIA	
	50mm	38mm
16	8	3
22	3	8
32	3	8
38	3	3
50	3	8

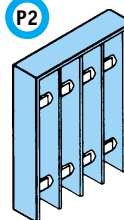
Alternative infills

P1



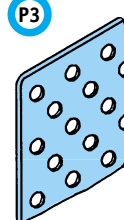
Mild steel mesh
50mm x 50mm grid
10mm diameter round bar edge

P2



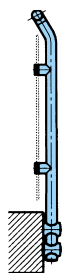
Aluminium grille panels
30mm x 100mm grid (as shown)
or 60mm x 100mm

P3

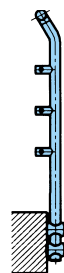


Punched panels
Mild steel or stainless steel

Offset option



Glass offset



Rail offset

In addition to the typical 'in line' arrangement of rails, infill panels or rails may be offset as shown

NB: When specifying Spectrum Aluminium, please note the following: The strength of the 50mm stanchions allows greater choice of design and infill rails. The 38mm system is recommended where space is at a premium; stanchion centres will be closer than the 50mm system to meet loading requirements. This may incur additional costs.



Specification aid

Wall Rail Brackets



P-15



K-15



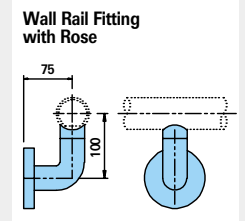
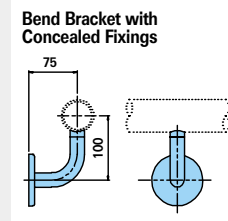
K-15



P-17



P-18



Stanchion Connections



P-14



P-14



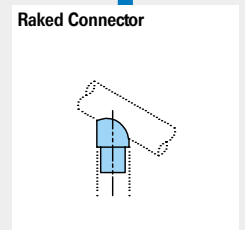
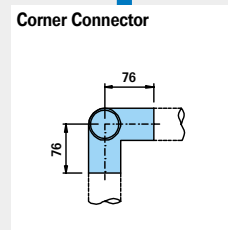
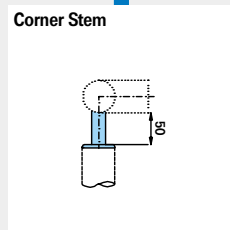
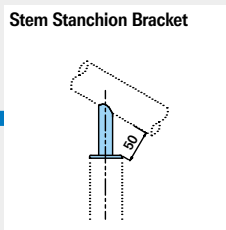
P-46



K-40



P-06



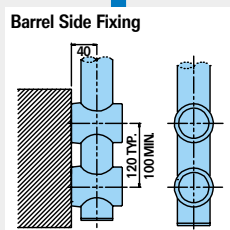
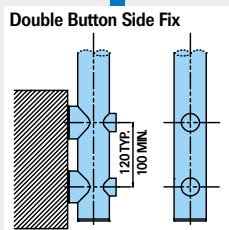
Side Fixed Stanchions



P-27



K-36



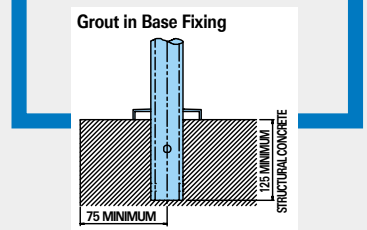
Grout-in Bases



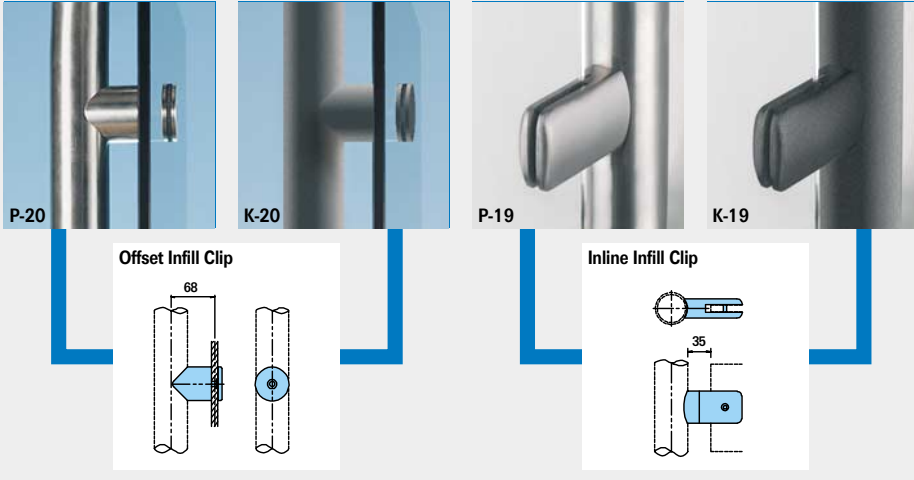
K-21



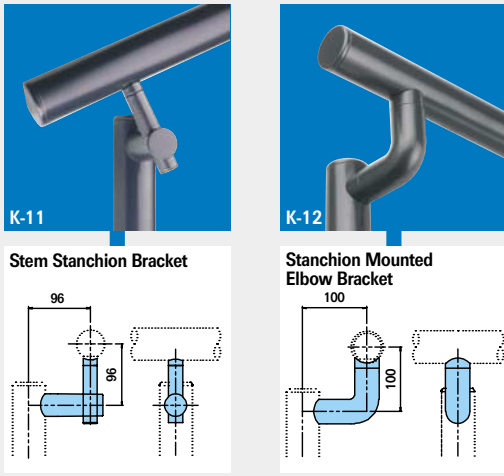
P-21



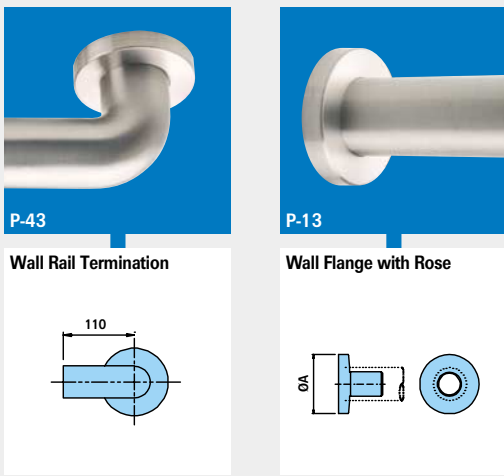
Infill Clips



Offset Stanchion Brackets



Wall Rail Terminations



K References
are Coated Aluminium

P References
are Stainless Steel

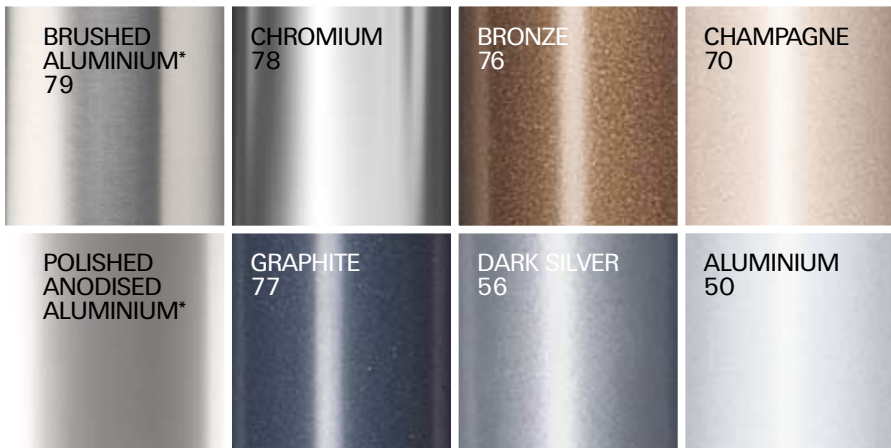
Dimensions are nominal

Solid colour range



Please note: other standard RAL colours are available to order.

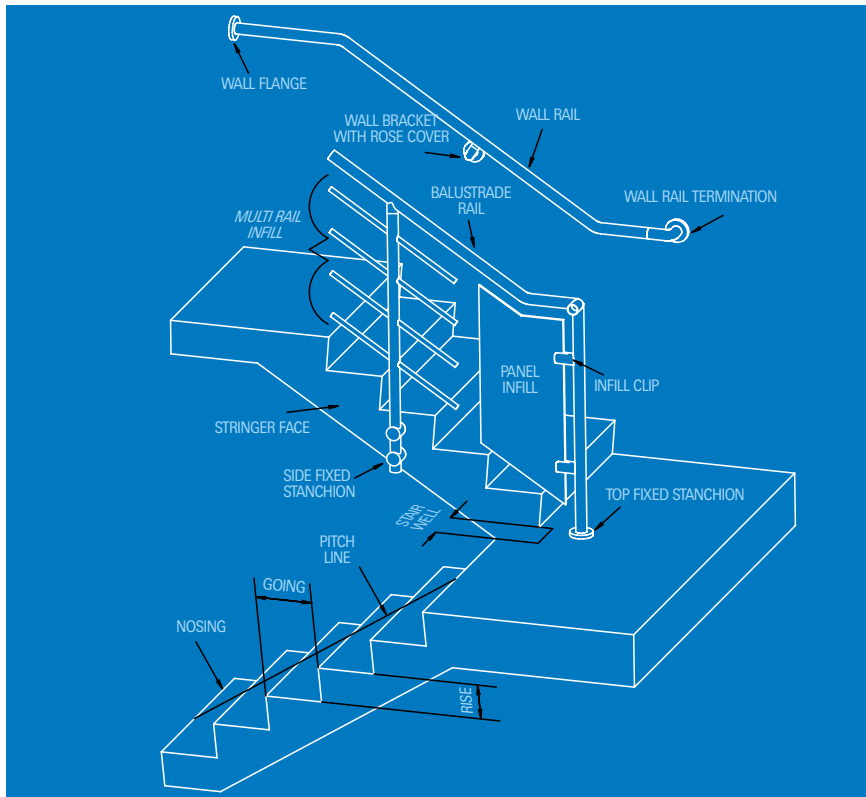
Metallic colour range



Please note: not all colours are suitable for external applications.
Please enquire prior to order.

*Juliet Balcony - top rails only.

Glossary of terms



Typical NBS specification

560 BALUSTRADE(S) AND HANDRAIL(S) TO:	Description of location
Drawing reference(s):	Drawing number
Manufacturer:	NEACO Norton Grove Industrial Estate Norton, Malton North Yorkshire YO17 9HQ Tel 01653 695721 Fax 01653 600418 web www.neaco.co.uk
Reference:	SPECTRUM Modular mechanically fixed, weld-free balustrade and wall rail system
Balustrade(s):	Aluminium Alloy
Stanchions:	ø50mm
Base Fixings:	Side Fixed (K-36)
Top Rail:	ø50mm
Multi Rail Infill:	4 No x ø22mm
Wall Rail(s):	Aluminium Alloy
Rail:	ø50mm
Bracket:	Rose Covered (K-18)
Finish(s):	Nylon Coated
Design Loading(s):	0.74 kN/m



When you offer such a diverse range of modular balustrade and handrail systems incorporating numerous design and infill options, a brochure cannot convey all the architectural possibilities.

For more information or an opportunity to view samples please contact us for an immediate response.

All NEACO products are subject to a continuing process of research and development and may be altered without notice.

All NEACO products are supplied subject to our Conditions of Sale which are supplied with every quotation (copy available on request).

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FOR ALL



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