

LANGFULTON



Steel Fencing Systems

Grating Fences



The Custom House Quay, Greenock 1820
Robert Salmon (1775-1845)

Our History

Lang+Fulton is one of the oldest companies in Scotland; its history as iron merchants in Greenock dates back to 1781. From those early days it developed into an important supplier of steel to the UK shipbuilding industry, often carrying steel from the mills in its own ships.

The business has progressively evolved from this background in steel stockholding, fabrication and shipping and today operates as a supplier of fencing, gratings and louvres, employing a young team from engineering and surveying backgrounds.

Our main sales and technical office is based in Edinburgh with a presence and stockholding facility in the West Midlands to best serve our primary market in the South.

Our Products

- ▣ High quality grating material in large panel sizes
- ▣ Plain round transverse bar for attractive aesthetic
- ▣ Durable finish for optimum resistance to corrosion and low maintenance
- ▣ Modular system for simple installation; stackable to any height
- ▣ Advice & support from experienced technical and design team.

Standard and Bespoke Designs

The standard range includes fencing for residential, commercial, municipal, sports, play and security projects. Lang+Fulton will also collaborate in the development of a unique, prestigious design: the integrity of the grating material allows it to be cut and shaped to create curved or waved tops, to be rolled to a radius or to incorporate ornamental motifs and laser cut panels. Options include feature posts, finials, decorative rails and any RAL colour scheme.

Manufacture & Material

Electrofused Mild Steel S235JR BS EN 10025.

Flat bearing bars are fused with round bars in a single process, combining high-voltage electricity and pressure. The amalgamated metals provide a strong grating with complete overall integrity and neat joints.

Panels are framed with different weights of flat bar appropriate to the fence height: 25x4mm - 30x5mm.

Finishing

Galvanizing: all products are hot-dip galvanized to BS EN ISO 1461 unless stated otherwise.

Polyester Powder Coating: optional polyester powder coating to BS 1722 - Part 16 is available in any RAL or BS colour. A multi-stage process applies thermo-setting resins producing a significantly superior finish to painting.

Performance

Wind Loading: all fence panels and posts are designed in accordance with BS EN 1993 (EC3) and Wind Loading EC1.

Anti-Climb: small aperture gratings (34x100, 25x76 and 25x25mm) comply with NHBC anti-climb guidelines (aperture width <35mm) for schools, colleges and residential environments.

Horizontal Loadings: panels can be designed to accept horizontal loadings for pedestrian barriers up to a 3m span in accordance with BS 6399-1.

Compliance: all fences are supplied in accordance with BS 1722-14.

Installation

Narrow Width End Panels: panels can be cut to size on site and connected to posts with special telescopic lugs.

Fastenings: M10x30mm stainless steel bolts with domed heads and snap-off security nuts, all stainless steel grade A2.

Groundworks: posts are set in holes 300mm to 450mm square in plan, depending on fence height, completely filled to a minimum of 50mm below ground level with concrete mix C20.

Height from ground: panels should sit no more than 100mm off ground.

Changes in level: fence panels can be stepped to a maximum of 150mm on standard length post. Post centres should be reduced for steeper gradients (between 1:20 and 1:7).

Changes in direction: 60x60mm or 80x80mm SHS or RSA for 90° corner post. Two flat bar posts for other angles.

Technical Assistance and Design

Full design service available for panels, posts and gates with consultant engineering services for non-standard loadings. Detailed CAD drawings for layout and installation and bespoke designs.

Supply

Products are supplied fully finished for site installation throughout the UK, Channel Islands, Ireland and worldwide destinations.

While all reasonable care is taken to ensure that published and website information is accurate and regularly updated, Lang+Fulton cannot guarantee its accuracy and information may change at any time without notice.



Telescopic lug
for narrow width panels



Stainless steel security bolt



Intermediate lug



4-bolt fixing plate



2-bolt fixing plate



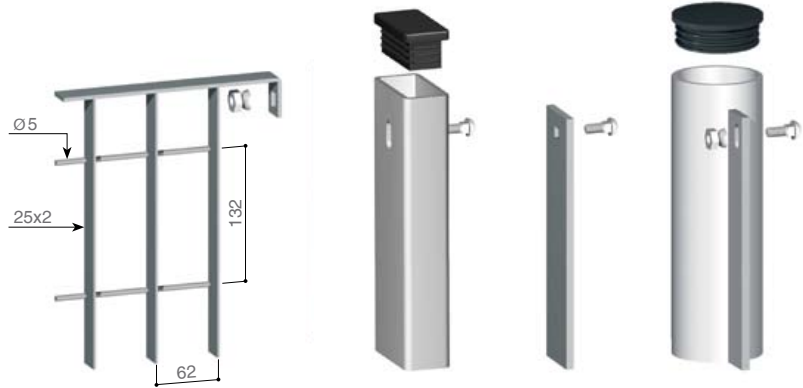


Roma-2

Aperture: 62x132mm

Flat Bar: 25x2mm

The most economical perimeter fence within the Roma range, recommended for general purpose applications in heights up to 1986mm.



PANEL			RHS POST	FLAT POST	ROUND POST	GROUND FIXING	WALL FIXING	BOLTS
HEIGHT mm	WIDTH mm	WEIGHT kg/m ²	SECTION mm	SECTION mm	DIAMETER mm	LENGTH/ANCHORAGE mm	LENGTH/ANCHORAGE mm	NO per post
930	1992	9.1	50x30	60x7	50	1500/550	1210/200	2
1194	1992	8.7	50x30	60x7	50	1800/600	1494/200	2
1326	1992	8.6	50x30	60x7	50	2000/600	1625/200	2
1458	1992	8.4	50x30	60x7	50	2100/600	1758/200	2
1722	1992	8.3	60x40	60x7	76	2400/600	2015/200	2
1986	1992	8.1	80x40	80x8	76	2800/700	2336/250	3

STANDARD POST CENTRES (with flat bar post)

2000mm

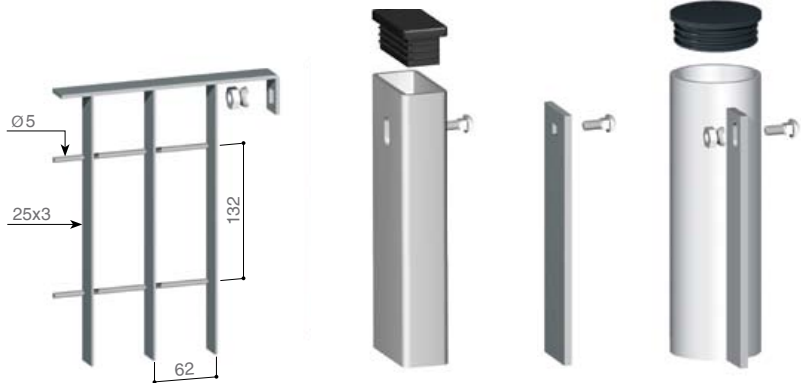


Roma-3

Aperture: 62x132mm

Flat Bar: 25x3mm

The 25x3mm flat bar makes this the most suitable fence for schools and colleges or any location requiring a fence height greater than 2 metres.



PANEL			RHS POST	FLAT POST	ROUND POST	GROUND FIXING	WALL FIXING	BOLTS
HEIGHT mm	WIDTH mm	WEIGHT kg/m ²	SECTION mm	SECTION mm	DIAMETER mm	LENGTH/ANCHORAGE mm	LENGTH/ANCHORAGE mm	NO per post
1194	1992	11.8	50x30	60x7	50	1800/600	1494/200	2
1326	1992	11.7	50x30	60x7	50	2000/600	1625/200	2
1458	1992	11.6	50x30	60x7	50	2100/600	1758/200	2
1722	1992	11.4	60x40	60x7	76	2400/600	2015/200	2
1986	1992	11.2	80x40	80x8	76	2800/700	2336/250	3
2118	1992	11.2	80x40	80x8	76	2900/700	2470/250	3
2382	1992	11.1	80x40	80x8	76	3200/700	2800/300	3
2646	1992	11.1	80x40	-	89	3500/700	3100/350	3
2910	1992	11.1	100x50	-	114	3700/700	3450/450	3

STANDARD POST CENTRES (with flat bar post)

2000mm

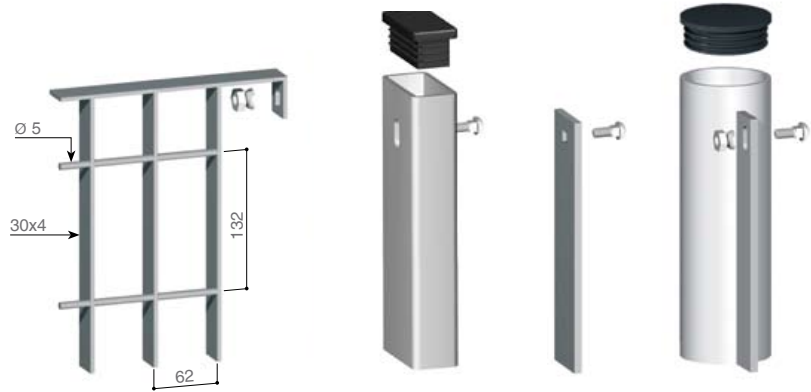


Roma-4

Aperture: 62x132mm

Flat Bar: 30x4mm

The most robust fence within the Roma range; the heavy construction has a striking visual presence and provides a high level of security, offering excellent resistance to intrusion and vandalism.



PANEL			RHS POST	FLAT POST	ROUND POST	GROUND FIXING	WALL FIXING	BOLTS
HEIGHT mm	WIDTH mm	WEIGHT kg/m ²	SECTION mm	SECTION mm	DIAMETER mm	LENGTH/ANCHORAGE mm	LENGTH/ANCHORAGE mm	NO per post
1722	1992	18.1	60x40	80x8	76	2400/600	2015/200	2
1986	1992	18.0	80x40	80x8	76	2800/700	2336/250	3
2118	1992	17.9	80x40	80x8	76	2900/700	2470/250	3
2382	1992	17.8	80x40	80x10	76	3200/700	2800/300	3
2646	1992	17.7	80x40	-	89	3500/700	3100/350	3
2910	1992	17.6	100x50	-	114	3700/700	3450/450	3

STANDARD POST CENTRES (with flat bar post)

2000mm

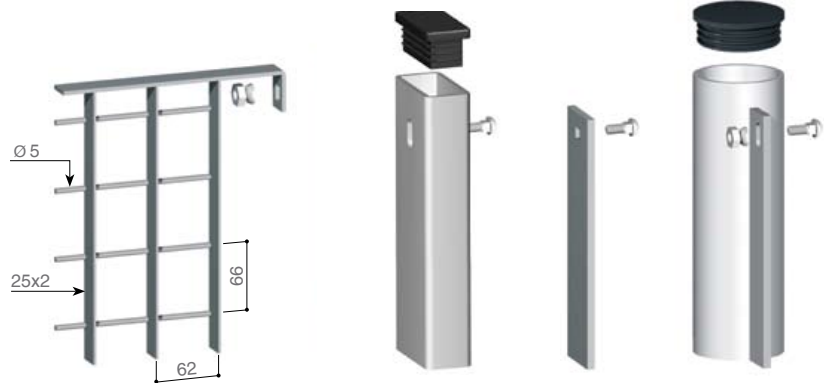


Verona

Aperture: 62x66mm

Flat Bar: 25x2mm

The most popular fence where a square aperture is preferred. The 66mm spacing between the round bars provides excellent rigidity.



PANEL			RHS POST	FLAT POST	ROUND POST	GROUND FIXING	WALL FIXING	BOLTS
HEIGHT mm	WIDTH mm	WEIGHT kg/m ²	SECTION mm	SECTION mm	DIAMETER mm	LENGTH/ANCHORAGE mm	LENGTH/ANCHORAGE mm	NO per post
930	1992	10.2	50x30	60x7	50	1500/550	1210/200	2
1194	1992	9.6	50x30	60x7	50	1800/600	1494/200	2
1326	1992	9.6	50x30	60x7	50	2000/600	1625/200	2
1722	1992	9.3	60x40	60x7	76	2400/600	2015/200	2
1986	1992	9.3	80x40	80x8	76	2800/700	2336/250	3
2118	1992	9.2	80x40	80x8	76	2900/700	2470/250	3
2382	1992	9.2	80x40	80x8	76	3200/700	2800/300	3
2646	1992	9.1	80x40	-	89	3500/700	3100/350	3
2910	1992	9.0	100x50	-	114	3700/700	3450/450	3

STANDARD POST CENTRES (with flat bar post)

2000mm

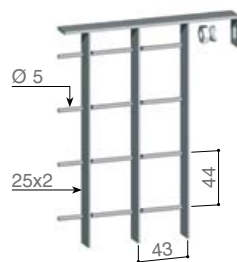


Palermo

Aperture: 43x44mm

Flat Bar: 25x2mm

The smaller aperture of the Palermo offers a distinctive appearance and a greater degree of security.



PANEL			RHS POST	FLAT POST	ROUND POST	GROUND FIXING	WALL FIXING	BOLTS
HEIGHT mm	WIDTH mm	WEIGHT kg/m ²	SECTION mm	SECTION mm	DIAMETER mm	LENGTH/ANCHORAGE mm	LENGTH/ANCHORAGE mm	NO per post
930	1992	14.4	50x30	60x7	50	1500/550	1210/200	2
1195	1992	14.0	50x30	60x7	50	1800/600	1494/200	2
1320	1992	13.8	50x30	60x7	50	2000/600	1625/200	2
1720	1992	13.5	60x40	60x7	76	2400/600	2015/200	2
1985	1992	13.4	80x40	80x8	76	2800/700	2336/250	3
2118	1992	13.4	80x40	80x8	76	2900/700	2470/250	3
2382	1992	13.4	80x40	80x8	76	3200/700	2800/300	3
2646	1992	13.3	80x40	-	89	3500/700	3100/350	3
2910	1992	13.2	100x50	-	114	3700/700	3450/450	3

STANDARD POST CENTRES (with flat bar post)	2000mm
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Novara-25



Novara-34



Novara-25



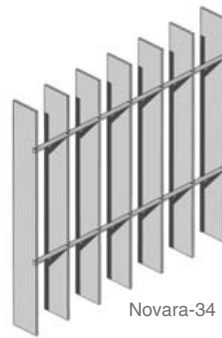
Novara-34

Novara-34 & Novara-25

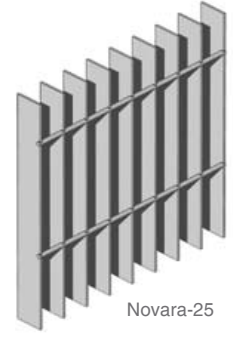
Aperture: 34x100mm / 25x76mm

Flat Bar: 25x2mm

The anti-climb properties and security level of the Novara fences makes them particularly appropriate for schools and colleges; the tight apertures comply with NHBC guidelines and the narrow post centres provide exceptional rigidity.



Novara-34



Novara-25

- Standard panels are typically framed to include a bent over lug for panel to post fixing with tamper-proof bolts.
- Alternative post arrangements such as a T-post can be used to reduce the gap between panel and post for increased security.
- Optional entry/exit controls for restricted access with automatic activation in the event of fire alarm.

PANEL		RHS POST	FLAT POST	I-POST	GROUND FIXING	WALL FIXING	BOLTS
HEIGHT mm	WEIGHT kg/m ²	SECTION mm	SECTION mm	SECTION mm	LENGTH/ANCHORAGE mm	LENGTH/ANCHORAGE mm	NO per post
1000	14.4	50x30	60x7	-	1550/550	1250/200	2
1200	14.3	50x30	60x7	-	1800/550	1500/200	2
1500	14.0	50x30	60x7	-	2100/550	1780/200	2
1800	13.8	60x40	60x7	-	2500/600	2100/200	2
2000	13.7	80x40	80x8	100x55	2800/700	2300/250	2
2400	13.6	80x40	80x8	100x55	3200/700	2800/300	3
2700	13.5	80x40	-	100x55	3500/700	3100/350	3
3000	13.4	100x50	-	100x55	3700/700	3450/450	3

STANDARD PANEL WIDTHS

1240mm for NOVARA-34; 1070mm for NOVARA-25

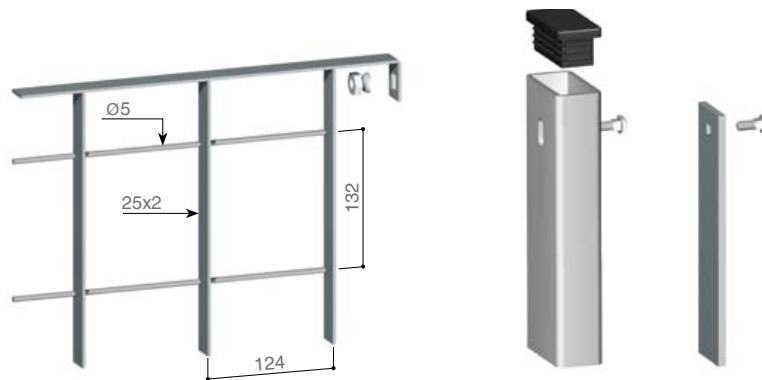


Genoa

Aperture: 124x132mm

Flat Bar: 25x2mm

Genoa has an open construction with a large aperture which is suitable for wall-mounted fencing or is increasingly used for creating a 'green wall' plant trellis.



- The strong yet relatively light-weight construction makes an ideal framework for planting; this form of screening is favoured by Planning Departments by reducing the impact of larger developments on the local environment.
- Ground level panels should be made from a smaller aperture grating to reduce any risk of the structure being climbed prior to planting becoming established; Verona with a 62x66mm aperture ensures vertical alignment of the flat bars.
- Panels can be stacked to achieve greater heights for green wall applications with direct fixing to substructure or custom-designed framework.

PANEL			RHS	FLAT POST	GROUND FIXING	WALL FIXING	BOLTS
HEIGHT mm	WIDTH mm	WEIGHT kg/m ²	SECTION mm	SECTION mm	LENGTH/ANCHORAGE mm	LENGTH/ANCHORAGE mm	NO per post
930	1992	7.6	50x30	60x7	1500/550	1210/200	2
1326	1992	7.1	50x30	60x7	2000/600	1625/200	2
1722	1992	6.8	60x40	60x7	2400/600	2015/200	2

STANDARD POST CENTRES (with flat bar post)

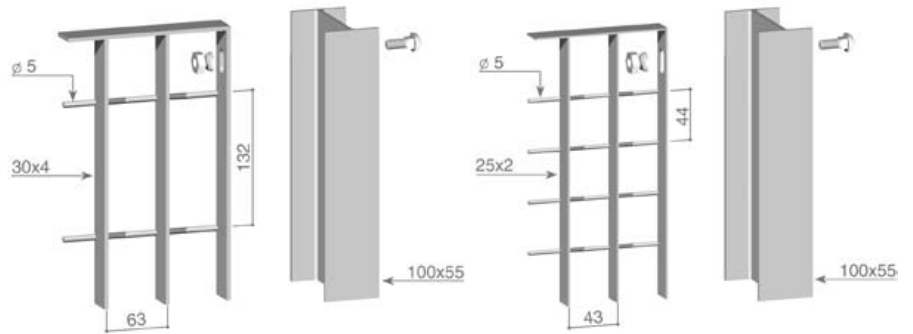
2000mm



Roma-4HS & Palermo-HS

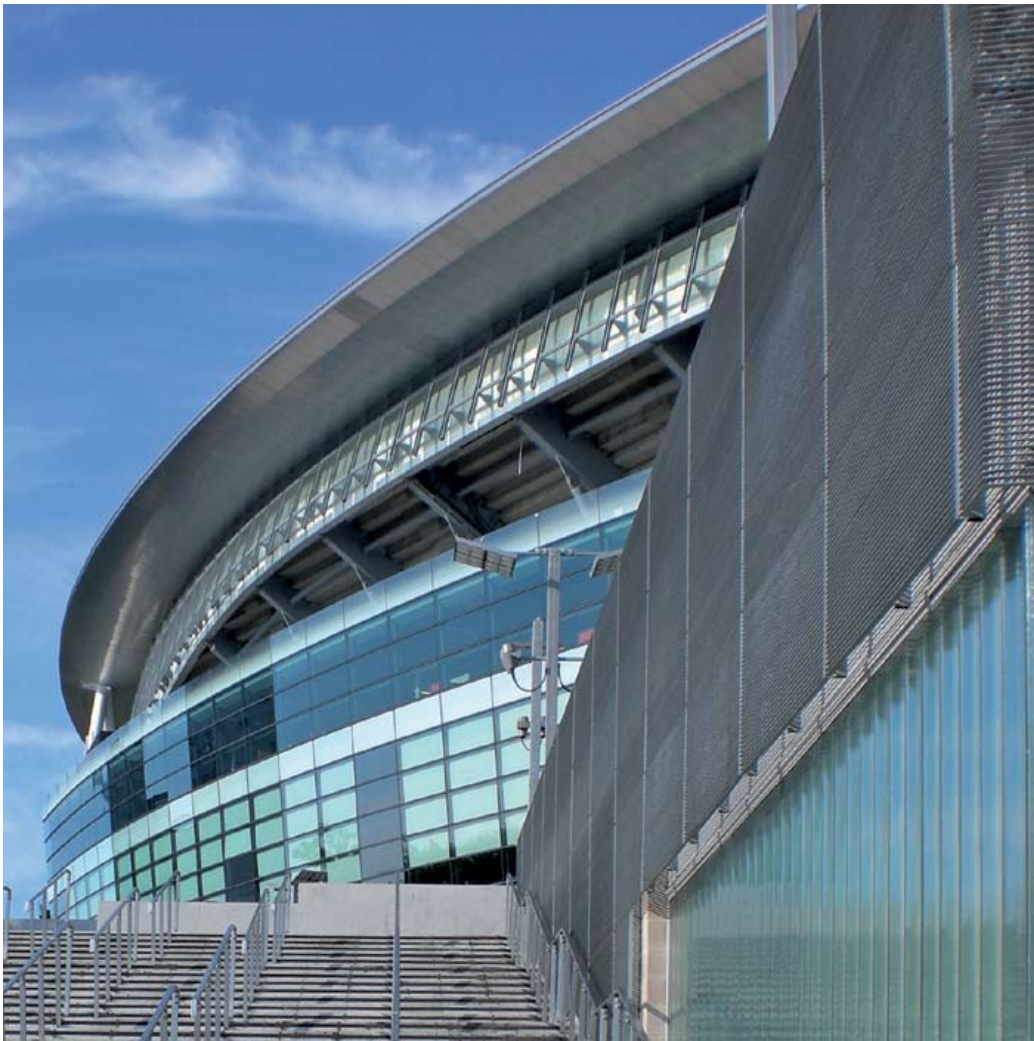
Aperture: 62x132mm / 43x44mm
 Flat Bar: 30x4mm / 25x3mm

The HS range of fences include features designed for higher security applications.



- HS fencing is made with close-fixing between the panel and post: the panels are holed on the outside vertical flats for direct fixing with stainless steel M10 dome headed bolts and snap-off nuts to a 100x55mm IPE post for the strongest, most secure connection.
- *Roma-4* grating with a heavy duty 30x4mm flat bar or *Palermo* with a small 43x44mm aperture grating are used for HS fencing.
- Standard Panel heights: 1991mm, 2123mm, 2387mm, 2646mm and 2910mm.
- Custom Panel heights: for greater heights panels can either be stacked or can be made up to 4000mm with a heavier section of post.
- Post centres: 1900mm.
- Fences can be supplied with 450mm cranked tops for extension panels or barbed wire. Anti-intruder spikes can be attached to gates or panels.



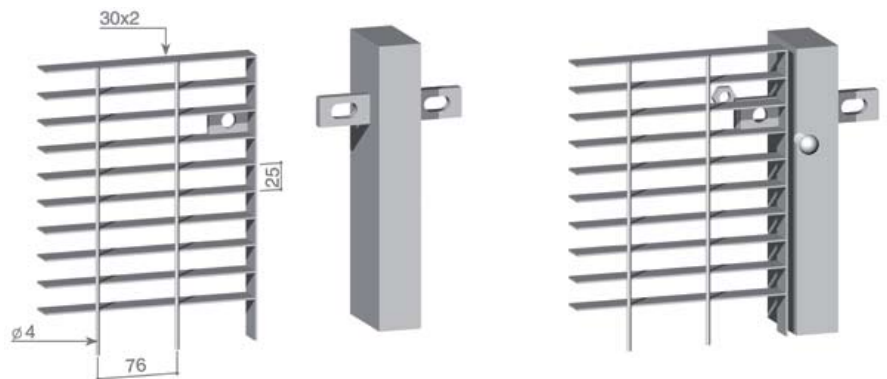


Arezzo-25

Aperture: 76x25mm

Flat Bar: 30x2mm

Arezzo fencing is designed for projects which require a barrier fence, such as bridge parapets or for crowd control at a sports stadium.



- Panels are combined in multiples of 1000mm to create a fence of the required height.
- Extra wide panels (<2510mm) can be supplied by increasing the section of flat bar.
- Panels and posts have been designed to comply with BS 6399-1 for barrier fencing.
- A separate horizontal rail is fixed at 1100mm above ground level to accommodate the uniformly distributed line load.
- Arezzo-15 with a 76x15mm aperture can also be used to create a custom-designed fence to meet a required loading.
- A fence made from Piazza-25 with a 25x25mm aperture will comply with anti-projectile regulations prescribed by Network Rail.

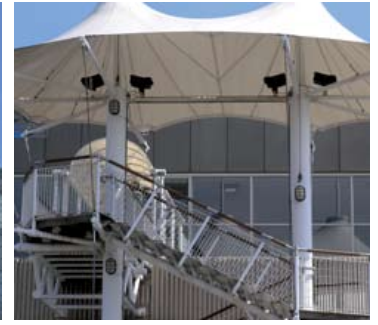
PANEL			BEARING BAR	RHS POST	LOADING	GROUND FIXING	WALL FIXING	BOLTS
HEIGHT mm	WIDTH mm	WEIGHT kg/m ²	SECTION mm	SECTION mm	kN/m ²	LENGTH/ANCHORAGE mm	LENGTH/ANCHORAGE mm	NO per post
1000	2510	21.0	30x2	100x50	1.5	1550/550	1250/200	4
2000	2510	21.0	30x2	100x60	1.5	2750/700	2250/200	8
3000	2510	21.0	30x2	150x150	1.5	3750/700	3350/300	12

STANDARD POST CENTRES	2560-2610mm
BEARING BARS FOR PANEL WIDTHS GREATER THAN 2510mm	40x3mm or 50x4mm

Bespoke Fence Designs Case Studies

Waterfront, Dundee

- Product:** Roma-2 and Roma-3
- Design:** waved and curved tops, feature posts and hand rail, stair balustrade panels
- Finish:** galvanized and polyester powder coated RAL9010 and RAL5015
- Project:** The stair and waterfront balustrading was made from Roma-2 panels with a teak and stainless steel handrail supported by a CHS post. 2m Roma-3 was customised with waved profile, decorative top rail and contrasting colours for panels and posts.
- Architect:** Department of Architecture, Dundee City Council



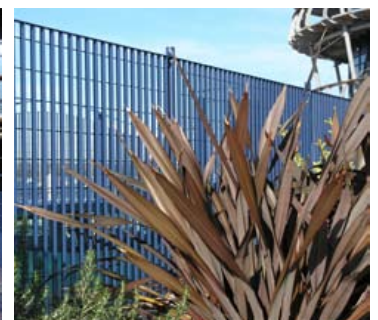
Prendergast Vale College, Lewisham

- Product:** Roma-4
- Design:** secure by design - anti-climb top
- Finish:** galvanized and polyester powder coated RAL7016
- Project:** A secure by design version of the standard Roma-4 fence. In order to achieve an anti-climb fence, the standard horizontal framing bars were replaced with right-angled sections which were welded to the back of each panel 100mm from the top and bottom. The exposed vertical flat bars formed an attractive anti-climb feature. Gates with self-closing devices and electric locks were made to match.
- Architect:** MacFarlane Wilder



RNLI Training College, Poole, Dorset

- Product:** Roma-2 and Roma-3
- Design:** waved top
- Finish:** galvanized and polyester powder coated RAL5013
- Project:** Roma-3 was customised with a floating top rail and 114mm CHS post. A 2100mm run of fencing represented a continuous wave and an adjacent wall-mounted section resembled a series of broken waves. The project included 6 gates and a standard 1722mm Roma-2 fence with 50mm diameter posts.
- Poole Council commented, "the RNLI's fence should set the standard for visually stimulating, quality fencing".
- Architect:** Poynton Bradbury Wynter Cole





MUGA fencing

Verona MUGA: aperture 62x66mm

Palermo MUGA: aperture 43x44mm

The heavy duty grating material, combined with 100x50mm RHS posts and a long lasting finish, provide outstanding durability and have a proven record of resistance to the wear and tear of prolonged use or problems of vandalism. The panels are designed to withstand the pressures of high impact sports such as football, hockey, basketball and cricket.

- The level inner surface of the grating combined with the flush mounted panel/post provides exceptionally even rebound.
- All panel to post connections have been designed to avoid finger traps and extrusions.
- Extra large panel sizes require minimal framing and support delivering a smart appearance together with good through-visibility.
- Excellent ball retention: panels can be stacked up to 6.00m high; posts with cranked extensions to carry cantilevered panels.
- Specially designed recessed goals, aiming goal or basket ball hoops can be incorporated.
- Lang+Fulton's designs for multi use games areas and ball park fencing have been approved by ROSPA.

STANDARD PANEL: 2920x1862mm (h x w)

POST CENTRES: 1920mm





Gates

All gates are manufactured to custom sizes and supplied with SHS posts appropriate to the overall size and weight of the gate. Infill panels are supplied from the full range of gratings or from the *Italia* or *Delta* ranges of mild steel louvres where visual screening is required; panels are generally welded but can be bolted to RHS frames. Gates are designed for manual operation but can also be automated for installation by specialist engineers.

Swing Gates: single-leaf, double-leaf or bi-folding gates are designed to conform to BS 1722 Parts 9 or 12.

- Features include:
- full height blanking/slam plates at hinges
 - eurocylinder Locinox mortice locks as standard, or sliding latch for padlocks or Maglocks
 - optional Locinox electric strikes for remote opening with provision for intercom units in gate post or adjacent panel
 - adjustable hinges for ease of installation or self-closing hinges.

Pivot Gates: made up to 2.4m high and 2.0m wide and mounted on a single RHS post and positioned to provide equal or unequal openings.

Sliding Gates: a choice of ground fixed rail, overhead rail or cantilevered; automated gates must carry the CE mark, certifying manufacture and testing in compliance with EU health, safety and environmental requirements EN13241-1, EN12604, EN12605 and EN12424.



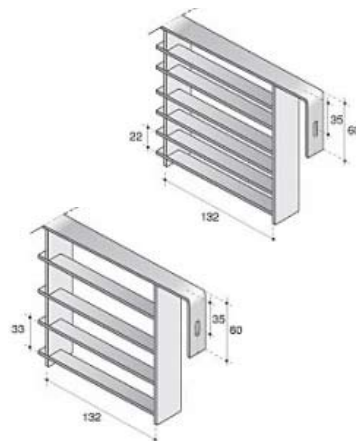


Torino

Applications:
Boundary and Security

- Torino-11: aperture 132x11mm
- Torino-22: aperture 132x22mm
- Torino-33: aperture 132x33mm
- Torino-44: aperture 132x44mm

Horizontal Bar: 10x2mm
Vertical Bar: 25x2 (optional 25x3)



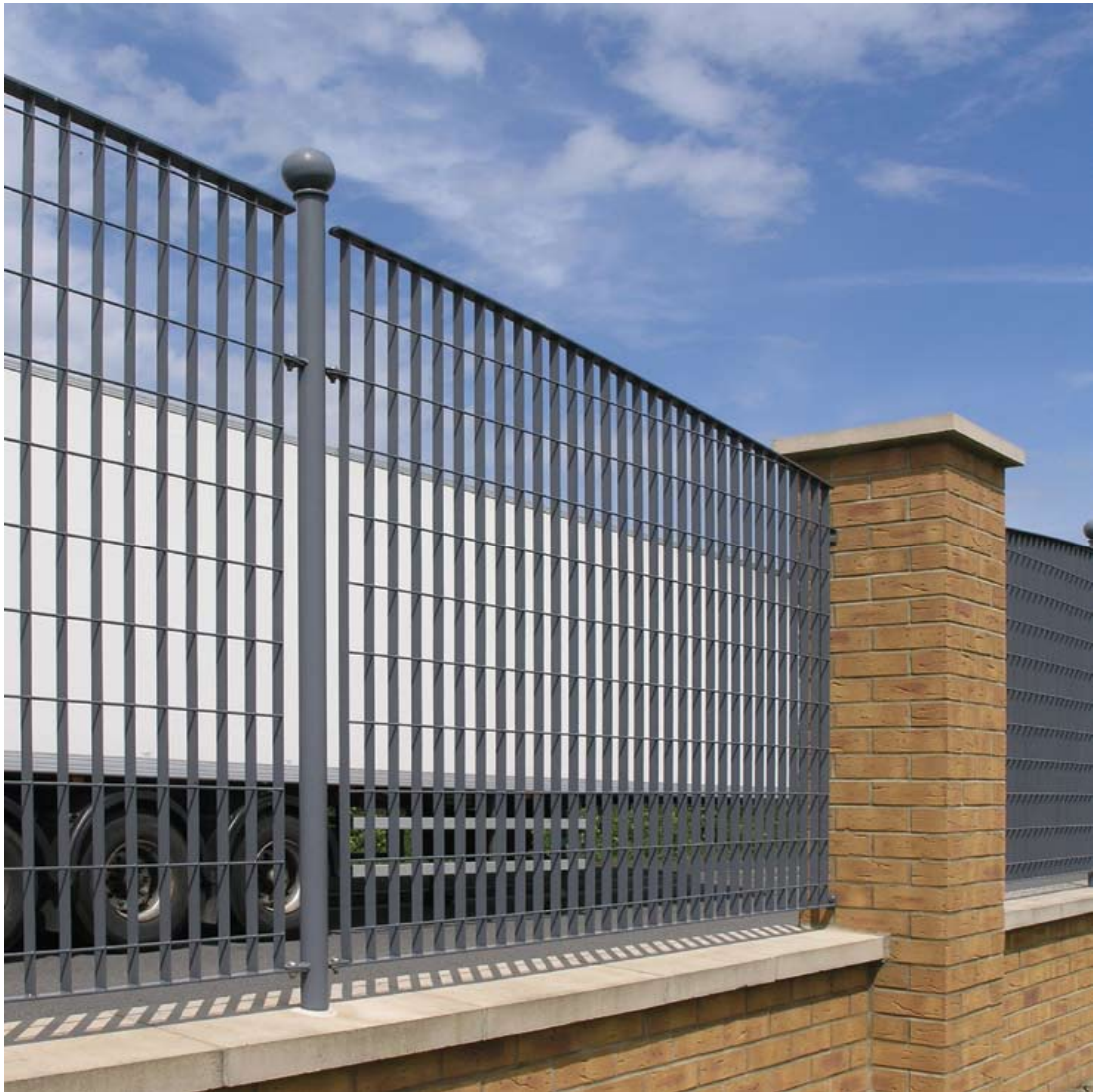
The **Torino** range represents a totally new concept; the exclusive and unusual arrangement of closely spaced transverse bars generates a unique horizontal emphasis.

The panels are made entirely from flat bars using a pressure-lock process which produces a grating with perfectly formed intersections. This delivers an exceptionally crisp, architectural aesthetic.

The range includes 4 standard sizes of aperture but can also be supplied in larger mesh sizes. It can therefore provide fencing with surprisingly different properties and characteristics: either for security with a strong, clearly defined structure or for boundary demarcation with an open, transparent appearance.

PANEL			FLAT POST	RHS POST	GROUND FIXING	WALL FIXING	BOLTS
HEIGHT mm	WIDTH mm	WEIGHT kg/m ²	SECTION mm	SECTION mm	LENGTH/ANCHOR-AGE mm	LENGTH/ANCHOR-AGE mm	NO per post
935	1992	9.5	60x8	50x30	1500/550	1210/200	2
1199	1992	9.1	60x8	50x30	1800/600	1494/200	2
1331	1992	8.9	60x8	50x30	2000/600	1625/200	2
1463	1992	8.8	60x8	50x30	2100/600	1758/200	2
1727	1992	8.6	60x8	60x40	2400/600	2015/200	2
1991	1992	8.4	80x8	80x40	2800/700	2336/250	2

STANDARD POST CENTRES (with flat bar post)	2000mm
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LANG & FULTON

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