

LANGFULTON



Steel Fencing Systems

Grating Fences

About Us

Lang+Fulton is one of the oldest companies in Scotland dating back to 1781 operating now as a leading supplier of fencing, gratings and louvres to the construction industry. We specialise in offering a custom designed solution from modular components.

Technical Assistance & Design

We offer a full design service for panels, posts and gates, consultant engineering services for non-standard loadings with detailed CAD drawings for layout, installation and bespoke designs.



Standard Products

Steel grating fences have a distinctive, contemporary style, well suited to the modern built environment.

The standard range offers a comprehensive choice of products for all types of projects: commercial, municipal, residential, sports, play and security. Alternative apertures provide a variety of aesthetic and different levels of security as well as properties such as anti-climb, barrier or trellis for particular applications.

RHS, flat bar or CHS posts are available as standard.



Bespoke Designs

Lang+Fulton will 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. Other options include feature posts, finials and decorative rails.

Finishing

All panels and posts are hot dip galvanized to BS EN ISO 1461 with optional polyester powder coating in any RAL colour.

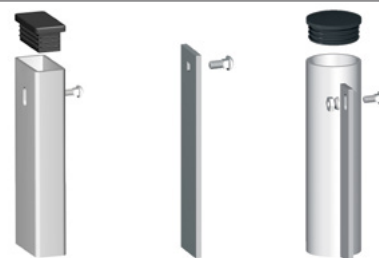


Product Features

- ❑ High quality grating material in large panel sizes
- ❑ Round transverse bar and plain round transverse bar for smart appearance
- ❑ Durable finish for optimum resistance to corrosion and low maintenance
- ❑ Modular system for simple installation; stackable to any height

Supply

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



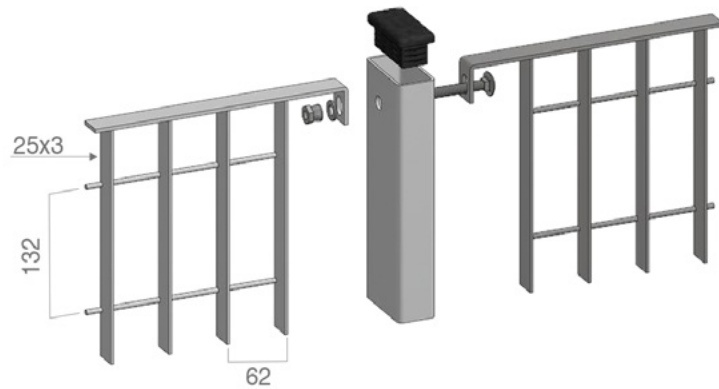


Roma-3

Mesh (c/c): 62x132mm

Flat Bar: 25x3mm

The most cost-effective grating fence suitable for most types of application.



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	12.1	50x30	60x8	50	1500/550	1210/200	2
1194	1992	11.8	50x30	60x8	50	1800/600	1494/200	2
1326	1992	11.7	50x30	60x8	50	2000/600	1625/200	2
1458	1992	11.6	50x30	60x8	50	2100/600	1758/200	2
1722	1992	11.4	60x40	60x8	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

POST CENTRES for 1986mm high fence with 80x40mm RHS

2032mm

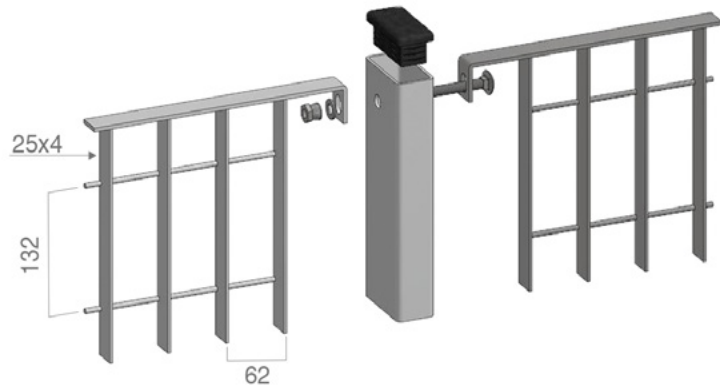


Roma-4

Mesh (c/c): 62x132mm

Flat Bar: 30x4mm

An extremely robust fence; 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

POST CENTRES for 1986mm high fence with 80x40mm RHS

2032mm

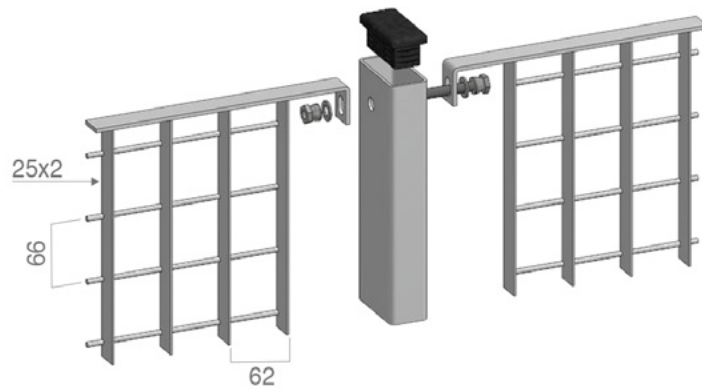


Verona

Mesh (c/c): 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	60x8	50	1500/550	1210/200	2
1194	1992	9.6	50x30	60x8	50	1800/600	1494/200	2
1326	1992	9.6	50x30	60x8	50	2000/600	1625/200	2
1722	1992	9.3	60x40	60x8	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

POST CENTRES for 1986mm high fence with 80x40mm RHS

2032mm

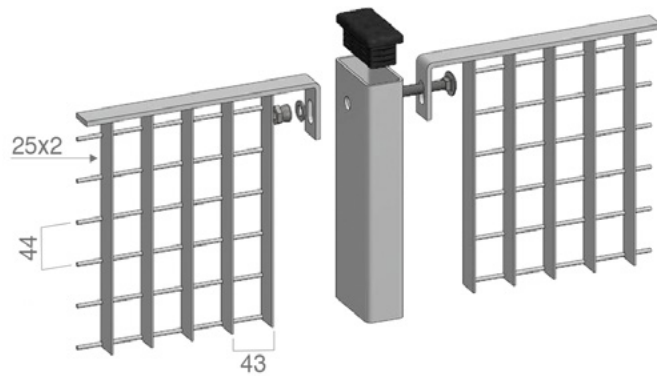


Palermo

Mesh (c/c): 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	60x8	50	1500/550	1210/200	2
1195	1992	14.0	50x30	60x8	50	1800/600	1494/200	2
1320	1992	13.8	50x30	60x8	50	2000/600	1625/200	2
1720	1992	13.5	60x40	60x8	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
POST CENTRES for 1986mm high fence with 80x40mm RHS						2032mm		

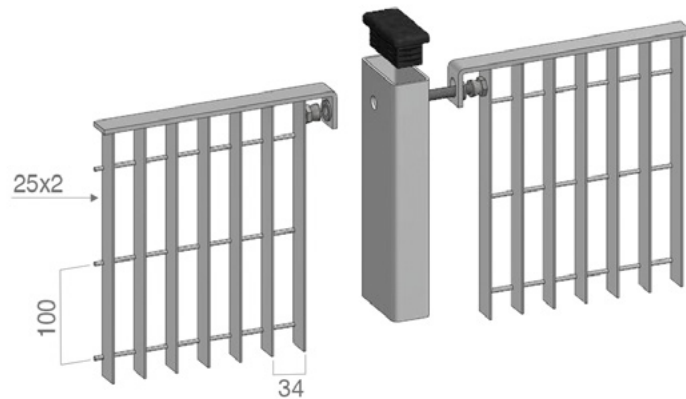


Novara-34

Mesh (c/c): 34x100mm

Flat Bar: 25x3mm

The anti-climb properties and security level of the Novara fences makes them particularly appropriate for schools and colleges; the tight aperture complies with NHBC guidelines.



- 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.

PANEL			RHS POST	FLAT POST	I-POST	GROUND FIXING	WALL FIXING	BOLTS
HEIGHT mm	WIDTH mm	WEIGHT kg/m ²	SECTION mm	SECTION mm	SECTION mm	LENGTH/ANCHORAGE mm	LENGTH/ANCHORAGE mm	NO per post
1006	1620	14.4	50x30	60x8	-	1550/550	1250/200	2
1206	1620	14.3	50x30	60x8	-	1800/550	1500/200	2
1506	1620	14.0	50x30	60x8	-	2100/550	1780/200	2
1806	1620	13.8	60x40	60x8	-	2500/600	2100/200	2
2006	1620	13.7	80x40	80x8	100x55	2800/700	2300/250	2
2406	1620	13.6	80x40	80x8	100x55	3200/700	2800/300	3
2706	1620	13.5	80x40	-	100x55	3500/700	3100/350	3
3006	1620	13.4	100x50	-	100x55	3700/700	3450/450	3
POST CENTRES for 2006mm high fence with 80x40mm RHS						1660mm		

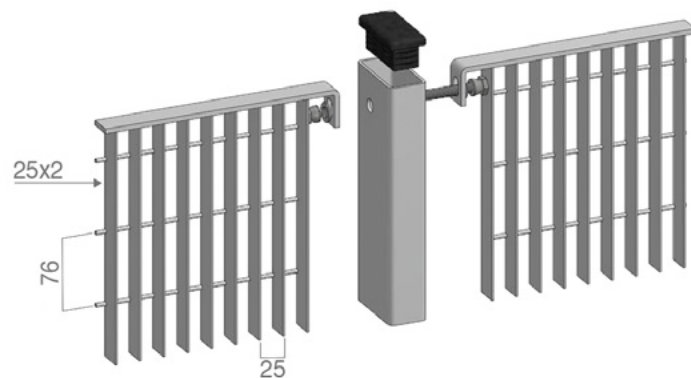


Novara-25

Mesh (c/c): 25x76mm

Flat Bar: 25x2mm

Novara-25 has the narrowest aperture of all the grating fences for projects where anti-climb properties are a priority and the narrow post centres provide exceptional rigidity.

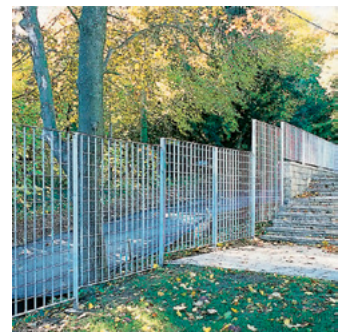


- Standard panels are typically framed to include a bent over lug for panel to post fixing with tamper-proof bolts.
- Alternative post arrangements such as a T-post can be used to reduce the gap between panel and post for increased security.

PANEL			RHS POST	FLAT POST	I-POST	GROUND FIXING	WALL FIXING	BOLTS
HEIGHT mm	WIDTH mm	WEIGHT kg/m ²	SECTION mm	SECTION mm	SECTION mm	LENGTH/ANCHORAGE mm	LENGTH/ANCHORAGE mm	NO per post
995	1273	20.5	50x30	60x8	-	1550/550	1250/200	2
1147	1273	20.2	50x30	60x8	-	1800/550	1500/200	2
1451	1273	19.8	50x30	60x8	-	2100/550	1780/200	2
1831	1273	19.5	60x40	60x8	-	2500/600	2100/200	2
1983	1273	19.4	80x40	80x8	100x55	2800/700	2300/250	2
2439	1273	19.3	80x40	80x8	100x55	3200/700	2800/300	3
2667	1273	19.2	80x40	-	100x55	3500/700	3100/350	3
2971	1273	19.1	100X50	-	100x55	3700/700	3450/450	3

POST CENTRES for 1983mm high fence with 80x40mm RHS

1313mm

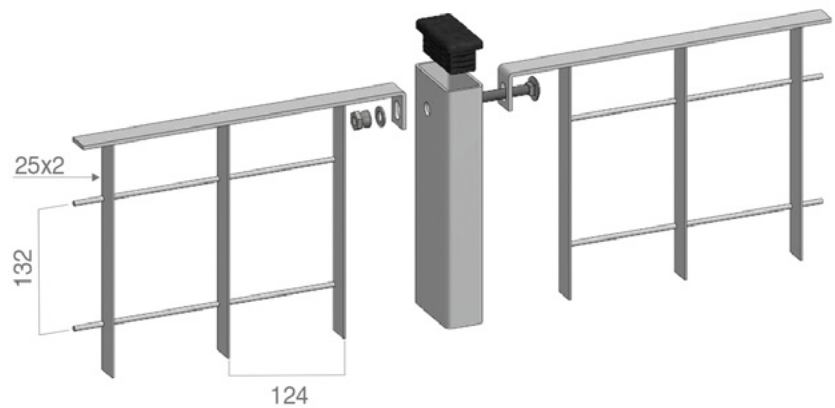


Genoa

Mesh: 124x132mm

Flat Bar: 25x2mm

Genoa has an open construction with a large aperture for good through-visibility. It is typically used as a wall-mounted fence or as a durable support for climbing plants.



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

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	60x8	1500/550	1210/200	2
1326	1992	7.1	50x30	60x8	2000/600	1625/200	2
1722	1992	6.8	60x40	60x8	2400/600	2015/200	2
POST CENTRES for 1722mm high fence with 60x40mm RHS					2032mm		

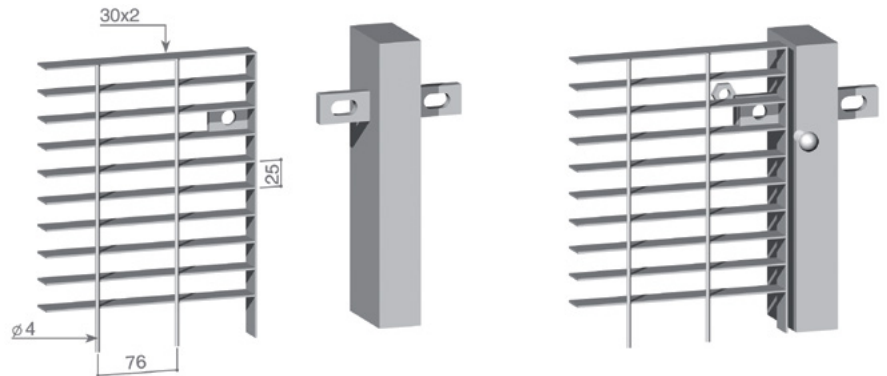


Arezzo-25

Mesh: 76x25mm

Flat Bar: 30x2mm

Arezzo fencing is designed for projects which require a barrier fence, such as 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 EN 1991-1-1:2002 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

Francis Crick Institute, Kings Cross

Product: Roma-4H
Design: Custom designed balustrading, fencing and gates
Finish: Galvanized and polyester powder coated RAL9007.

Project: In order to compliment the lateral architectural features of this prestigious building for biomedical research, the balustrade panels were made by rotating the grating material to change the axis of the rectangle.
A matching perimeter fencing was supplied with CHS posts, several posts were 3910mm high and designed to carry the overhead lighting.

Architects: HOK with PLP Architecture



RNLI Training College, Poole, Dorset

Product: Roma-3
Design: Waved and broken-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 standard 1722mm high fencing.
Poole Council commented, "the RNLI's fence should set the standard for visually stimulating, quality fencing".

Architect: Poynton Bradbury Wynter Cole



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, yet effective, anti-climb feature.
Gates with self-closing devices and electric locks were made to match.

Architect: Innes Associates/HKR Architects
Landscape: MacFarlane+Associates



Bespoke Fence Designs Case Studies

Waterfront Development, Dundee

Product: Roma-3
Design: Waved-top and 2-colour paint finish
Finish: Galvanized and polyester powder coated BS 18E50 and BS 18E51

Project: Roma-3 was customised with a floating top rail and 114mm CHS post to complement a sea-side mural. The high profile site was adjacent to Dundee's principle tourist attractions. The panels and posts were painted in contrasting colours of blue to reflect the waterfront location on the River Tay.

Architect: Department of Architecture, Dundee City Council



Manor Park, Banbury, Oxfordshire

Product: Roma-3
Design: Bowed top
Finish: Galvanized and polyester powder coated RAL7010

Project: Roma-3 was chosen as the perimeter fencing for a landscaped business park. The fence panels were wall mounted and designed with a radiused top edge, framed with a square edge convex flat, and custom sized to fit between brick pillars. The tubular posts were supplied with a decorative round finial. Access was provided by a cantilevered sliding gate and adjacent pedestrian gate.

Developer: Russell Harrison Ltd



Hitherfield Childrens Centre, Streatham

Product: Novara-34
Design: Parapet
Finish: Galvanized

Project: Novara-34 anti-climb fencing was installed along the length of a ramp for wheelchair-friendly access at the Hitherfield Centre which provides community and children's services in South London. The panels were installed between extra heavy duty 130x15mm flat bar posts with base plate fixings, designed to accommodate the maximum potential loading to the fence. Entrance gates were made to match with provision for intercoms.

Architect: Architype

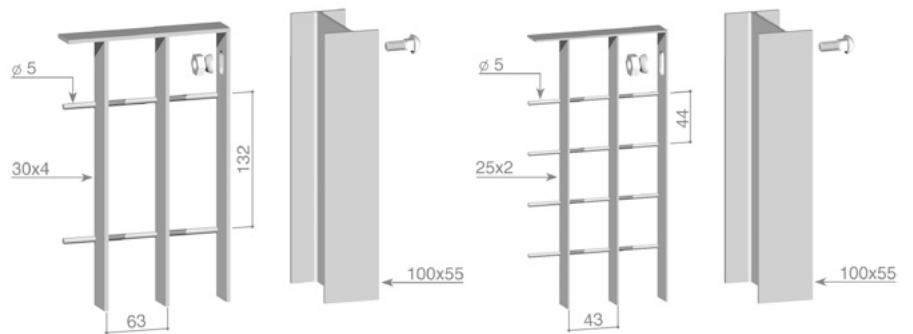




Roma-4HS & Palermo-HS

Mesh: 62x132mm / 43x44mm
 Flat Bar: 30x4mm / 25x2mm

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: 1986mm, 2118mm, 2387mm, 2382mm 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.





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 has 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.



Pressure-locked
fencing



Torino

Applications:

Boundary and Security

Torino-11: aperture 132x11mm

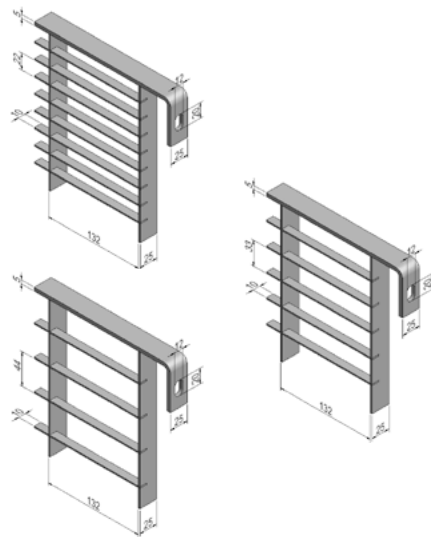
Torino-22: aperture 132x22mm

Torino-33: aperture 132x33mm

Torino-44: aperture 132x44mm

Horizontal Bar: 10x2mm

Vertical Bar: 25x2 (optional 25x3)



There are three different designs within the premium range of pressure locked fences: Como with a rectangular aperture, Garda with a square aperture and Torino.

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.

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

Torino is available in 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		

Material

Mild Steel S235JR BS EN 10025.

Manufacture

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 for long term durability and a low-cost life cycle.

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,

Compliance

All fences are supplied in accordance with BS 1722-14.



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 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.



Telescopic lug
for narrow width panels



Intermediate lug



RHS, Flat Bar & CHS posts



4-bolt base plate



Stainless steel security bolt

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.

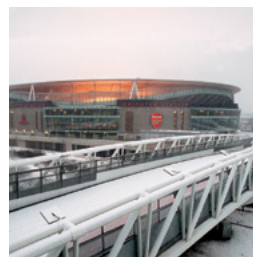
Groundworks: posts are set in holes 300mm to 450mm square in plan, depending on fence height, completely filled to a minimum of 50mm below ground level with concrete mix C20.

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.

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.



LANG&FULTON

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