



LANGFULTON

Stainless Steel
Gratings



10 GOOD REASONS FOR CHOOSING STAINLESS STEEL

- bright and attractive aesthetic
- corrosion resistant
- high mechanical resistance
- low surface roughness is easy to polish
- conforms with all hygiene regulations
- inert material
- stable within a wide temperature range
- nil maintenance costs
- long life-cycle provides value for money
- 100% recyclable



FRAMED PRESSURE LOCKED GRATINGS IN STAINLESS STEEL

Stainless steel delivers the highest quality grating material with an exceptional finish.

Horizontal applications

Prestigious flooring with specific markets in the food, pharmaceutical and chemical industries

Vertical applications

Balustrades, balconies, screening

Pressure locked gratings are constructed entirely from flat bars by pressing an arrangement of cross bars into notched bearing bars. The bars are further secured by a choice of flat wrap-around framing bar, producing a custom-sized grating panel with perfectly formed intersections.

This manufacturing method is extremely adaptable and the production process can promptly provide grating panels in custom sizes and to non-standard specifications of weight, aperture and performance.

Alternative grades of stainless steel:

AISI 304 for general purpose

AISI 316 for exposure to harsh substances or marine conditions



TREATMENTS FOR STAINLESS STEEL

All gratings are generally subject to finishing treatments such as de-greasing, pickling and polishing to reduce surface roughness, eliminate burrs from processing and maximise resistance to corrosion.

Corrosion

Austenitic stainless steels have a characteristic layer of chrome oxide on the surface (created by air or produced artificially) which is very thin and invisible and which protects the material from environmental damage: this resistance mainly depends on the percentage of chrome and nickel.

When the formation of this layer of chrome oxide is prevented or when this layer is continually destroyed, austenitic stainless steels will corrode.

To achieve good resistance to corrosion it is therefore necessary to know the types of corrosion possible and their causes, choose the suitable alloys for each application and carefully produce a design. Finally, appropriate surface treatments need to be performed.

De-Greasing

An essential operation before applying any heat treatment or surface finishes (such as pickling or electro-polishing) to remove any traces of grease or dirt which could damage the material itself or could lead to spotting.

De-greasing is normally done by immersion or by spraying a de-greasing agent such as FS10. When the treatment has been completed, the panels are thoroughly rinsed with cold water under pressure, which also provides a mechanical cleaning action.

Pickling

Pickling of the surfaces is always carried out prior to electropolishing or passivation to eliminate oxidise crusts that form on the surface during processes such as hot rolling, annealing, or welding.

Pickling is done by immersion or by the application of a pickling gel. Normally the treatment is done by immersion in a chemical bath consisting of sulphuric acid (20-25%), hydrofluoric acid (2.4%) and phosphoric acid (1-4%). Panels are again thoroughly rinsed with cold water under pressure.

Electropolishing

Electro-chemical polishing (DIN8590) creates a homogeneously polished surface by combining electrolyte solutions of phosphoric acid (30-50%) and sulphuric acid (30-50%) with electricity.

The panel forms the anode of an electrolytic cell, while the cathode is usually formed by a plate in the stainless steel AISI 304. The principle is to remove material by selectively dissolving the surfaces to be treated in an electrolytic bath, under the action of the appropriate electrical current: a direct current at a voltage of 50-15V with a density usually between 0.2 and 0.5 A/sq cm.

Benefits of electropolishing

- reduction of surface roughness
- elimination of burrs from processing
- increase of the resistance to corrosion
- enhancement of dirt repelling properties and aid to cleaning



Kings Cross Square

The creation of a 75,000 sq ft square in front of the station marked the final phase in the redevelopment of Kings Cross. The square provides a fitting aspect to the marvellously simple Grade I-listed façade of the original station, designed by Lewis Cubitt in 1851, and which represented a radical departure from Victorian Gothic in favour of a new functional modernity.



The square features granite benches with inset panels of high quality stainless steel grating supplied by Lang+Fulton, stunning lighting, trees and an area dedicated to art.

The 11x66/25x2 grating panels for the six separate seating areas were shaped to accommodate the up-lighters, the planting and adjacent watering points and were supplied in stainless steel grade AISI-316L.

Product: PL/SS-11x66/25x2

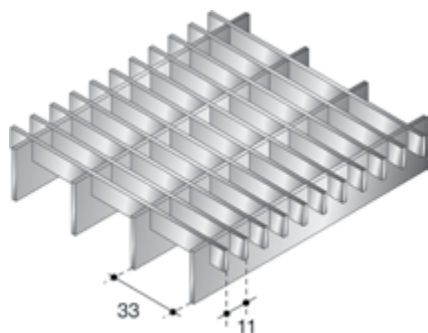


MADE TO MEASURE FRAMED PANELS

Lang+Fulton provides a bespoke service:

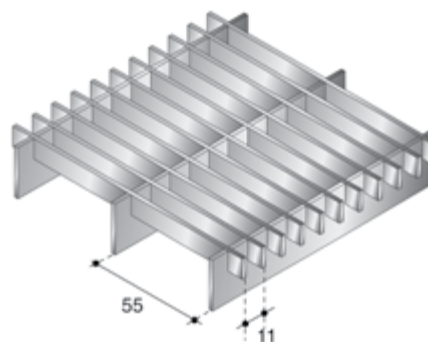
- specialist supplier of non-standard panels, cut and shaped to individual requirements.
- alternative apertures can be designed for a particular project with the bearing bars and transverse bars set at intervals of 11mm e.g. 22x66 or 44x44mm
- AISI 304 is used as the standard grade of stainless steel. AISI 316 should be specified, if required.
- non-slip gratings - all gratings are available with serrated bars for environments with oily or slippery substances.

33x11



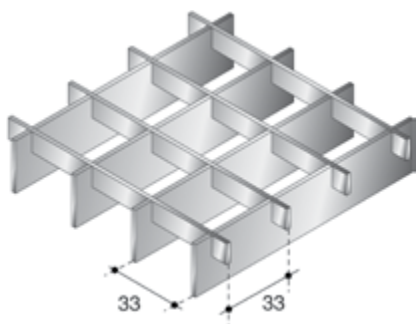
Bearing Bar (mm)	Transverse Bar (mm)	Framing Bar (mm)	Weight (kg/m ²)
20x2	10x2	20x3	25.07
25x2	10x2	25x3	27.80
25x3	10x2	25x3	33.46
30x2	10x2	30x3	30.53
30x3	10x2	30x3	37.32
35x2	10x2	35x3	33.27
35x3	10x2	35x3	41.19
40x2	10x2	40x3	36.00
40x3	10x2	40x3	45.05

55x11



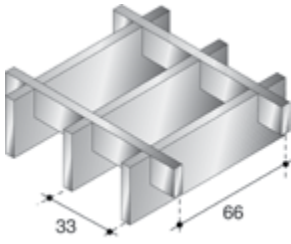
Bearing Bar (mm)	Transverse Bar (mm)	Framing Bar (mm)	Weight (kg/m ²)
20x2	10x2	20x3	21.32
25x2	10x2	25x3	23.12
25x3	10x2	25x3	26.43
30x2	10x2	30x3	24.91
30x3	10x2	30x3	28.89
35x2	10x2	35x3	26.71
35x3	10x2	35x3	31.36
40x2	10x2	40x3	28.51
40x3	10x2	40x3	33.82

33x33



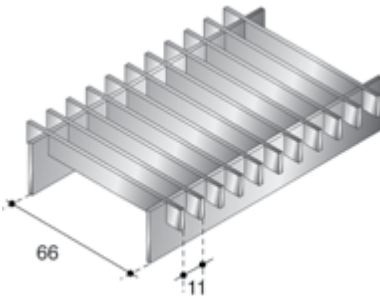
Bearing Bar (mm)	Transverse Bar (mm)	Framing Bar (mm)	Weight (kg/m ²)
20x2	10x2	20x3	13.29
25x2	10x2	25x3	16.02
25x3	10x2	25x3	21.68
30x2	10x2	30x3	18.76
30x3	10x2	30x3	25.55
35x2	10x2	35x3	21.49
35x3	10x2	35x3	29.41
40x2	10x2	40x3	24.23
40x3	10x2	40x3	33.28
40x4	10x3	40x4	44.69
50x3	10x2	50x3	44.01
50x4	10x3	50x4	54.98
60x3	10x2	60x3	48.85
70x3	10x3	70x3	57.72

33x66



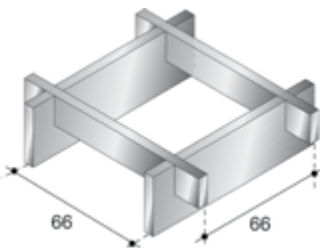
Bearing Bar (mm)	Transverse Bar (mm)	Framing Bar (mm)	Weight (kg/m ²)
20x2	10x2	20x3	13.29
25x2	10x2	25x3	16.02
25x3	10x2	25x3	21.68
30x2	10x2	30x3	18.76
30x3	10x2	30x3	25.55
35x2	10x2	35x3	21.49
35x3	10x2	35x3	29.41
40x2	10x2	40x3	24.23
40x3	10x2	40x3	33.28
40x4	10x3	40x4	44.69
50x3	10x2	50x3	41.01
50x4	10x3	50x4	54.98
60x3	10x2	60x3	48.85
70x3	10x3	70x3	57.72

66x11

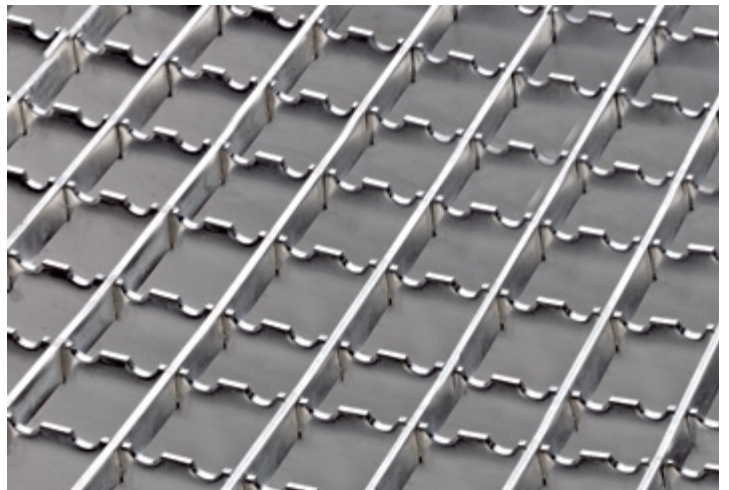


Bearing Bar (mm)	Transverse Bar (mm)	Framing Bar (mm)	Weight (kg/m ²)
20x2	10x2	20x3	20.38
25x2	10x2	25x3	21.95
25x3	10x2	25x3	24.68
30x2	10x2	30x3	23.51
30x3	10x2	30x3	26.79
35x2	10x2	35x3	25.07
35x3	10x2	35x3	28.90
40x2	10x2	40x3	26.64
40x3	10x2	40x3	31.01

66x66



Bearing Bar (mm)	Transverse Bar (mm)	Framing Bar (mm)	Weight (kg/m ²)
20x2	10x2	20x3	8.61
25x2	10x2	25x3	10.17
25x3	10x2	25x3	12.90
30x2	10x2	30x3	11.74
30x3	10x2	30x3	15.01
35x2	10x2	35x3	13.30
35x3	10x2	35x3	17.12
40x2	10x2	40x3	14.86
40x3	10x2	40x3	19.23





Primark

Primark's flagship store on Edinburgh's premier shopping street has undergone recent refurbishment.

This has included the installation of stainless steel grating as flooring within the window display. Apart from its stylish contemporary appearance, the grating serves as a light-well, introducing natural daylight to the shopping area in the basement.



A series of panels, each 1000x1600mm, were made to cover the 6.5x3.3m openings in the two window displays. Some panels were shaped to accommodate pre-existing structural columns.

A grating was chosen with a relatively open aperture but with a deep 50x3mm bearing bar in order to achieve visual screening of the basement area when viewed obliquely from the street.

Product: PL/SS-33x66/50x3



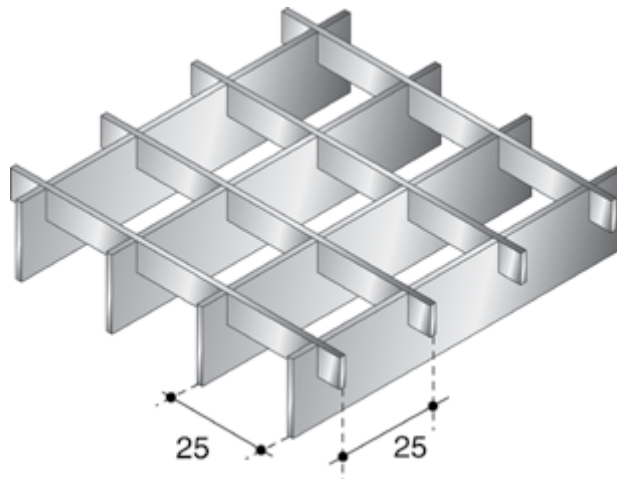
STANDARD PANELS 25x25


Standard Panel Specification:

25x25mm aperture,
30x2mm bearing bar
10x2mm transverse bar

Stainless Steel Grade:

AISI 304



Aperture (mm)	Bearing Bar (mm)	Transverse Bar (mm)	Panel Size (mm)	Weight (kg/m ²)	Loading Capacity
25x25	30x2	10x2	200x200	1.22	
25x25	30x2	10x2	200x300	1.93	
25x25	30x2	10x2	200x400	2.37	
25x25	30x2	10x2	200x500	2.92	
25x25	30x2	10x2	200x600	3.54	
25x25	30x2	10x2	200x700	4.12	
25x25	30x2	10x2	200x800	4.74	
25x25	30x2	10x2	200x900	5.29	
25x25	30x2	10x2	200x1000	5.95	
25x25	30x2	10x2	300x300	2.70	
25x25	30x2	10x2	300x400	3.60	
25x25	30x2	10x2	300x500	4.30	
25x25	30x2	10x2	300x600	5.10	
25x25	30x2	10x2	300x700	5.60	
25x25	30x2	10x2	300x800	6.70	
25x25	30x2	10x2	300x900	7.50	
25x25	30x2	10x2	300x1000	8.20	
25x25	30x2	10x2	400x400	4.47	
25x25	30x2	10x2	400x500	5.55	
25x25	30x2	10x2	400x600	6.76	
25x25	30x2	10x2	400x700	7.69	
25x25	30x2	10x2	400x800	8.58	
25x25	30x2	10x2	400x900	9.77	
25x25	30x2	10x2	400x1000	10.67	
25x25	30x2	10x2	500x500	7.04	
25x25	30x2	10x2	500x600	8.24	
25x25	30x2	10x2	500x700	9.30	
25x25	30x2	10x2	500x800	10.86	
25x25	30x2	10x2	500x900	11.90	
25x25	30x2	10x2	500x1000	13.50	
25x25	30x2	10x2	600x600	9.88	
25x25	30x2	10x2	600x1000	16.00	
25x25	30x2	10x2	700x900	16.90	
25x25	30x2	10x2	700x1000	18.70	

Stainless Steel for Architecture

Brillante is a new range of stainless steel for wall cladding and security or ventilation panels. The gratings are made from flat vertical bars and round transverse bars in a square or rectangular mesh and are available in panel sizes up to 6000x1000mm.

Brillante-x: mesh 34x38mm

Brillante-x2: mesh 68x25mm

Stainless Steel Grade: AISI 304

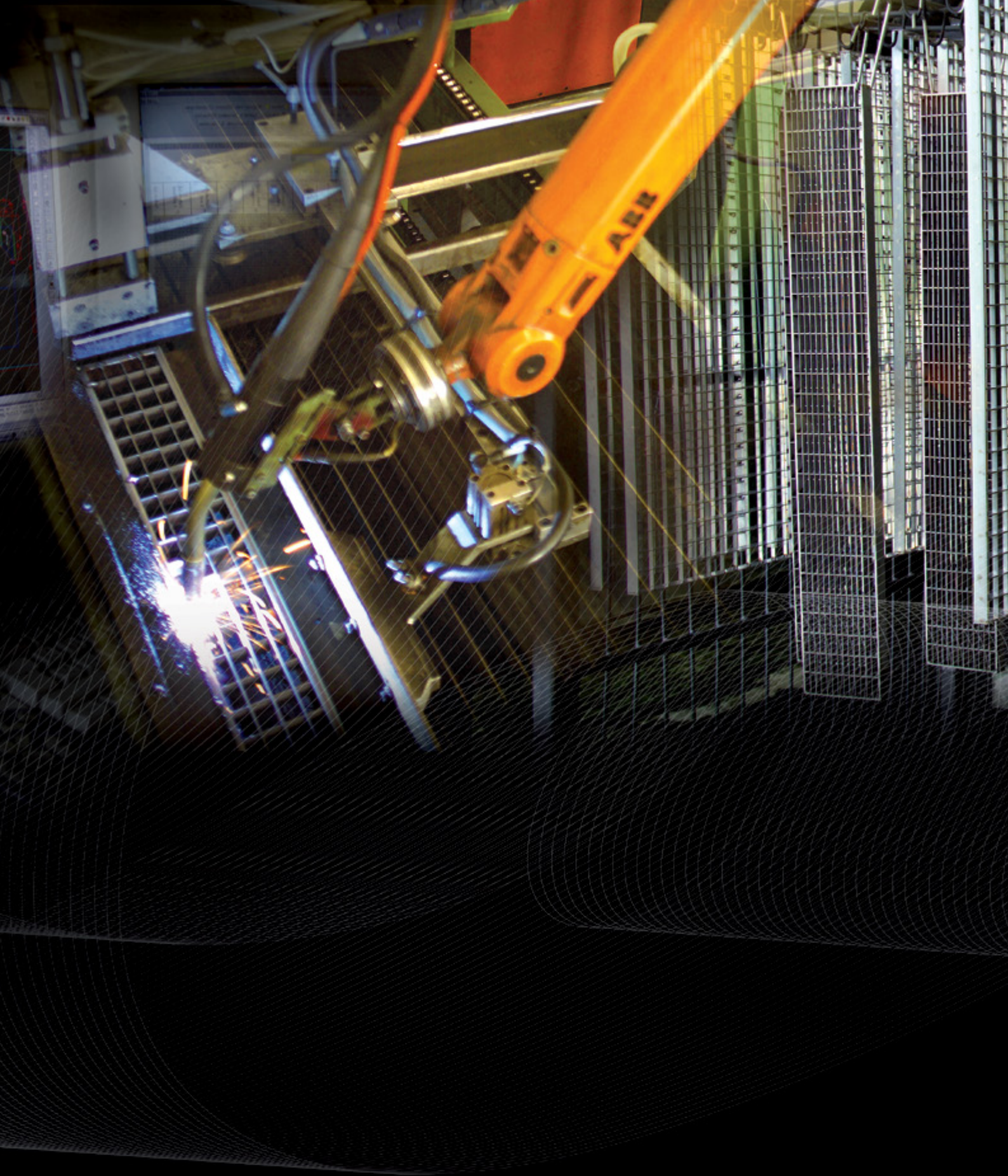


DeltaBox/SS is a pressure locked stainless steel louvre for wall cladding and screening, delivering an exceptional finish for the most prestigious projects.

The louvred panels are made to custom sizes with the louvres set at varying centres, depending on the required degree of visual screening and ventilation.

Grades: AISI 304, AISI 316 and AISI 316L





LANG+FULTON

Lang & Fulton Ltd, Newbridge Industrial Estate, Newbridge, Edinburgh EH28 8PJ
t: 0131 441 1255 sales@langandfulton.co.uk www.langandfulton.co.uk