HADDONSTONE

Fine garden ornaments and architectural stonework

ARCHITECTURAL STONEWORK BALUSTRADES

THERE ARE FOUR TYPES OF BALUSTRADE:

The Standard Range

Illustrated on pages 137, 138 and 139, the standard range is available in six styles: Flat, Part-Weathered or Weathered, each available to suit central or side run-in situations, with a choice of standard balusters. If balustrades are to be used as a parapet wall or a raised terrace edge, we have several optional under-copings that can be used below plinth course to increase the height of the balustrade, or to cope a substructure.

The 1100 Balustrade

Shown on page 140, this is a heavier balustrade designed to comply with the Building Regulation height of 1100mm (43 5/16") required in certain instances. It comprises a weathered rail, weathered plinth, Georgian-style baluster and rectangular pier.

The Kensington Balustrade (USA only)

Shown on page 140, this is an imposing balustrade of handsome proportions.

It comprises weathered rail, upper and lower plinths, Regency-style K610B square balusters and rectangular piers. The plinth moulding is used to frame the inset panel of the pier shaft.

The Spiral Balustrade

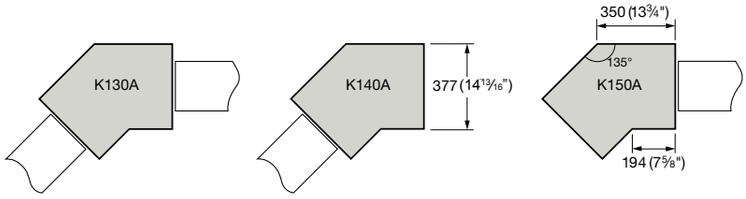
Shown on page 141, the Spiral Balustrade is available only with flat rail, K533G-style baluster, standard style of plinth and optional T920 style of under-coping to the radii and falls indicated.

The Standard Range
Style FC: Flat Central Run-in

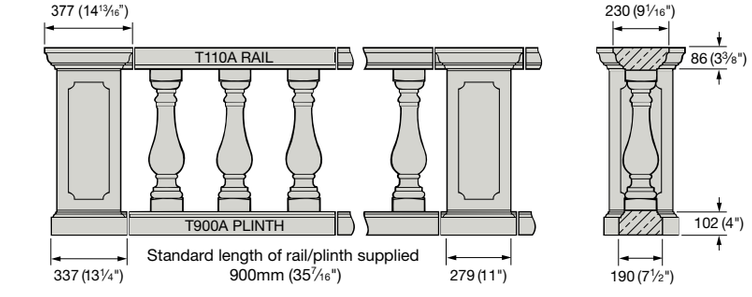
See page 144 for balusters.

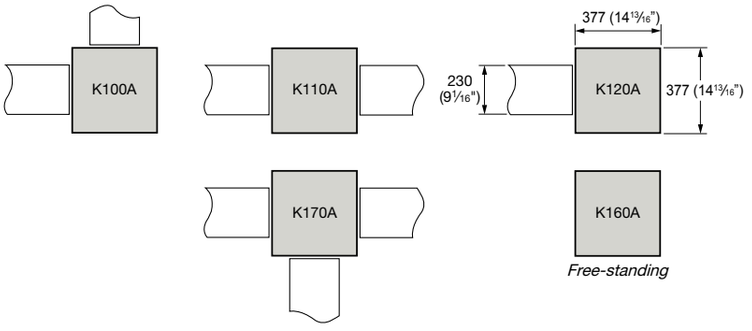
TS Tech Sheet No.B10 & B70

Plans below show Pier Caps.
For component weights see page 143



FC style with K533G Balusters/T930 Under Copings



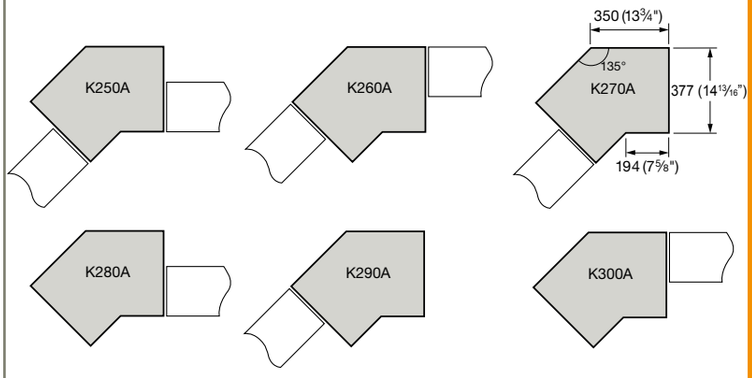


The Standard Range
Style FS: Flat Side Run-in

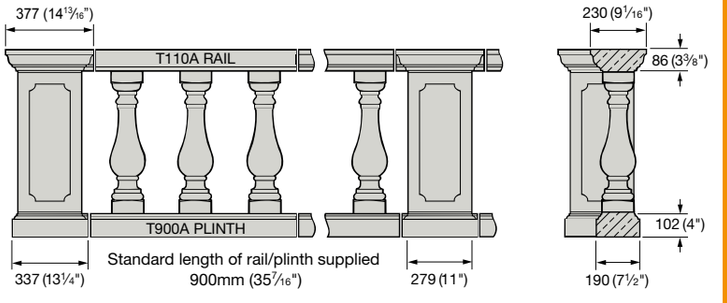
See page 144 for balusters.

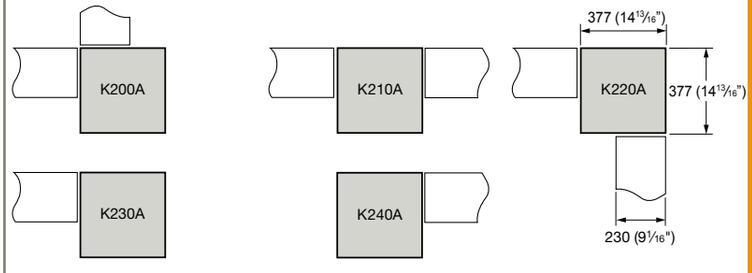
TS Tech Sheet No. B15 & B70

Plans below show Pier Caps.
For component weights see page 143.



FS style with K533G Balusters/T925 Under Copings



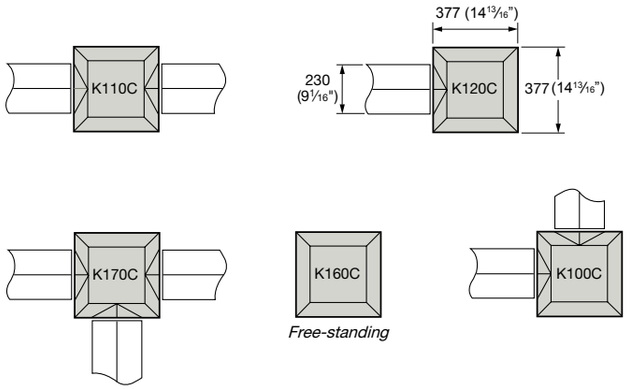


The Standard Range
Style PC: Part-Weathered Central Run-in

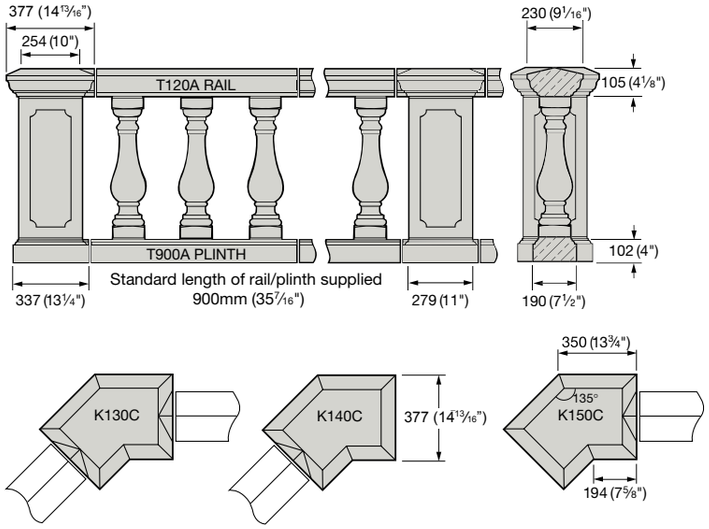
See page 144 for balusters.

TS Tech Sheet No.B20

Plans below show Pier Caps.
For component weights see page 143.



PC style with K457G Balusters / Q560 Plinth (custom piers)

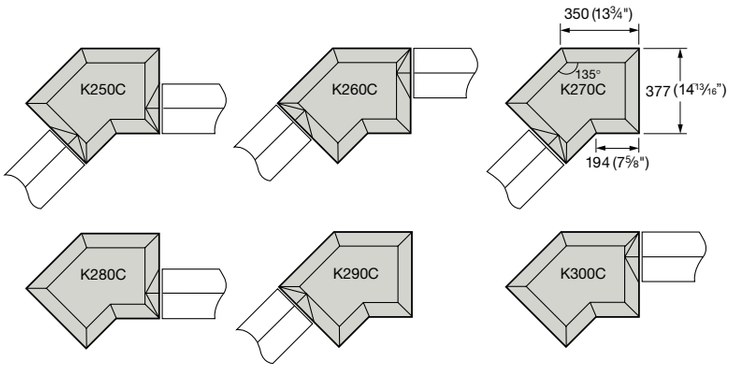


The Standard Range
Style PS: Part-Weathered Side Run-in

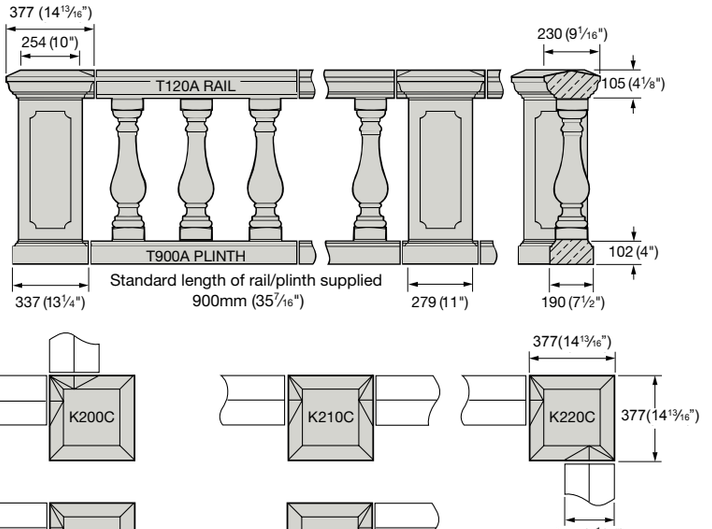
See page 144 for balusters.

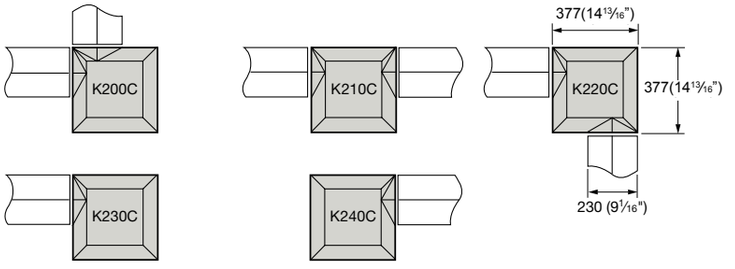
TS Tech Sheet No. B25

Plans below show Pier Caps.
For component weights see page 143.



PS style with K533G Balusters





Custom-made products are available on request.

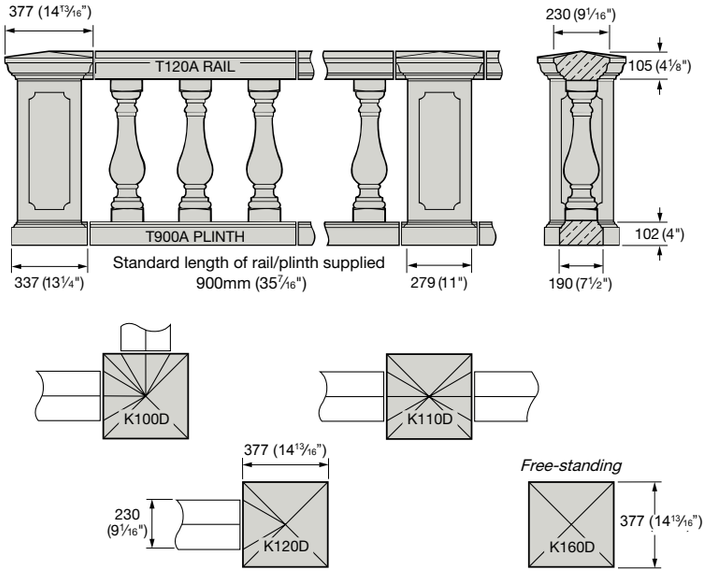
The Standard Range
Style WC: Weathered Central Run-in

See page 144 for balusters.

TS Tech Sheet No.B35

Plans below show Pier Caps.
For component weights see page 143.

WC style with K610G Balusters



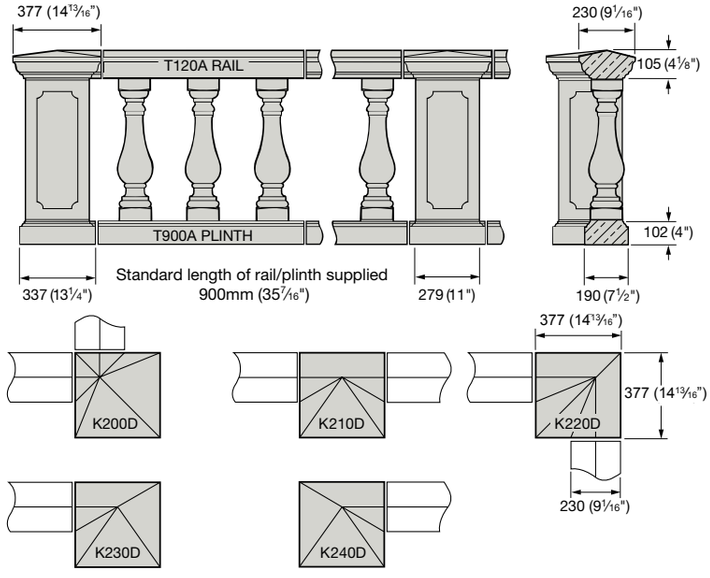
The Standard Range
Style WS: Weathered Side Run-in

See page 144 for balusters.

TS Tech Sheet No. B35

Plans below show Pier Caps.
For component weights see page 143.

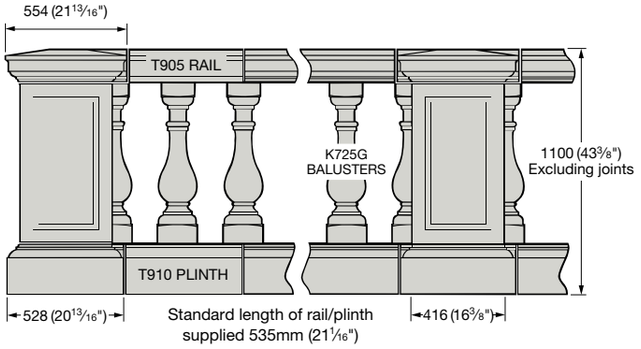
WS style with K533G Balusters



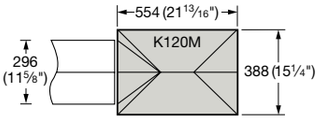
The 1100 Balustrade

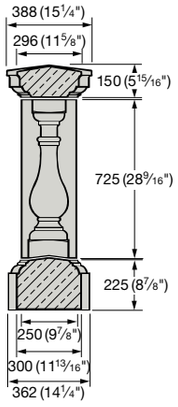
The 1100 Balustrade is offered as an alternative to the Standard Range should you require a heavier design of balustrading. It also complies with the Building Regulation height of 1100mm (43⅝"), which is required in certain instances, without the need to use additional under-copings or to construct upstands.

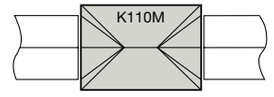
TS Tech Sheet No. B40

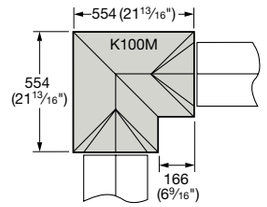


K725G Baluster - 20kg (44 lb)
Standard Pier (complete) - 212kg (466 lb)
Corner Pier (complete) - 296kg (651 lb)
T905 Rail - 67kg/m (45 lb/ft)
T910 Plinth - 121kg/m (81 lb/ft)







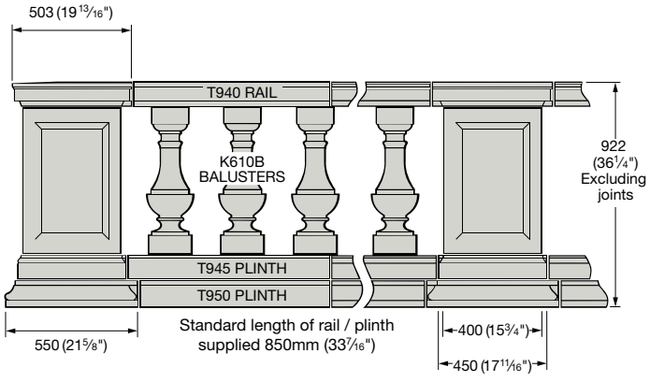


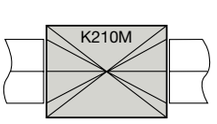
PLANS SHOW PIER CAPS

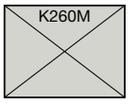
The Kensington Balustrade (USA only)

The Kensington Balustrade is an imposing balustrade of handsome proportions. It comprises weathered rail, upper and lower plinths, unique K610B square balusters and rectangular piers. The plinth moulding is used to frame the inset panel of the pier shaft.

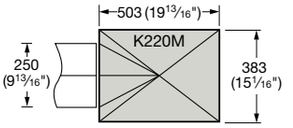
TS Tech Sheet No. B45



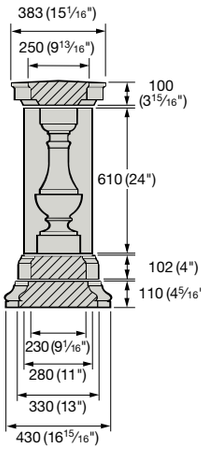


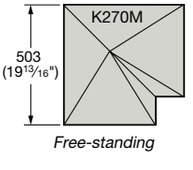


Free-standing

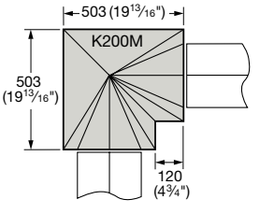


PLANS SHOW PIER CAPS



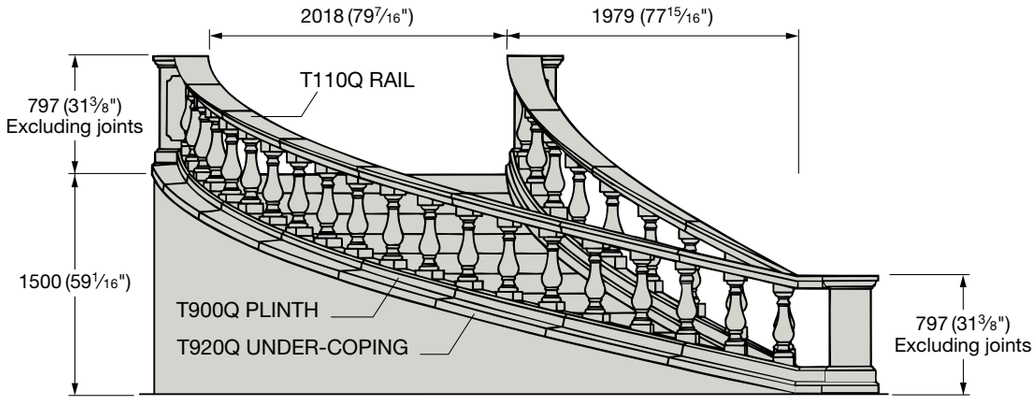


Free-standing



K610B Baluster - 21kg (46 lb)	
K200 Corner Pier (complete) - 300kg (660 lb)	
K210 Intermediate Pier (complete) K220 Terminal Pier (complete) K260 Freestanding Pier (complete)	232kg (510 lb)
T940 Rail - 37kg/m (25 lb/ft)	
T945 Upper Plinth - 41kg/m (28 lb/ft)	
T950 Lower Plinth - 57kg/m (38 lb/ft)	

Custom-made products are available on request.



Left hand Spiral Balustrade illustrated above.

The Spiral Balustrade

This is a very special type of balustrade and can be offered, as standard, only in the components and dimensions indicated in the table below.

TS Tech Sheet No. B60

Dimensions
Left and Right-handed 90° sweeps:
Total Rise: 1500mm (59 1/16")
Outer c/l Radius: 4112mm (161 7/8")
Inner c/l Radius: 1865mm (73 7/16")
Width of Staircase: 2018mm (79 7/16")

Components
FS-style balustrade comprising:
T110-style Rail
T900-style Plinth
KG533-style Baluster
T920-style Under-Coping (optional)

ARCHITECTURAL STONEWORK BALUSTRADES

Assembly Details

We recommend that non-ferrous fixings (available as part of the X950 Balustrade Installation Pack - UK only) be incorporated at all rail joints and in horizontal beddings in all cases. All balusters are supplied with stainless steel dowels for installing to rails and plinths. All rails, plinths and under-copings are supplied in standard lengths, cutting and drilling to final specification to be undertaken by your installation contractor.

Professional advice should be taken particularly where Building Regulations / Codes and local bye-laws need to be complied with. It is recommended that, if pier shafts are in-filled with concrete, the shaft section should be lined with polystyrene, Styrofoam or similar to act as an isolating medium.

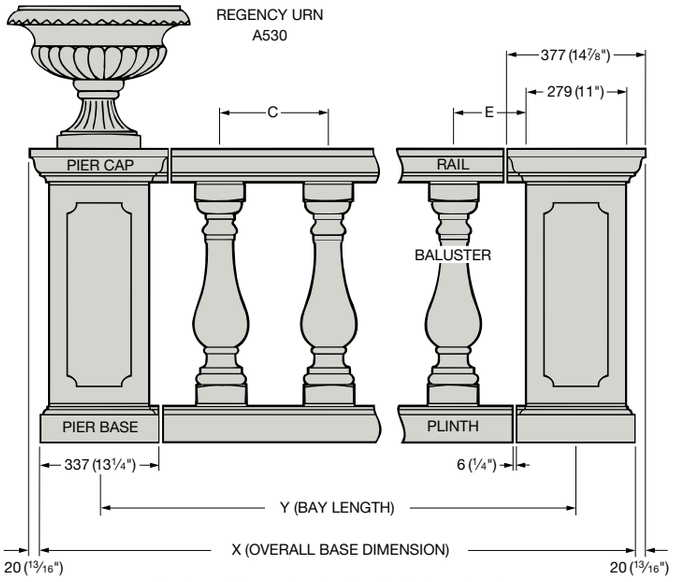
Haddoncraft Forge has a range of wrought iron Baluster Bars for use in conjunction with Haddonstone balustrading, see image below. The bars can be used to meet Building Regulation spacing requirements.

PS style with K610G Balusters and T920 Under-Copings

FS style with K724G Balusters

Haddoncraft Forge Baluster Bar

THE STANDARD RANGE



C = Centre Baluster Spacing. E = End Baluster Spacing

It is most important to refer to Tech Sheet GAR1 to ensure correct installation. Standard assembly recommendations and typical details are available on request. Please ask for the relevant Tech Sheet.

Cutting Recommendations:
TS Tech Sheet No. B50

General Assembly:
TS Tech Sheet No. GAR1

TABLE A

For normal baluster spacing: approx. 305mm (12") centres

Select highest band available unless there are other overriding factors

Band	Bay Lengths (centreline to centreline of piers) in mm	Bay Lengths (centreline to centreline of piers) in inches	Rails/Plinths No. of 900mm (35 7/16") long rails/plinths and under-copings where applicable)	Balusters
1	-829	-32 5/8"	1	1
2	830-1129	32 11/16"-44 7/16"	1	2
3	1130-1249	44 1/2"-49 3/16"	1	3
4	1250-1429	49 1/4"-56 1/4"	2	3
5	1430-1729	56 5/16"-68 1/16"	2	4
6	1730-2029	68 1/8"-79 7/8"	2	5
7	2030-2155	79 15/16"-84 13/16"	2	6
8	2156-2329	84 7/8"-91 11/16"	3	6
9	2330-2629	91 3/4"-103 1/2"	3	7
10	2630-2929	103 9/16"-115 5/16"	3	8
11	2930-3061	115 3/8"-120 1/2"	3	9
12	3062-3229	120 9/16"-127 1/8"	4	9
13	3230-3529	127 3/16"-138 15/16"	4	10
14	3530-3829	139"-150 3/4"	4	11
15	3830-3967	150 13/16"-156 1/8"	4	12

This table has been compiled to give an approximate Centre Baluster Spacing (see diagram) of 305mm (12") and a fixed End Baluster Spacing of 200mm (8").

Custom-made products are available on request.

The Standard Range

Tables A, B, C, D and E have been compiled to simplify the ordering of the STANDARD RANGE of balustrade components and enable you to design and price your own balustrade. Alternatively, approximate guide prices can be obtained from the price list.

You will also find below tables of the many horizontal curves and ramps available in the STANDARD RANGE – these are shown in Tables C and D.

The terms Weathered and Part-Weathered refer to the style of the balustrading rails and caps and not to the maturity of the stonework. For standard colours and finishes see page 206.

Haddonstone (USA) Ltd offers additional Balustrades and Parapet Screening designs to comply with specific Building Codes. For further details, refer to the Architectural Supplement or view:

www.haddonstone.com/view-catalogue

HOW TO USE TABLES A and B

By following this simple procedure you will be able to design, price and order your own balustrade from the STANDARD RANGE:

1. Choose type of baluster (see page 144) and style of balustrade (see pages 137, 138 and 139).

2. Measure the overall base dimension of each run of balustrade giving consideration to the fact that, particularly where balustrade abuts a wall, the cap oversails the base by 20mm (13⁄16”), see diagram opposite.

3. Divide each run into suitable bays, generally incorporating piers at ends and corners.

4. When determining bay lengths, as a guideline, the highest band should be selected, but other overriding factors may need to be taken into account, such as achieving aesthetic balance, correlating with other architectural elements, relating bays to the height of the balustrade and the overall scale of the surroundings.

5. To calculate bay lengths, first deduct 337mm (13¼”) from the overall base dimension to determine the distance between the centres of the end piers, then divide this figure by the number of bays required. Then refer to Tables A and B.

6. Should extra height be required or coping to a substructure, select appropriate under-coping to suit balustrade type (see page 145).

7. Choose piers to suit balustrade layout, i.e. number of end piers, number of intermediate piers, number of corner piers.

8. ORDER CHECKLIST

The order should comprise total number of balusters, total number of rails, total number of plinths, total number of piers incorporating end piers, intermediate piers and corner piers as required.

TABLE B

For close baluster spacing: approx. 225mm (9”) centres

Select highest band available unless there are other overriding factors

	Bay Lengths		Rails/Plinths	
Balusters Band	(centreline to centreline of piers) in mm	(centreline to centreline of piers) in inches	No. of 900mm (35 7⁄16”) long rails/plinths (and under-copings where applicable)	Balusters
16	-691	-27 3/16”	1	1
17	692-916	27 1/4”-36 1/16”	1	2
18	917-1141	36 1/8”-44 15/16”	1	3
19	1142-1249	45”-49 3/16”	1	4
20	1250-1366	49 1/4”-53 3/4”	2	4
21	1367-1591	53 13/16”-62 5/8”	2	5
22	1592-1816	62 11/16”-71 1/2”	2	6
23	1817-2041	71 9/16”-80 3/8”	2	7
24	2042-2155	80 7/16”-84 13/16”	2	8
25	2156-2266	84 7/8”-89 3/16”	3	8
26	2267-2491	89 1/4”-98 1/16”	3	9
27	2492-2716	98 1/8”-106 15/16”	3	10
28	2717-2941	107”-115 13/16”	3	11
29	2942-3061	115 7/8”-120 1/2”	3	12
30	3062-3166	120 9/16”-124 5/8”	4	12
31	3167-3391	124 11/16”-133 1/2”	4	13
32	3392-3616	133 9/16”-142 3/8”	4	14
33	3617-3841	142 7/16”-151 1/4”	4	15
34	3842-3967	151 5/16”-156 1/8”	4	16

This table has been compiled to give an approximate Centre Baluster Spacing (see diagram) of 225mm (9”) and a fixed End Baluster Spacing of 150mm (6”).

TABLE C

Horizontal Curved Balustrade Rails and Plinths

Available in both Flat and Weathered configurations in the following radii:

500mm (19 11/16”)
1000mm (39 3/8”)
1500mm (59 1/16”)
2000mm (78 3/4”)
2500mm (98 7/16”)
3000mm (118 1/8”)
3500mm (137 13/16”)
4000mm (157 1/2”)
4500mm (177 3/16”)
5000mm (196 7/8”)
6000mm (236 1/4”)
7000mm (275 9/16”)
8000mm (314 15/16”)
9000mm (354 5/16”)
10000mm (393 11/16”)

All radii to centrelines of plinth/rail.

TABLE D

Ramped Balusters

KG311	16° 18° 27°
KG356	20° 27°
KG430	13°
KG457	13° 20° 27° 30° 33° 40°
KG464	16° 23°
KG520	23°
KG533	13° 16° 20° 21° 27° 30° 36°
KB609	27° 33° 42°
KG609	30°
KG610	13° 16° 20° 21° 23° 27° 30° 33° 36°
KJ610	27° 30° 36°
KG629	20° 27° 29° 31° 33°
KG724	13° 16° 20° 23° 26° 27° 29° 30° 33°
KG725	34° 1100 Balustrade

The ramp angle is the angle of rise/pitch measured from the horizontal.

TABLE E

Typical Component Weights

Baluster Type:	K724G	K610G	K533G	K457G	K356G
	15kg (33 lb)	11kg (24 lb)	10kg (22 lb)	8kg (18 lb)	4.5kg (10 lb)
Standard pier to suit (complete):	105kg (231 lb)	97kg (214 lb)	87kg (191 lb)	81kg (178 lb)	75kg (165 lb)
135° pier to suit (complete):	154kg (339 lb)	147kg (323 lb)	134kg (295 lb)	121kg (266 lb)	120kg (264 lb)

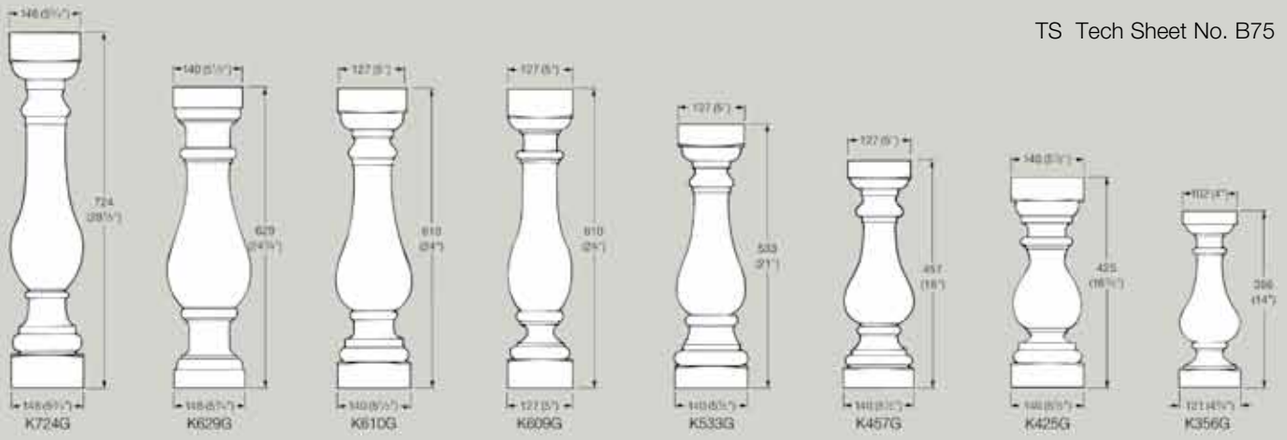
T120A 900mm Standard Rail 31kg (68 lb)

T900A 900mm Standard Plinth 30kg (66 lb)

ARCHITECTURAL STONEWORK BALUSTRADES

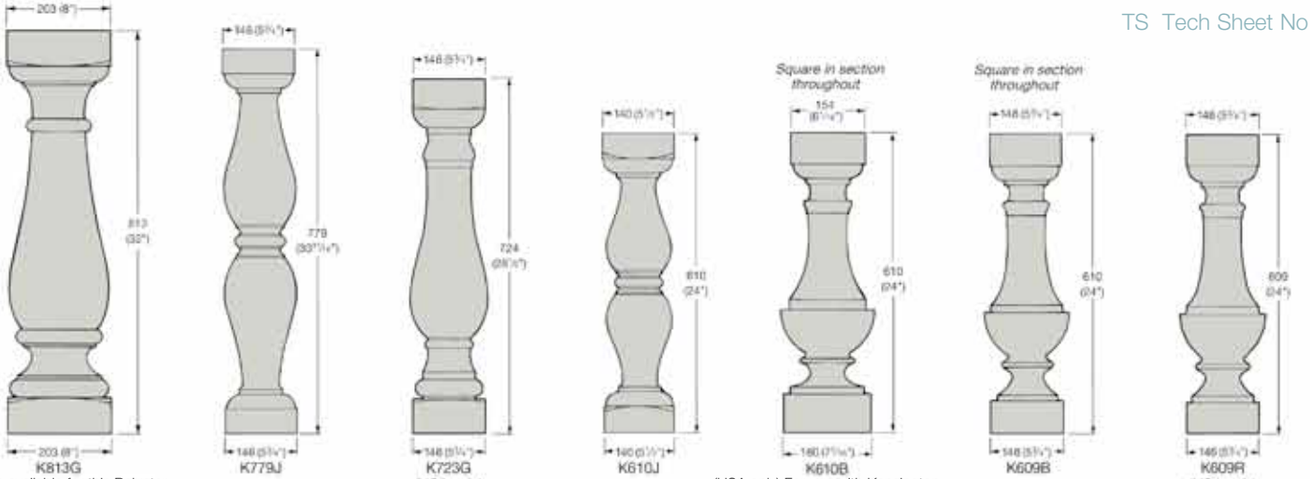
Standard Balusters These balusters are circular in section except top and bottom blocks which are square.

TS Tech Sheet No. B75



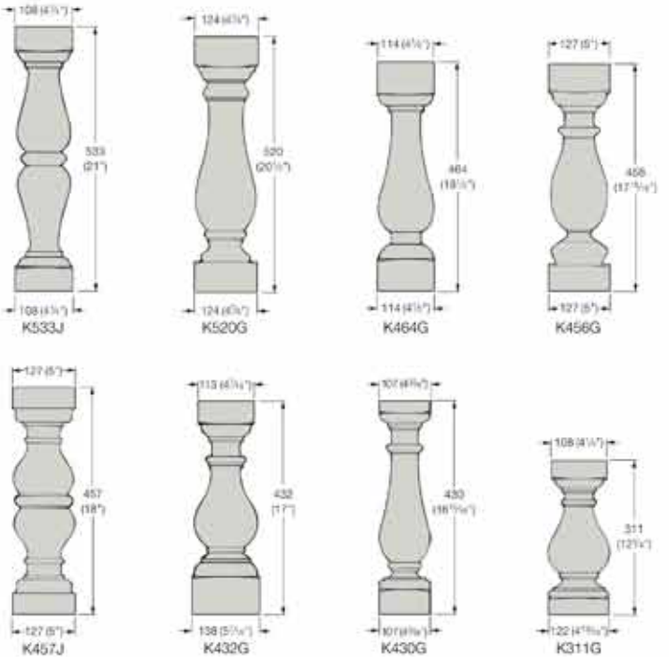
Non Standard Balusters Unless otherwise stated, these balusters are circular in section except top and bottom blocks which are square.

TS Tech Sheet No. B75



No piers available for this Baluster.
For suitable rails and plinths see page 150.

(USA only) For use with Kensington Balustrade, see page 140.



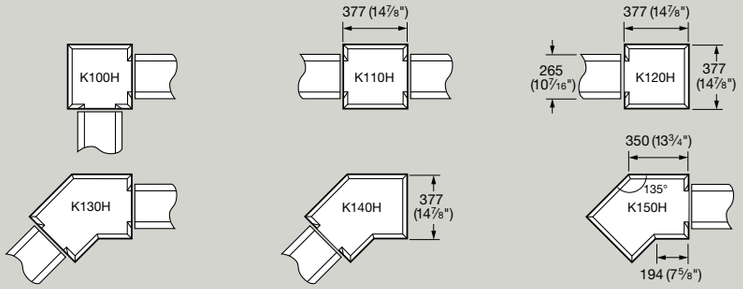
FS style with KG533 Ramped Balusters and T920 Wide Under-Copings

BALUSTRADE UNDER-COPINGS Optional, for use with the standard balustrade range. Available in 900mm (35 7/16") lengths only.

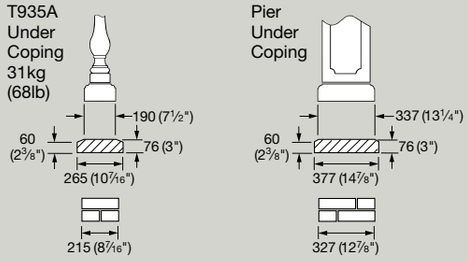
Pier Under-Coping 20kg (44 lb) 135° Pier Under-Coping 29kg (64 lb)

Narrow Central Run-In Under Copings

TS Tech Sheet No. B90



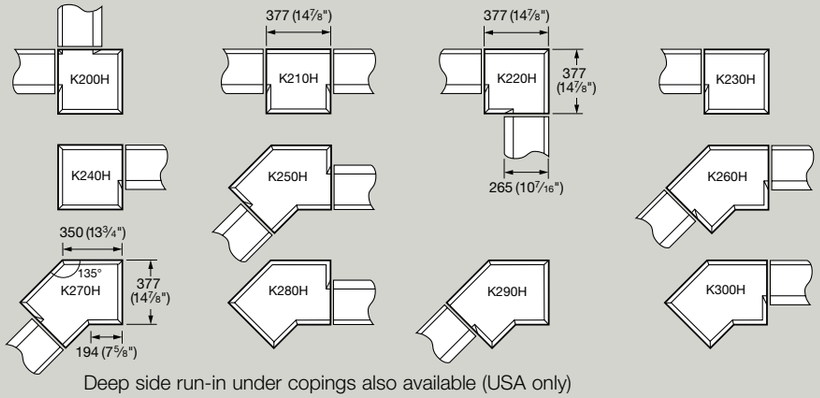
Deep cental run-in under copings also available (USA only)



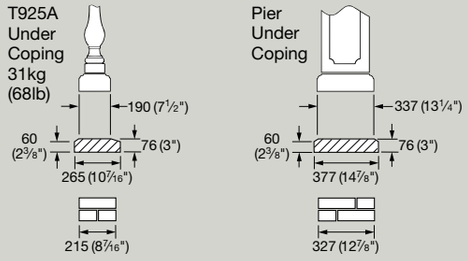
Plans show Pier Under-Copings

Narrow Side Run-In Under Copings

TS Tech Sheet No. B91



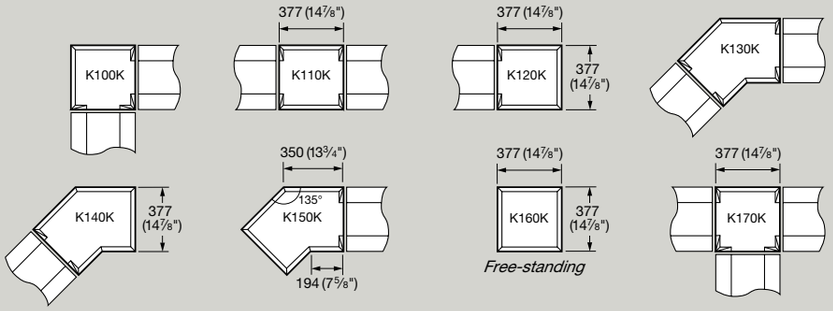
Deep side run-in under copings also available (USA only)

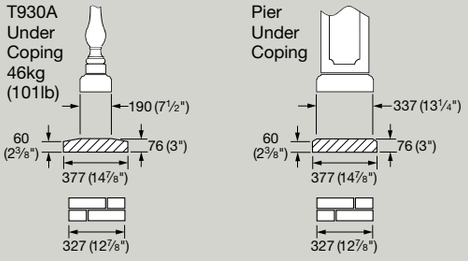


Plans show Pier Under-Copings

Wide Central Run-In Under Copings

TS Tech Sheet No. B92

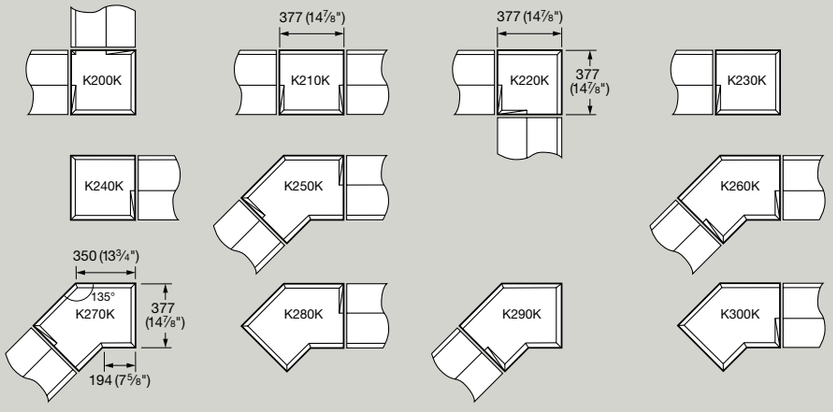


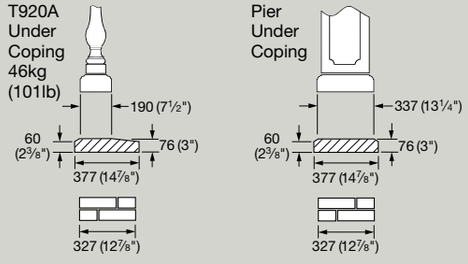


Plans show Pier Under-Copings

Wide Side Run-In Under Copings

TS Tech Sheet No. B93





Plans show Pier Under-Copings

ARCHITECTURAL STONEWORK
PARAPET SCREENING

For a less formal and more decorative alternative to balustrading, parapet screening provides an effective solution.

As shown in the drawings, the length of parapet unit can be varied by using different combinations of the two basic panels J248 and J362. We show six of the most commonly used bays (TYPES A-F). The bay dimensions shown are from centreline to centreline of pier.

The piers are specially designed and produced for end, centre and corner use as well as for 135° angles; so when ordering please state clearly the number and reference of each type required.

All rails and plinths are supplied in standard lengths as indicated, cutting to final specification to be undertaken by your installation contractor.

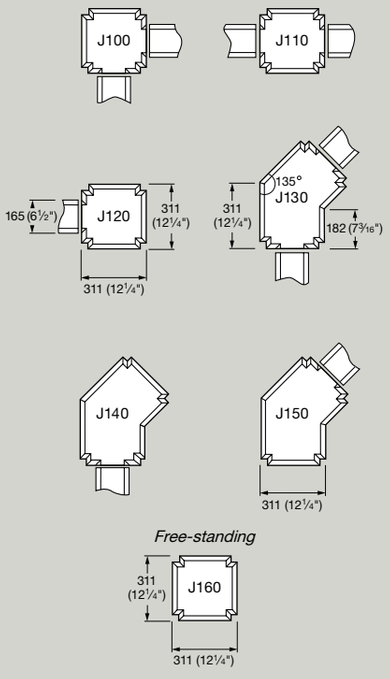
TS Tech Sheet No. PS10 & PS11

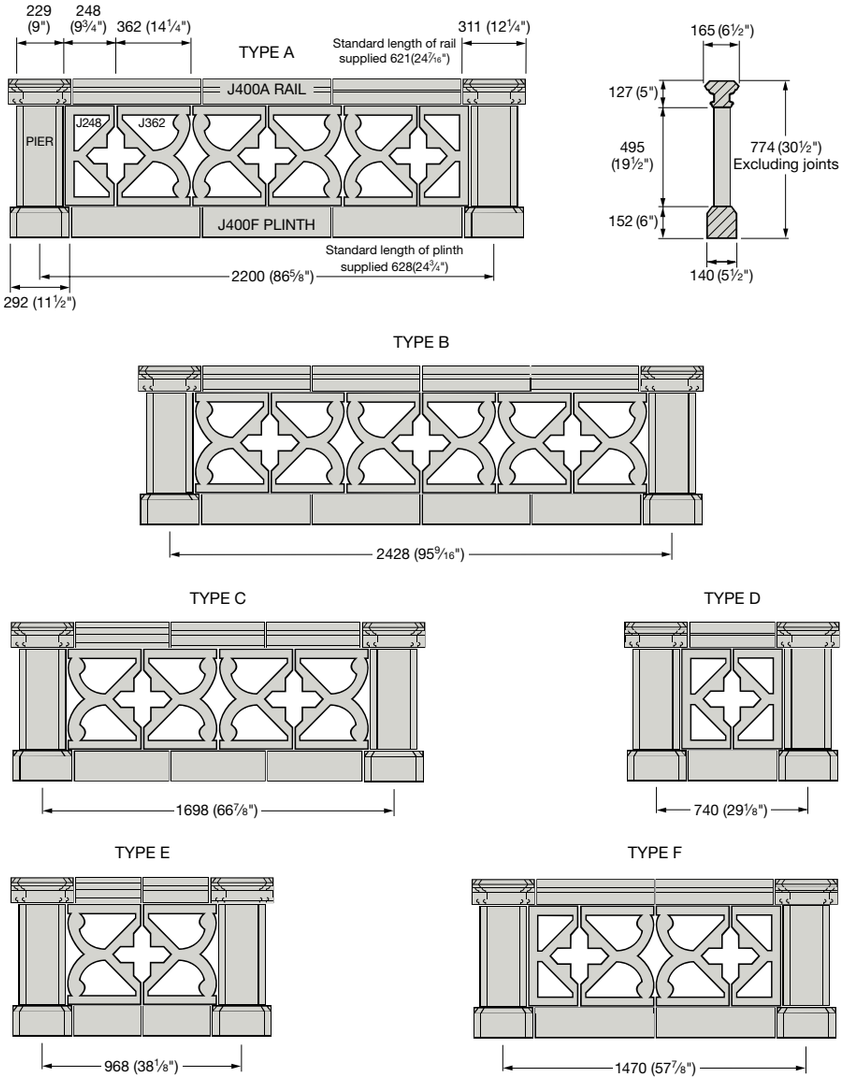
Parapet Screening (showing TYPE F bay)

Typical Component Weights

J400A Rail: 16kg (35 lb)
J400F Plinth: 25kg (55 lb)
J248 End Panel: 9kg (20 lb)
J362 Centre Panel: 13kg (29 lb)
Standard Pier (complete): 76kg (167 lb)
135° Pier (complete): 151kg (332 lb)

Plans showing Pier Caps





Custom-made products are available on request.

Refer to the Architectural Supplement for specific US designs.

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