

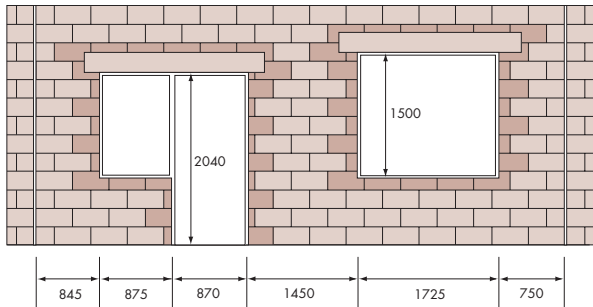
INTRODUCTION

When detailing masonry panels, the designer should set out masonry units to full or half block lengths where possible to avoid unsightly and unnecessary cutting of units on site. Co-ordinating dimensions will also ensure that the masonry is properly bonded.

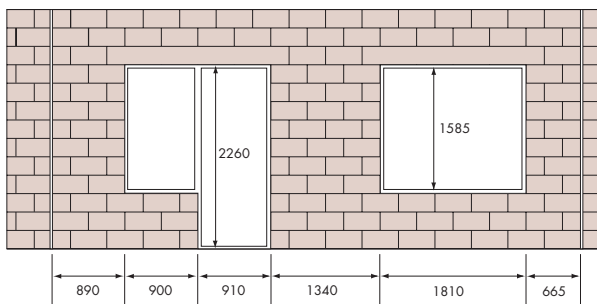
Figure 1, contrasts the effects of an unco-ordinated and co-ordinated approach to setting out of masonry. (Using 440 x 215mm blocks as an example).

FIG. 1 SETTING OUT

Unco-ordinated approach



Co-ordinated approach

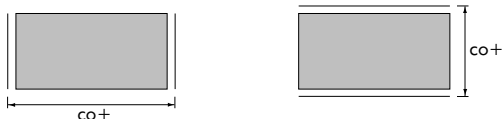


Tables 6 to 9 enable the vertical and horizontal co-ordination of 390 x 190mm and 440 x 215mm block face sizes to be set out at the design stage.

USE OF TABLES

Step 1 Using the wall configuration to be considered, select the appropriate co-ordination factor column from the tables, ie CO+, CO or CO- :

CO+ This is the co-ordinated size plus a joint (ie, actual block length or height + 2 joints)



CO This is the co-ordinated size (ie, actual block length or height + 1 joint)



HELPFUL HINT

Bed Joint Reinforcement should be introduced in the blockwork panels, above and below the openings in Fig 1. See also page 9.

CO- This is the co-ordinated size minus a joint (ie, actual block length or height).



Step 2 From the selected co-ordination factor column, find the required blockwork dimension and then read off the related number of blocks.

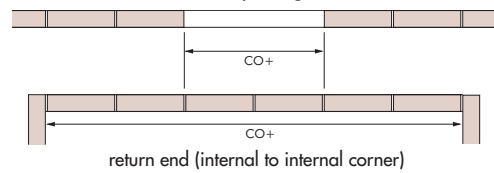
Tables are provided for guidance purposes only. Consideration should be given to allow for the discontinuation of panels when movement joints are incorporated (generally 9m externally and a maximum of 12.2m internally.)

Forticrete cannot be held responsible for errors in the final design. All dimensions should be checked by the designer. Reference should also be made to BS 8000 Part 3 'Code of practice for masonry' which covers allowable building tolerances on site.

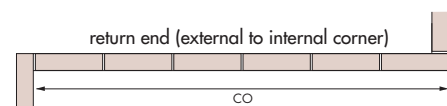
PRINCIPLES OF TABLES

All blockwork dimensions are determined by one of three alternatives which relate to specific wall configurations.

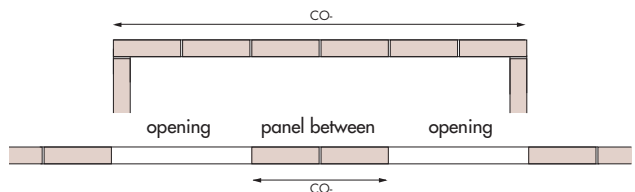
1. Co-ordinated size plus a joint (CO+) i.e. door and window openings



2. Co-ordinated size (CO) i.e. block panels with opposite return ends or quoins.



3. Co-ordinated size minus a joint (CO-) i.e. block piers or panels between openings.



USING 5mm JOINTS

Regency Ashlar Traditional and City Bonds in the Regency range are also manufactured to larger sizes to accommodate 5mm mortar joints. This requires careful consideration with regard to setting out and also in the use of wall ties and bed joint reinforcement.

TABLE 6 HORIZONTAL BLOCKWORK CO-ORDINATING DIMENSIONS USING 390 X 190mm BLOCKS

No of blocks	CO+	CO	CO-	No of blocks	CO+	CO	CO-	No of blocks	CO+	CO	CO-	
1	0.5	210	200	190	25	10010	10000	9990	49.5	19810	19800	19790
1	1.5	410	400	390	25.5	10210	10200	10190	50	20010	20000	19990
2	2.5	610	600	590	26	10410	10400	10390	50.5	20210	20200	20190
2	3.5	810	800	790	26.5	10610	10600	10590	51	20410	20400	20390
3	4.5	1010	1000	990	27	10810	10800	10790	51.5	20610	20600	20590
3	5.5	1210	1200	1190	27.5	11010	11000	10990	52	20810	20800	20790
4	6.5	1410	1400	1390	28	11210	11200	11190	52.5	21010	21000	20990
4	7.5	1610	1600	1590	28.5	11410	11400	11390	53	21210	21200	21190
5	8.5	1810	1800	1790	29	11610	11600	11590	53.5	21410	21400	21390
5	9.5	2010	2000	1990	29.5	11810	11800	11790	54	21610	21600	21590
6	10.5	2210	2200	2190	30	12010	12000	11990	54.5	21810	21800	21790
6	11.5	2410	2400	2390	30.5	12210	12200	12190	55	22010	22000	21990
7	12.5	2610	2600	2590	31	12410	12400	12390	55.5	22210	22200	22190
7	13.5	2810	2800	2790	31.5	12610	12600	12590	56	22410	22400	22390
8	14.5	3010	3000	2990	32	12810	12800	12790	56.5	22610	22600	22590
8	15.5	3210	3200	3190	32.5	13010	13000	12990	57	22810	22800	22790
9	16.5	3410	3400	3390	33	13210	13200	13190	57.5	23010	23000	22990
9	17.5	3610	3600	3590	33.5	13410	13400	13390	58	23210	23200	23190
10	18.5	3810	3800	3790	34	13610	13600	13590	58.5	23410	23400	23390
10	19.5	4010	4000	3990	34.5	13810	13800	13790	59	23610	23600	23590
11	20.5	4210	4200	4190	35	14010	14000	13990	59.5	23810	23800	23790
11	21.5	4410	4400	4390	35.5	14210	14200	14190	60	24010	24000	23990
12	22.5	4610	4600	4590	36	14410	14400	14390	60.5	24210	24200	24190
12	23.5	4810	4800	4790	36.5	14610	14600	14590	61	24410	24400	24390
13	24.5	5010	5000	4990	37	14810	14800	14790	61.5	24610	24600	24590
13	25.5	5210	5200	5190	37.5	15010	15000	14990	62	24810	24800	24790
14	26.5	5410	5400	5390	38	15210	15200	15190	62.5	25010	25000	24990
14	27.5	5610	5600	5590	38.5	15410	15400	15390	63	25210	25200	25190
15	28.5	5810	5800	5790	39	15610	15600	15590	63.5	25410	25400	25390
15	29.5	6010	6000	5990	39.5	15810	15800	15790	64	25610	25600	25590
16	30.5	6210	6200	6190	40	16010	16000	15990	64.5	25810	25800	25790
16	31.5	6410	6400	6390	40.5	16210	16200	16190	65	26010	26000	25990
17	32.5	6610	6600	6590	41	16410	16400	16390	65.5	26210	26200	26190
17	33.5	6810	6800	6790	41.5	16610	16600	16590	66	26410	26400	26390
18	34.5	7010	7000	6990	42	16810	16800	16790	66.5	26610	26600	26590
18	35.5	7210	7200	7190	42.5	17010	17000	16990	67	26810	26800	26790
19	36.5	7410	7400	7390	43	17210	17200	17190	67.5	27010	27000	26990
19	37.5	7610	7600	7590	43.5	17410	17400	17390	68	27210	27200	27190
20	38.5	7810	7800	7790	44	17610	17600	17590	68.5	27410	27400	27390
20	39.5	8010	8000	7990	44.5	17810	17800	17790	69	27610	27600	27590
21	40.5	8210	8200	8190	45	18010	18000	17990	69.5	27810	27800	27790
21	41.5	8410	8400	8390	45.5	18210	18200	18190	70	28010	28000	27990
22	42.5	8610	8600	8590	46	18410	18400	18390	70.5	28210	28200	28190
22	43.5	8810	8800	8790	46.5	18610	18600	18590	71	28410	28400	28390
23	44.5	9010	9000	8990	47	18810	18800	18790	71.5	28610	28600	28590
23	45.5	9210	9200	9190	47.5	19010	19000	18990	72	28810	28800	28790
24	46.5	9410	9400	9390	48	19210	19200	19190	72.5	29010	29000	28990
24	47.5	9610	9600	9590	48.5	19410	19400	19390	73	29210	29200	29190
	48.5	9810	9800	9790	49	19610	19600	19590	73.5	29410	29400	29390

TABLE 7 VERTICAL BLOCKWORK CO-ORDINATING DIMENSIONS USING 390 X 190mm BLOCKS

No of blocks	CO+	CO	No of blocks	CO+	CO	No of blocks	CO+	CO
1	210	200	21	4210	4200	41	8210	8200
2	410	400	22	4410	4400	42	8410	8400
3	610	600	23	4610	4600	43	8610	8600
4	810	800	24	4810	4800	44	8810	8800
5	1010	1000	25	5010	5000	45	9010	9000
6	1210	1200	26	5210	5200	46	9210	9200
7	1410	1400	27	5410	5400	47	9410	9400
8	1610	1600	28	5610	5600	48	9610	9600
9	1810	1800	29	5810	5800	49	9810	9800
10	2010	2000	30	6010	6000	50	10010	10000
11	2210	2200	31	6210	6200	51	10210	10200
12	2410	2400	32	6410	6400	52	10410	10400
13	2610	2600	33	6610	6600	53	10610	10600
14	2810	2800	34	6810	6800	54	10810	10800
15	3010	3000	35	7010	7000	55	11010	11000
16	3210	3200	36	7210	7200	56	11210	11200
17	3410	3400	37	7410	7400	57	11410	11400
18	3610	3600	38	7610	7600	58	11610	11600
19	3810	3800	39	7810	7800	59	11810	11800
20	4010	4000	40	8010	8000	60	12010	12000

TABLE 8 HORIZONTAL BLOCKWORK CO-ORDINATING DIMENSIONS USING 440 X 215mm BLOCKS

No of blocks	CO+	CO	CO-	No of blocks	CO+	CO	CO-	No of blocks	CO+	CO	CO-	
1	0.5	235	225	215	25	11260	11250	11240	49.5	22285	22275	22265
2	1.5	460	450	440	26	11485	11475	11465	50	22510	22500	22490
3	2.5	685	675	665	27	11710	11700	11690	51	22735	22725	22715
4	3.5	910	900	890	28	11935	11925	11915	52	22960	22950	22940
5	4.5	1135	1125	1115	29	12160	12150	12140	53	23185	23175	23165
6	5.5	1360	1350	1340	30	12385	12375	12365	54	23410	23400	23390
7	6.5	1585	1575	1565	31	12610	12600	12590	55	23635	23625	23615
8	7.5	1810	1800	1790	32	12835	12825	12815	56	23860	23850	23840
9	8.5	2035	2025	2015	33	13060	13050	13040	57	24085	24075	24065
10	9.5	2260	2250	2240	34	13285	13275	13265	58	24310	24300	24290
11	10.5	2485	2475	2465	35	13510	13500	13490	59	24535	24525	24515
12	11.5	2710	2700	2690	36	13735	13725	13715	60	24760	24750	24740
13	12.5	2935	2925	2915	37	13960	13950	13940	61	24985	24975	24965
14	13.5	3160	3150	3140	38	14185	14175	14165	62	25210	25200	25190
15	14.5	3385	3375	3365	39	14410	14400	14390	63	25435	25425	25415
16	15.5	3610	3600	3590	40	14635	14625	14615	64	25660	25650	25640
17	16.5	3835	3825	3815	41	14860	14850	14840	65	25885	25875	25865
18	17.5	4060	4050	4040	42	15085	15075	15065	66	26110	26100	26090
19	18.5	4285	4275	4265	43	15310	15300	15290	67	26335	26325	26315
20	19.5	4510	4500	4490	44	15535	15525	15515	68	26560	26550	26540
21	20.5	4735	4725	4715	45	15760	15750	15740	69	26785	26775	26765
22	21.5	4960	4950	4940	46	15985	15975	15965	70	27010	27000	26990
23	22.5	5185	5175	5165	47	16210	16200	16190	71	27235	27225	27215
24	23.5	5410	5400	5390	48	16435	16425	16415	72	27460	27450	27440
	24.5	5635	5625	5615	49	16660	16650	16640	73	27685	27675	27665
		5860	5850	5840		16885	16875	16865		27910	27900	27890
		6085	6075	6065		17110	17100	17090		28135	28125	28115
		6310	6300	6290		17335	17325	17315		28360	28350	28340
		6535	6525	6515		17560	17550	17540		28585	28575	28565
		6760	6750	6740		17785	17775	17765		28810	28800	28790
		6985	6975	6965		18010	18000	17990		29035	29025	29015
		7210	7200	7190		18235	18225	18215		29260	29250	29240
		7435	7425	7415		18460	18450	18440		29485	29475	29465
		7660	7650	7640		18685	18675	18665		29710	29700	29690
		7885	7875	7865		18910	18900	18890		29935	29925	29915
		8110	8100	8090		19135	19125	19115		30160	30150	30140
		8335	8325	8315		19360	19350	19340		30385	30375	30365
		8560	8550	8540		19585	19575	19565		30610	30600	30590
		8785	8775	8765		19810	19800	19790		30835	30825	30815
		9010	9000	8990		20035	20025	20015		31060	31050	31040
		9235	9225	9215		20260	20250	20240		31285	31275	31265
		9460	9450	9440		20485	20475	20465		31510	31500	31490
		9685	9675	9665		20710	20700	20690		31735	31725	31715
		9910	9900	9890		20935	20925	20915		31960	31950	31940
		10135	10125	10115		21160	21150	21140		32185	32175	32165
		10360	10350	10340		21385	21375	21365		32410	32400	32390
		10585	10575	10565		21610	21600	21590		32635	32625	32615
		10810	10800	10790		21835	21825	21815		32860	32850	32840
		11035	11025	11015		22060	22050	22040		33085	33075	33065

TABLE 9 VERTICAL BLOCKWORK CO-ORDINATING DIMENSIONS USING 440 X 215mm BLOCKS

No of blocks	CO+	CO	No of blocks	CO+	CO	No of blocks	CO+	CO
1	235	225	21	4735	4725	41	9235	9225
2	460	450	22	4960	4950	42	9460	9450
3	685	675	23	5185	5175	43	9685	9675
4	910	900	24	5410	5400	44	9910	9900
5	1135	1125	25	5635	5625	45	10135	10125
6	1360	1350	26	5860	5850	46	10360	10350
7	1585	1575	27	6085	6075	47	10585	10575
8	1810	1800	28	6310	6300	48	10810	10800
9	2035	2025	29	6535	6525	49	11035	11025
10	2260	2250	30	6760	6750	50	11260	11250
11	2485	2475	31	6985	6975	51	11485	11475
12	2710	2700	32	7210	7200	52	11710	11700
13	2935	2925	33	7435	7425	53	11935	11925
14	3160	3150	34	7660	7650	54	12160	12150
15	3385	3375	35	7885	7875	55	12385	12375
16	3610	3600	36	8110	8100	56	12610	12600
17	3835	3825	37	8335	8325	57	12835	12825
18	4060	4050	38	8560	8550	58	13060	13050
19	4285	4275	39	8785	8775	59	13285	13275
20	4510	4500	40	9010	9000	60	13510	13500

RADIUS WALLS USING STANDARD BLOCKS

Within certain limits, standard blocks may be laid running bond to a circular or other curved plan form. The practical limits are determined by the acceptable face width of perpend on the outer radius, and the amount of overhang between successive courses.

For requirements outside the parameters shown in the table below, Forticrete has a facility to create bespoke products. However, an exact match cannot be guaranteed due to the different manufacturing processes employed. Forticrete recommend that matching samples be compared at the design stage.

FIG 2 STANDARD BLOCK USED ON RADIUS WALL

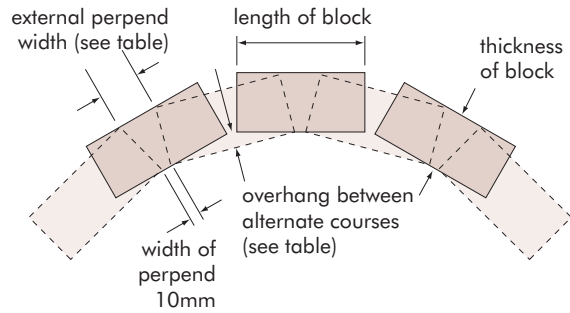


TABLE 10 RADIUS WALL PARAMETERS USING STANDARD BLOCKS

Wall radius (mm)	Block thickness 90mm length 200mm		Block thickness 90mm length 400mm		Block thickness 100mm length 225mm		Block thickness 100mm length 450mm	
	Overhang (mm)	External perpend width (mm)	Overhang (mm)	External perpend width (mm)	Overhang (mm)	External perpend width (mm)	Overhang (mm)	External perpend width (mm)
1000	5	28	20	50	6	32	22	54
1200	4	25	17	42	5	29	20	46
1400	3.5	23	14	39	4.5	26	17	42
1600	3.0	21	12	35	4	24	15	37
1800	2.5	20	11	32	3.5	22	13	34
2000	2.5	19	10	30	3	21	12	32
2500	2.5	19	10	28	2.0	17.5	8	26
3000	1.5	16	7	23	2.0	18	8	25
3500	1.0	15	6	21	1.8	17	7	23
4000	<1.0	14.5	5	20	1.5	16	6	21
4500	<1.0	14.0	4.5	19	1.0	15	5.5	20
5000	<1.0	13.5	4.0	18	<1.0	14.5	5.0	19
5500	<1.0	13.5	3.5	17	<1.0	14	4.5	18
6000	<1.0	13	3.0	16.5	<1.0	13.5	4.0	17

OVERHANGS

The overhang values are what can be expected if the wall is built fair-face on both sides.

Overhangs of 4mm and below are normally acceptable for fair-face work.

PERPENDS

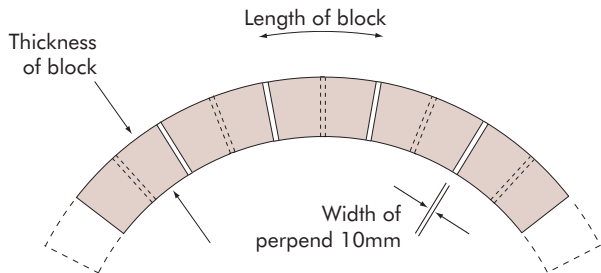
Where the blocks are only seen on the internal radius, the perpend can be kept at 10mm.

If the external radius is seen, the perpend width may be reduced by closing up on the inside face or by cutting one or both ends of the blocks on the splay.

RADIUS WALL USING PRECAST CURVED UNITS

The intended appearance of the radius wall will determine whether the use of standard blocks is practical or desirable. Consideration should therefore be given to the use of precast curved units to achieve the required effect.

FIG 3 CURVED BLOCK USED ON RADIUS WALL



Refer to information in the Precast Product brochure.