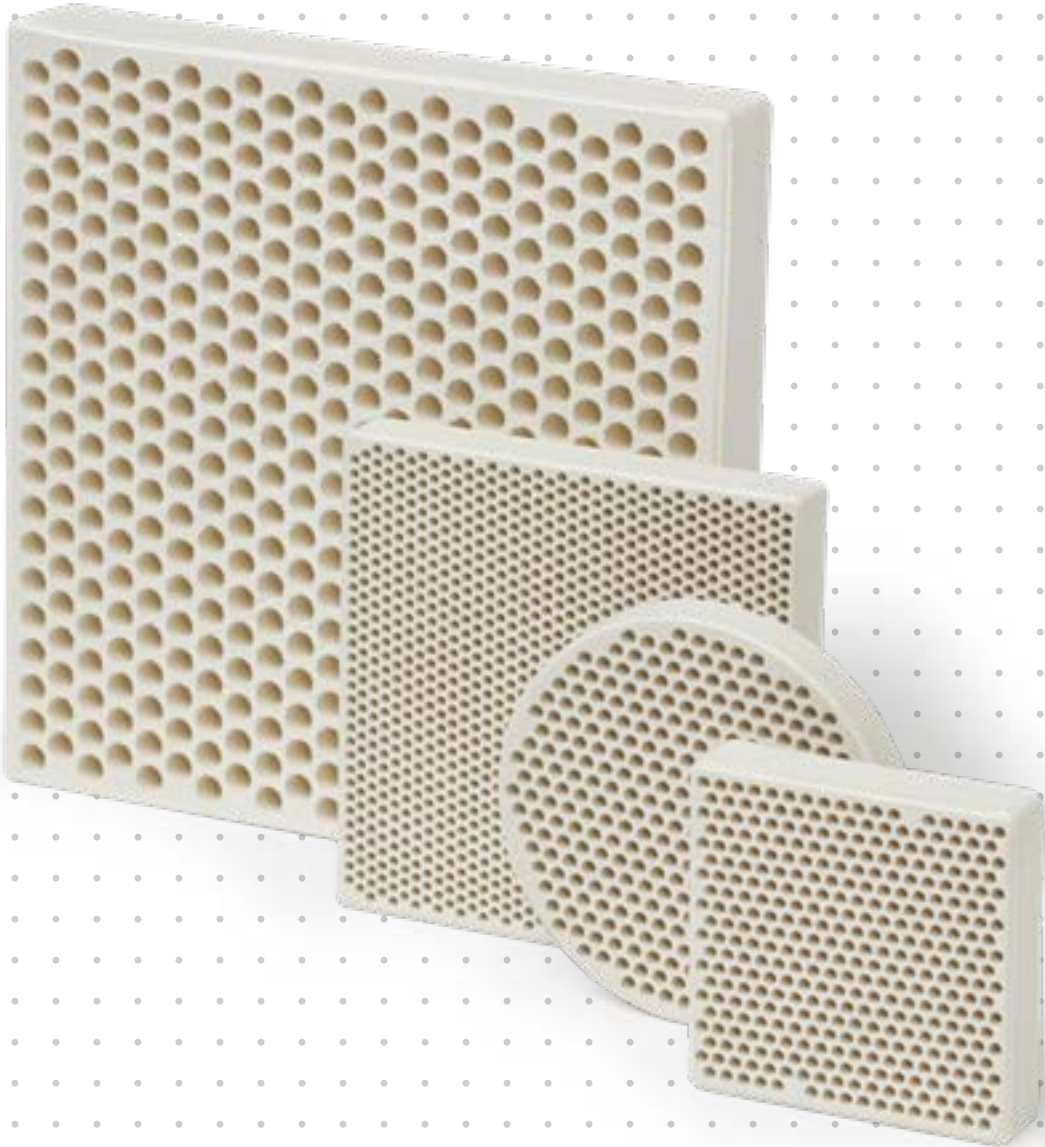




**FlowRite® Ceramic  
Foundry Filters**

Effective Impurity Removal



# FlowRite® Foundry Filter Dimensional & Technical Summary

US/IMPERIAL

Part Number	Shape	Gray Iron	Nominal Dimensions (in)		Hole Diam (in)	# of Holes	Open Area %	Usable Filter Area (in <sup>2</sup> )	Pour Rate (lb/sec)		Recommended Total Flow (lbs)		Filters Per Box	Filters Per Pallet
			width x length	thick					gray	ductile	gray	ductile		
FC-108-10	■	•	1.50 x 1.50	0.39	0.060	328	52	1.6	4 - 6	1 - 3	46 - 78	14 - 38	1120	67200
FC-108-13*	■	•	1.50 x 1.50	0.50	0.060	328	52	1.6	4 - 6	1 - 3	46 - 78	14 - 38	945	56700
FC-116-10	■		1.43 x 1.43	0.38	0.086	161	54	1.4	5 - 8	1 - 4	83 - 141	25 - 69	1260	75600
FC-116-13*	■		1.46 x 1.46	0.49	0.091	161	54	1.5	5 - 9	2 - 4	87 - 148	26 - 73	1008	60480
FC-130-13	■	•	1.71 x 1.71	0.47	0.060	472	54	2.2	5 - 9	2 - 4	95 - 161	19 - 54	630	37800
FC-133-13	■		1.71 x 1.71	0.50	0.091	216	60	2.2	8 - 14	2 - 6	141 - 240	42 - 118	714	42840
FC-139-13	■	•	1.96 x 1.96	0.50	0.060	538	50	2.9	6 - 11	2 - 5	119 - 203	24 - 68	450	27000
FC-144-13	■		1.97 x 1.97	0.50	0.091	249	50	3.0	9 - 16	3 - 7	162 - 275	48 - 135	450	27000
FC-144-22	■		1.97 x 1.97	0.85	0.091	249	50	3.0	9 - 16	3 - 7	162 - 275	48 - 135	270	16200
FC-155-13	■	•	1.96 x 1.96	0.49	0.070	492	56	2.9	7 - 14	3 - 8	160 - 271	42 - 118	450	27000
FC-157-13	■		1.96 x 1.96	0.49	0.100	247	60	2.9	12 - 21	4 - 10	214 - 364	67 - 187	450	27000
FC-161-10*	■		2.14 x 2.14	0.38	0.086	348	52	3.4	11 - 19	3 - 9	189 - 321	51 - 143	600	36000
FC-161-13*	■		2.14 x 2.14	0.49	0.086	348	52	3.4	11 - 19	3 - 9	189 - 321	51 - 143	450	27000
FC-163-13*	■	•	2.17 x 2.17	0.49	0.070	538	50	3.6	8 - 15	3 - 8	149 - 253	39 - 110	450	27000
FC-169-13*	■	•	2.17 x 2.17	0.50	0.060	687	50	3.6	8 - 13	2 - 6	124 - 210	25 - 70	450	27000
FC-170-10*	■		2.17 x 2.17	0.38	0.100	294	60	3.6	15 - 25	5 - 12	255 - 433	70 - 196	600	36000
FC-174-13*	■		2.17 x 2.17	0.50	0.091	367	60	3.6	14 - 23	4 - 10	224 - 380	60 - 169	450	27000
FC-194-13*	■	•	2.63 x 2.63	0.50	0.070	764	50	5.5	12 - 23	4 - 13	234 - 398	51 - 142	300	18000
FC-199-13*	■		2.60 x 2.60	0.50	0.086	535	52	5.4	18 - 30	5 - 14	319 - 542	67 - 187	300	18000
FC-208-13*	■	•	2.63 x 2.63	0.50	0.060	1049	50	5.5	12 - 20	4 - 9	160 - 271	32 - 90	300	18000
FC-211-13*	■		2.63 x 2.63	0.50	0.091	537	59	5.5	20 - 35	6 - 16	357 - 607	76 - 214	300	18000
FC-211-19	■		2.63 x 2.63	0.75	0.091	537	59	5.5	20 - 35	6 - 16	357 - 607	76 - 214	200	12000
FC-232-13	■		3.22 x 3.22	0.50	0.100	538	47	8.4	27 - 45	8 - 22	442 - 751	98 - 275	180	10800
FC-236-13	■	•	2.95 x 2.95	0.50	0.070	960	50	6.9	15 - 29	6 - 16	290 - 492	59 - 164	180	10800
FC-242-13*	■		2.95 x 2.95	0.50	0.091	562	50	6.9	22 - 37	7 - 17	331 - 563	75 - 210	180	10800
FC-242-22	■		2.95 x 2.95	0.84	0.091	562	50	6.9	22 - 37	7 - 17	331 - 563	75 - 210	108	6480
FC-246-13*	■	•	3.22 x 3.22	0.50	0.070	1233	51	8.4	19 - 36	7 - 20	360 - 613	73 - 204	180	10800
FC-250-13*	■		3.22 x 3.22	0.50	0.091	723	53	8.4	28 - 48	8 - 22	427 - 726	97 - 271	180	10800
FC-251-13*	■		3.22 x 3.22	0.50	0.153	270	56	8.4	61 - 91	23 - 46	908 - 1362	389 - 681	180	10800
FC-259-13*	■	•	3.22 x 3.22	0.50	0.060	1612	50	8.4	18 - 30	6 - 14	224 - 380	45 - 127	180	10800
FC-266-13*	■		3.22 x 3.22	0.50	0.100	686	60	8.4	34 - 59	11 - 28	596 - 1014	127 - 354	180	10800
FC-266-19*	■		3.22 x 3.22	0.75	0.100	610	53	8.4	30 - 52	9 - 25	524 - 891	111 - 312	120	7200
FC-301-22	■		3.87 x 3.87	0.84	0.130	537	54	12.6	88 - 131	33 - 66	1306 - 1958	560 - 979	76	4560
FC-313-13	■	•	3.87 x 3.87	0.50	0.070	1992	56	12.6	31 - 59	11 - 33	446 - 758	90 - 253	90	5400
FC-321-22	■		3.87 x 3.87	0.84	0.091	1003	50	12.6	40 - 68	12 - 31	604 - 1027	137 - 383	54	3240
FC-416-19*	■		5.25 x 5.25	0.75	0.100	1694	54	23.5	87 - 148	27 - 71	1508 - 2563	320 - 896	46	2760
FC-447-19*	■		5.25 x 5.25	0.75	0.197	494	62	23.5	304 - 456	114 - 228	3969 - 5953	1701 - 2977	46	2760
FC-454-19*	■		5.25 x 5.25	0.75	0.153	852	64	23.5	195 - 293	73 - 146	2911 - 4366	1247 - 2183	46	2760
FC-176-22	■		1.97 x 2.95	0.85	0.091	369	50	4.3	14 - 23	4 - 11	226 - 385	61 - 171	200	12000
FC-224-22	■		1.93 x 3.87	0.84	0.091	479	50	5.7	18 - 30	5 - 14	296 - 503	67 - 188	108	6480
FC-281-22	■		2.95 x 3.87	0.84	0.100	764	60	9.4	38 - 65	12 - 31	664 - 1130	141 - 395	72	4320
FC-316-13*	■		3.25 x 4.50	0.50	0.100	966	59	11.7	47 - 80	15 - 38	815 - 1386	173 - 485	120	7200
FC-316-19	■		3.25 x 4.50	0.75	0.100	1000	59	11.7	47 - 80	15 - 38	815 - 1386	173 - 485	80	4800
FC-338-19*	■		5.25 x 3.50	0.75	0.100	1147	54	15.7	58 - 99	18 - 47	1005 - 1708	214 - 597	76	4560
FC-132-10	●		∅ x 2.00	0.38	0.091	211	60	2.4	9 - 16	3 - 7	158 - 269	47 - 133	600	36000
FC-132-13	●		∅ x 2.00	0.50	0.091	211	60	2.4	9 - 16	3 - 7	158 - 269	47 - 133	450	27000
FC-159-10	●		∅ x 2.45	0.40	0.091	313	56	3.7	13 - 22	4 - 10	216 - 368	58 - 163	400	24000
FC-181-10	●		∅ x 2.70	0.38	0.100	326	53	4.4	16 - 27	5 - 13	234 - 398	64 - 180	400	24000
FC-193-13	●		∅ x 2.70	0.50	0.100	373	60	4.4	18 - 31	6 - 15	317 - 538	73 - 205	300	18000
FC-212-13	●		∅ x 3.50	0.50	0.100	451	47	7.9	25 - 43	8 - 20	439 - 746	101 - 284	165	9900
FC-290-19	●		∅ x 4.18	0.75	0.197	225	64	11.2	93 - 140	35 - 70	1393 - 2089	597 - 1045	80	4800

\* Most popular filter models

DUCTILE IRON: Useable filter area should be at least 5 times the area of the runner system choke (Filter : Choke = 5:1 to 7:1)

GRAY IRON: Useable filter area should be at least 3 times the area of the runner system choke (Filter : Choke = 3:1 to 5:1)

Other filter shapes and sizes or individual specification sheets are available on request Please contact your local distributor for further details. All dimensions are in inches.

# FlowRite® Foundry Filter Dimensional & Technical Summary

METRIC

Part Number	Shape	Gray Iron	Nominal Dimensions (mm)		Hole Diam (mm)	# of Holes	Open Area %	Usable Filter Area (mm <sup>2</sup> )	Pour Rate (kg/sec)		Recommended Total Flow (kgs)		Filters Per Box	Filters Per Pallet
			width x length	thick					gray	ductile	gray	ductile		
FC-108-10	■	•	38.1 x 38.1	9.8	1.5	328	52	1024	2 - 3	0.5 - 1	21 - 35	6 - 17	1120	67200
FC-108-13*	■	•	38.1 x 38.1	12.7	1.5	328	52	1024	2 - 3	0.5 - 1	21 - 35	6 - 17	945	56700
FC-116-10	■		36.2 x 36.2	9.5	2.2	161	54	901	2 - 4	1 - 2	38 - 64	11 - 31	1260	75600
FC-116-13*	■		37.0 x 37.0	12.5	2.3	161	54	954	2 - 4	1 - 2	40 - 67	12 - 33	1008	60480
FC-130-13	■	•	43.5 x 43.5	12.0	1.5	472	54	1400	2 - 4	1 - 2	43 - 73	9 - 24	630	37800
FC-133-13	■		43.5 x 43.5	12.7	2.3	216	60	1400	4 - 6	1 - 3	64 - 109	19 - 54	714	42840
FC-139-13	■	•	49.7 x 49.7	12.7	1.5	538	50	1902	3 - 5	1 - 2	54 - 92	11 - 31	450	27000
FC-144-13	■		50.0 x 50.0	12.7	2.3	249	50	1929	4 - 7	1 - 3	74 - 125	22 - 62	450	27000
FC-144-22	■		50.0 x 50.0	21.6	2.3	249	50	1929	4 - 7	1 - 3	74 - 125	22 - 62	270	16200
FC-155-13	■	•	49.7 x 49.7	12.5	1.8	492	56	1902	3 - 6	1 - 3	73 - 123	19 - 54	450	27000
FC-157-13	■		49.7 x 49.7	12.5	2.5	247	60	1902	6 - 9	2 - 4	97 - 165	30 - 85	450	27000
FC-161-10*	■		54.2 x 54.2	9.5	2.2	348	52	2220	5 - 9	2 - 4	86 - 146	23 - 65	600	36000
FC-161-13*	■		54.2 x 54.2	12.5	2.2	348	52	2220	5 - 9	2 - 4	86 - 146	23 - 65	450	27000
FC-163-13*	■	•	55.0 x 55.0	12.5	1.8	538	50	2297	4 - 7	1 - 4	68 - 115	18 - 50	450	27000
FC-169-13*	■	•	55.0 x 55.0	12.7	1.5	687	50	2297	3 - 6	1 - 3	56 - 96	11 - 32	450	27000
FC-170-10*	■		55.0 x 55.0	9.5	2.5	294	60	2297	7 - 11	2 - 5	116 - 197	32 - 89	600	36000
FC-174-13*	■		55.0 x 55.0	12.7	2.3	367	60	2297	6 - 10	2 - 5	102 - 173	27 - 77	450	27000
FC-194-13*	■	•	66.7 x 66.7	12.7	1.8	764	50	3548	5 - 10	2 - 6	106 - 181	23 - 65	300	18000
FC-199-13*	■		66.0 x 66.0	12.7	2.2	535	52	3473	8 - 14	2 - 6	145 - 246	30 - 85	300	18000
FC-208-13*	■	•	66.7 x 66.7	12.7	1.5	1049	50	3548	5 - 9	2 - 4	73 - 123	15 - 41	300	18000
FC-211-13*	■		66.7 x 66.7	12.7	2.3	537	59	3548	9 - 16	3 - 7	162 - 276	35 - 97	300	18000
FC-211-19	■		66.7 x 66.7	19.1	2.3	537	59	3548	9 - 16	3 - 7	162 - 276	35 - 97	200	12000
FC-232-13	■		81.7 x 81.7	12.7	2.5	538	47	5418	12 - 21	4 - 10	201 - 341	45 - 125	180	10800
FC-236-13	■	•	75.0 x 75.0	12.7	1.8	960	50	4473	7 - 13	3 - 7	132 - 224	27 - 75	180	10800
FC-242-13*	■		75.0 x 75.0	12.7	2.3	562	50	4473	10 - 17	3 - 8	151 - 256	34 - 96	180	10800
FC-242-22	■		75.0 x 75.0	21.2	2.3	562	50	4473	10 - 17	3 - 8	141 - 256	34 - 96	108	6480
FC-246-13*	■	•	81.7 x 81.7	12.7	1.8	1233	51	5418	9 - 16	3 - 9	164 - 278	33 - 93	180	10800
FC-250-13*	■		81.7 x 81.7	12.7	2.3	723	53	5418	13 - 22	4 - 10	194 - 330	44 - 123	180	10800
FC-251-13*	■		81.7 x 81.7	12.7	3.9	270	56	5418	28 - 42	10 - 21	413 - 619	177 - 310	180	10800
FC-259-13*	■	•	81.7 x 81.7	12.7	1.5	1612	50	5418	8 - 14	3 - 7	102 - 173	21 - 58	180	10800
FC-266-13*	■		81.7 x 81.7	12.7	2.5	686	60	5418	16 - 27	5 - 13	271 - 461	58 - 161	180	10800
FC-266-19*	■		81.7 x 81.7	19.1	2.5	610	53	5418	14 - 23	4 - 11	238 - 405	51 - 142	120	7200
FC-301-22	■		98.4 x 98.4	21.2	3.3	537	54	8149	40 - 60	15 - 30	593 - 890	254 - 445	76	4560
FC-313-13	■	•	98.4 x 98.4	12.7	1.8	1992	56	8149	14 - 27	5 - 15	203 - 344	41 - 115	90	5400
FC-321-22	■		98.4 x 98.4	21.2	2.3	1003	50	8149	18 - 31	5 - 14	274 - 467	62 - 174	54	3240
FC-416-19*	■		133.4 x 133.4	19.1	2.5	1694	54	15176	40 - 67	12 - 32	685 - 1165	145 - 407	46	2760
FC-447-19*	■		133.4 x 133.4	19.1	5.0	494	62	15176	138 - 207	52 - 104	1804 - 2706	773 - 1353	46	2760
FC-454-19*	■		133.4 x 133.4	19.1	3.9	852	64	15176	89 - 133	33 - 67	1323 - 1984	567 - 992	46	2760
FC-176-22	■		50.0 x 75.0	21.6	2.3	369	50	2801	6 - 11	2 - 5	103 - 175	28 - 78	200	12000
FC-224-22	■		48.9 x 98.4	21.3	2.3	479	50	3680	8 - 14	2 - 6	134 - 229	30 - 85	108	6480
FC-281-22	■		75.0 x 98.4	21.2	2.5	764	60	6037	17 - 30	5 - 14	302 - 513	64 - 180	72	4320
FC-316-13*	■		82.6 x 114.3	12.7	2.5	966	59	7539	21 - 36	7 - 17	371 - 630	79 - 220	120	7200
FC-316-19	■		82.6 x 114.3	19.1	2.5	1000	59	7539	21 - 36	7 - 17	371 - 630	79 - 220	80	4800
FC-338-19*	■		133.4 x 88.9	19.1	2.5	1147	54	10114	26 - 45	8 - 21	457 - 777	97 - 272	76	4560
FC-132-10	●		∅ x 50.8	9.5	2.3	211	60	1569	4 - 7	1 - 3	72 - 122	22 - 60	600	36000
FC-132-13	●		∅ x 50.8	12.7	2.3	211	60	1569	4 - 7	1 - 3	72 - 122	22 - 60	450	27000
FC-159-10	●		∅ x 62.2	10.2	2.3	313	56	2385	6 - 10	2 - 5	98 - 167	27 - 74	400	24000
FC-181-10	●		∅ x 68.6	9.5	2.5	326	53	2869	7 - 12	2 - 6	106 - 181	29 - 82	400	24000
FC-193-13	●		∅ x 68.6	12.7	2.5	373	60	2869	8 - 14	3 - 7	144 - 245	33 - 93	300	18000
FC-212-13	●		∅ x 88.9	12.7	2.5	451	47	5121	11 - 20	4 - 9	199 - 339	46 - 129	165	9900
FC-290-19	●		∅ x 106.1	19.1	5.0	225	64	7229	42 - 64	16 - 32	633 - 950	271 - 475	80	4800

\* Most popular filter models

DUCTILE IRON: Useable filter area should be at least 5 times the area of the runner system choke (Filter : Choke = 5:1 to 7:1)

GRAY IRON: Useable filter area should be at least 3 times the area of the runner system choke (Filter : Choke = 3:1 to 5:1)

Other filter shapes and sizes or individual specification sheets are available on request Please contact your local distributor for further details. All dimensions are in mm.

# EFFECTIVE IMPURITY REMOVAL WITH FLOW-RITE® CERAMIC FOUNDRY FILTERS

CoorsTek Flow-Rite ceramic filters are used to remove impurities from molten metal in the casting process at foundries worldwide. Filters can be used with all types of cast iron, aluminum, and copper-based alloys, and are available in a broad range of sizes, shapes, and performance levels.



## CERAMIC MATERIALS

FlowRite ceramic foundry filters are manufactured using an alumina-silicate composition, which offers an effective balance of refractoriness and affinity for adhesion of metallic oxide inclusions.

## STRUCTURAL CONSISTENCY

Unlike some filter types that have a random foam structure, the cellular structure of FlowRite filters is identical from one filter to the next, ensuring a high degree of consistency from pour to pour.

## RAPID TOOLING

CoorsTek facilities are ISO certified and offer numerous capabilities to ensure your metal casting products are made to spec and delivered on time.

- Excellent turn-around
- Compaction tooling tailored to a customer's specifications
- Multi-axis CNC machinery, heat treating, wire and plunge EDM, and other services

## RECOMMENDATIONS

It is recommended that the runner's system choke, not the filter, limit the flow rate of the molten metal. The total usable filter area should be larger than the system choke.

Minimum Recommended Ratios:

- 3 to 1 for gray iron
- 4 to 1 for aluminum and copper based alloys
- 5 to 1 for ductile iron

Flow rates and total flow capacity vary with metallostatic head, metal temperature, metal cleanliness, and metal composition.

The maximum recommended pouring temperature is 1470°C/ 2680°F and a maximum pouring time of 60 seconds is suggested.

## TECH/APPLICATION INFO

Metal casters worldwide rely on FlowRite Filters to remove impurities from cast irons, aluminum, and copper-based alloys. They are available in various cell diameters and configurations, covering a range from 10ppi/ 100csi to 30ppi/ 300csi, allowing the best filter to be selected for any given application.

## BENEFITS OF FLOW-RITE FC FILTERS FOR FOUNDRIES



Cost effective



Reduced casting scrap rates and customer returns



Highly optimized runner system for improved yield



Effectively remove non-metallic inclusions in metal castings



Improved as-cast surface finish



Wide range of standard sizes



Reduced turbulence in the metal stream decreases oxide formation and mold erosion



Improved casting machinability and reduced tool wear



Custom sizes and configurations available

Data contained herein is not to be construed as absolute and does not constitute a representation or warranty for which CoorsTek assumes legal responsibility. CoorsTek and FlowRite are registered trademarks of CoorsTek, Inc.



### Americas

+1 303 271 7100 tel  
+1 855 929 7100 toll free in USA  
coorstek.com  
info@coorstek.com

### Europe

+49 160 530 3768  
infoeurope@coorstek.com

### Japan

+1 81 3 5437 8411  
japaninfo@coorstek.com

### China

+86 21 6362 1125  
info\_shanghai@coorstek.com

### Korea

+82 31 613 2946  
koreainfo@coorstek.com