



### BULK SOLIDS HWDF MATERIAL SPECIFICATIONS

Ash Grove Cement Company operates the hazardous waste combustor cement plant in Foreman, Arkansas. KalcinerDirect™ System refinery solids shall meet the criteria that Ash Grove provides below. Requirements are firm limits. Some guidelines are targets that may be manageable at levels beyond those shown on a case-by-case basis.

MATERIAL REQUIREMENTS			
PARAMETER	LIMIT	PARAMETER	LIMIT
Stability	Stable	Radioactivity	Background
PCB Content, maximum	50 ppm, and non TSCA regulated	pH, extracted, in the range of	4 to 10
Waste Codes	Listed in the RCRA permit – excluding “P” codes	Unacceptable Materials	112 (r) listed compounds in excess of 1 %;
			infectious materials, materials harmful to the plant;
			Materials that Ash Grove deems potentially harmful; or
			Materials not allowed by Ash Grove permits
			No tramp steel, debris, PPE, or other fibrous/foreign materials
ADDITIONAL GUIDELINES			
PARAMETER	LIMIT	PARAMETER	LIMIT
Heat of Combustion, minimum	2,500-5,000 btu/lb	Antimony, maximum	1,000 ppm
		Arsenic, maximum	1,200 ppm
Total Halogens, maximum	3.5%	Barium, maximum	25,000 ppm
		Beryllium, maximum	5 ppm
Water Content, maximum	10-25%	Cadmium, maximum	150 ppm
		Chromium, maximum	2,000 ppm
Particle Size, maximum	2” minus upon unloading	Lead, maximum	1,500 ppm
		Mercury, maximum	1.9 ppm
Ash, maximum	50%	Selenium, maximum	500 ppm
State	Capable of being off loaded with available equipment within a 4-hour window	Silver, maximum	2,500 ppm
		Thallium, maximum	250 ppm
		Potassium, maximum	0.5%
		Silicon, maximum	10%
Containers	Covered DOT approved shipping container without liners – roll-off & vacuum boxes	Alumina, maximum	5%
		Sodium, maximum	0.5%

### PRIMARY WASTE CODE LIST

D004 D005 D006 D007 D008 D009 D010 D011 D018 D019 D021 D022 D023 D024 D025 D026  
 D027 D028 D029 D032 D034 D035 D039 D040 D041 D042  
 F037 F038  
 K048 K049 K050 K051 K052 K085 K086 K087 K088 K093 K094 K095 K096 K097 K098 K106 K107  
 K108 K109 K110 K111 K112 K113 K114 K115 K131 K132 K136 K141 K142 K143 K144 K145 K147  
 K148 K169 K170 K171 K172



**ACCEPTABLE WASTE CODE LIST - COMPLETE**

	D002	D004	D005	D006	D007	D008	D009	D010	D011	D012	D013	D014	D015	D016	D017	D018
D019	D020	D021	D022	D023	D024	D025	D026	D027	D028	D029	D030	D031	D032	D033	D034	D035
D036	D037	D038	D039	D040	D041	D042	D043									
F001	F002	F003	F004	F005	F006	F007	F008	F009	F010	F011	F012	F019	F024	F025	F032	F034
F035	F037	F038	F039													
K001	K002	K003	K004	K005	K006	K007	K008	K009	K010	K011	K013	K014	K015	K016	K017	K018
K019	K020	K021	K022	K023	K024	K025	K026	K027	K028	K029	K030	K031	K032	K033	K034	K035
K036	K037	K038	K039	K040	K041	K042	K043	K044	K045	K046	K047	K048	K049	K050	K051	K052
K060	K061	K062	K071	K073	K083	K084	K085	K086	K087	K088	K093	K094	K095	K096	K097	K098
K099	K100	K101	K102	K103	K104	K105	K106	K107	K108	K109	K110	K111	K112	K113	K114	K115
K116	K117	K118	K123	K124	K125	K126	K131	K132	K136	K141	K142	K143	K144	K145	K147	K148
K149	K150	K151	K156	K157	K158	K159	K169	K170	K171	K172	K175	K181				
U001	U002	U003	U004	U005	U006	U007	U008	U009	U010	U011	U012	U014	U015	U016	U017	U018
U019	U020	U021	U022	U023	U024	U025	U026	U027	U028	U029	U030	U031	U032	U033	U034	U035
U036	U037	U038	U039	U041	U042	U043	U044	U045	U046	U047	U048	U049	U050	U051	U052	U053
U055	U056	U057	U058	U059	U060	U061	U062	U063	U064	U066	U067	U068	U069	U070	U071	U072
U073	U074	U075	U076	U077	U078	U079	U080	U081	U082	U083	U084	U085	U086	U087	U088	U089
U090	U091	U092	U093	U094	U095	U096	U097	U098	U099	U101	U102	U103	U105	U106	U107	U108
U109	U110	U111	U112	U113	U114	U115	U116	U117	U118	U119	U120	U121	U122	U123	U124	U125
U126	U127	U128	U129	U130	U131	U132	U133	U134	U135	U136	U137	U138	U140	U141	U142	U143
U144	U145	U146	U147	U148	U149	U150	U151	U152	U153	U154	U155	U156	U157	U158	U159	U160
U161	U162	U163	U164	U165	U166	U167	U168	U169	U170	U171	U172	U173	U174	U176	U177	U178
U179	U180	U181	U182	U183	U184	U185	U186	U187	U188	U189	U190	U191	U192	U193	U194	U196
U197	U200	U201	U202	U203	U204	U205	U206	U207	U208	U209	U210	U211	U213	U214	U215	U216
U217	U218	U219	U220	U221	U222	U223	U225	U226	U227	U228	U234	U235	U236	U237	U238	U239
U240	U243	U244	U246	U247	U248	U249	U271	U278	U279	U280	U328	U353	U359	U364	U367	U372
U373	U387	U389	U394	U395	U404	U409	U410	U411								