

PARTIAL LIST OF AVAILABLE FLY ASH AND GGBFS

The following is a partial list of cementitious materials and providers. It does not endorse any provider or material, and it does not insure that the materials reported can be used in concrete or any other application. The engineer will need to ensure that the material chosen meets the specifications of its application.

For use in concrete, ground granulated blast furnace slag (GGBFS) grades 100 and 120 are allowed (ASTM C 989). Class F and N fly ash with CaO contents below 8%, LOI below 6%, and available alkalis below 1.5% are also allowed. Class F and N fly ash with CaO contents between 8% and 10% (with LOI below 6%, and available alkalis below 1.5%) can also be used, provided the minimum replacement is 30%.

Class F and N fly ashes not meeting the above requirements, and Class C fly ashes can be assessed for other uses, such as soil stabilization.

Further information not included in this document can be sent to NFESC for inclusion. The aim is to provide a fairly complete database of available cementitious materials nation and worldwide.

Class F Fly Ash

COMPANY	LOCATION	CALCIUM OXIDE %	LOSS ON IGNITION %	AVAILABLE ALKALIES %
Boral Material Technologies (Western Ash Company) 45 NE Loop 410, Suite 700 San Antonio, TX 78216-9923 Local 210-349-4069 Also: 7500 N Dreamy Draw, Suite 234 P.O. Box 7360 Phoenix, AZ 85036 http://www.boralmti.com/ H. Roof harry.roof@boralmti.com	Mohave Fly Ash Laughlin, NV	8.5-9.9		
	Valmy Fly Ash Valmy, NV	14.0		
	Apache Fly Ash Cochise, AZ	3.0-8.0		
	Navajo Fly Ash Page, AZ	8.0	1.06	< 2.06
	Snowflake Ash Snowflake, AZ	3.0-4.2		
	Monticello Ash Monticello, TX	7.1-8.0		
ISG Resources, Inc. (Pozz. Intl.) 136 E South Temple, Suite 1300 Salt Lake City, UT 84111 Local 801-236-9700 Also: 7525 S.E. 24 th Street Mercer Island, WA 98040 Also: 950 Andover Park East Tukwila, WA 98188 Steve Creamer screamer@isgresources.com	Centralia Fly Ash Centralia, WA	7.6-9.9		
	Jim Bridger Fly Ash Rock Springs, WY	5.6-7.5	0.53	< 2.62
	IPSC/Delta Fly Ash Delta, UT	9.1-9.9		
	Hunter Fly Ash Castle Dale, UT	7.9-9.9		
Phoenix Cement Company 8800 E Chaparral Rd. Suite 155 Scottsdale, AZ 85250-2618 Local 480-850-5757 Also: 2501 W. Behrend Drive P.O. Box 43740 Phoenix, AZ 85080 - Dale Diulus diulusdh@phoenix-cement.com Hearne, Jeff hearnejd@phoenix-cement.com	Cholla Fly Ash Joseph City, AZ	3.5	0.33	0.76
	Four Corners Fly Ash Farmington, NM	2.5	0.45	0.67
	Escalante Fly Ash Prewit, NM	3.7	0.34	0.54
	San Juan Fly Ash Farmington, NM	3.2	0.63	0.44
Pozzolan International 2448 76 th Ave. SE, Suite 222 Mercer Island, WA 98040	Bridger Fly Ash			

Mineral Resource Technologies 120 Interstate North Parkway East, Suite 440 Atlanta, GA 30339 770-989-0089 Hugh Shannonhouse hshannonhouse@mrtus.com *	Coronado Fly Ash	2.6-5.0		
Master Builders, Inc. Headquarters of the Americas 23700 Chagrin Blvd. Cleveland, OH, USA, 44122 Phone: (800) MBT-9990 http://www.masterbuilders.com/ Steve Somerville steve.somerville@mbt.com	ProAsh – Roxboro Station Carolina Power & Light Raleigh, NC	0.6-1.0	2.00	0.60
	SunAsh	1.8	0.56	

Class N Fly Ash

COMPANY	LOCATION	CALCIUM OXIDE %	LOSS ON IGNITION %	AVAILABLE ALKALIES %
Cushenberry Cement Company 5808 Highway 18 Lucerne Valley, CA 92356	Cushenberry Volcanic Ash	1.52	3.57	< 0.28
Diatomics Mineral Corporation 601 University Avenue, Suite 165 Sacramento, CA 95825	Lassenite Fly Ash	1.75	0.98	< 2.81
Basalite 2600 Boeing Carson City, NV 89701	Carson City Volcanic Ash	1.50	3.17	< 6.84
Lehigh Portland Cement Co. (800) 462-9071 http://www.lehighcement.com/	Lehigh XPM	7.00	-	-

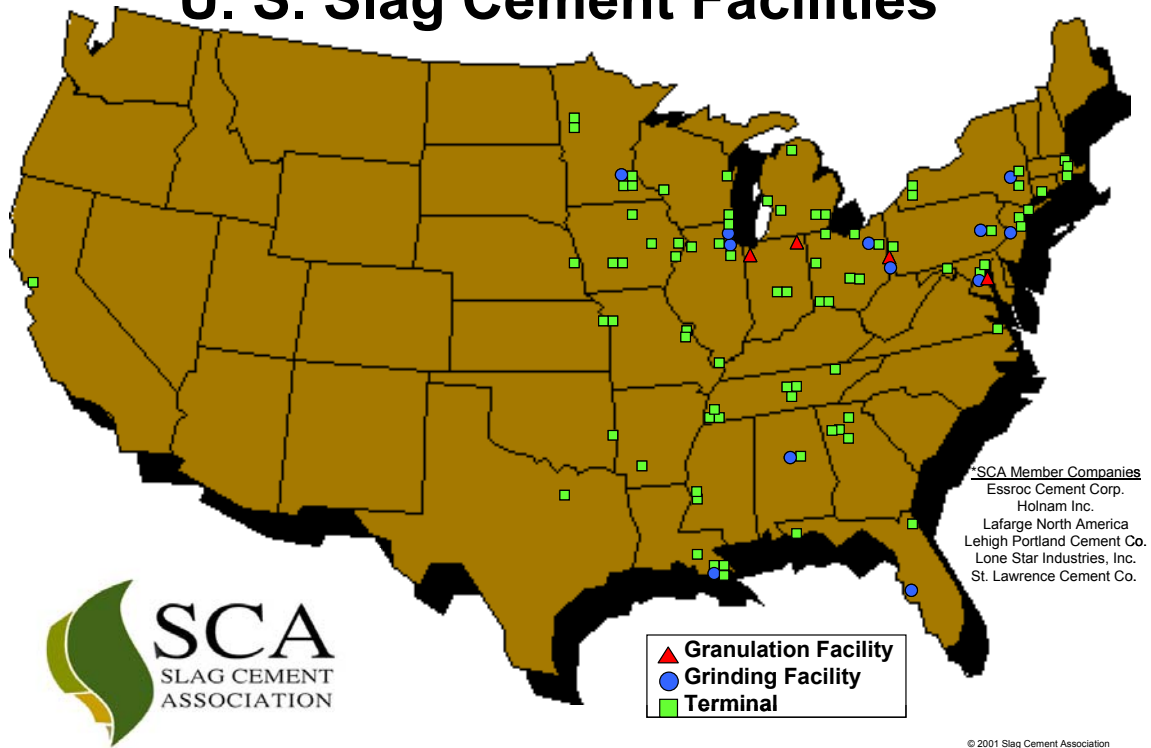
Class C Fly Ash

COMPANY	LOCATION	CALCIUM OXIDE %	LOSS ON IGNITION %	AVAILABLE ALKALIES %
Nebraska Ash Company 1815 Y Street P.O. Box 80268 Lincoln, NE 68501 402-434-1777 Tex Leber texl@nebraskaash.com	Nebraska Public Power District Gerald Gentleman Station Sutherland, NE	28.0	0.50	1.28
	Omaha Public Power District North Omaha Station Omaha, NE	23.0	0.30	1.33
	Omaha Public Power District Nebraska City Station Nebraska City, NE	25.0	0.50	0.78
Holnam, Inc. 16401 Swingley Ridge Rd. Suite 330 Chesterfield, MO 63017 636-537-6027 Buffey Hauptmann bhauptma@holnam.com	Detroit Edison Belle River, Unit 1 Kristen O'Neil	17.9	0.45	< 8.70
	Detroit Edison Belle River, Unit 2 Kristen O'Neil	18.7	0.67	< 8.52
	Detroit Edison St. Clair, North Kristen O'Neil	13.8	2.63	< 6.96
	Detroit Edison St. Clair, South Kristen O'Neil	13.6	1.67	< 6.96
	Pulliam Plant Wisconsin Public Service Kristen O'Neil	23.5	0.54	1.14
	Hugo Plant, Oklahoma Western Farmers Electric Coop. Kristen O'Neil	28.1	0.53	< 2.67
	Alabama Power Company Miller Electric Generating Plant Kristen O'Neil	25.3	0.67	< 2.15

GOUND GRANULATED BLAST FURNACE SLAG

Information provided by the Executive Director, Slag Cement Association

U. S. Slag Cement Facilities*



Slag Providers by State

Company	Division	Facility	City	State
Holnam		Grinding	Birmingham	AL
Holnam		Terminal	Birmingham/Midfield	AL
Holnam		Terminal	Hope	AR
Lehigh	Calaveras	Terminal	Stockton	CA
Lafarge	Blue Circle	Terminal	New Haven	CT
Lafarge		Grinding	Tampa	FL
Holnam		Terminal	Tampa	FL
Lafarge	Blue Circle	Terminal	Jacksonville	FL
Lone Star		Terminal	Pensacola	FL
Holnam		Terminal	White	GA
Holnam		Terminal	Duluth	GA
Holnam		Terminal	Covington	GA
Lone Star		Terminal	Atlanta	GA
Holnam		Terminal	Cedar Rapids	IA
Holnam		Terminal	Des Moines	IA
Lafarge		Terminal	West Des Moines	IA
Lafarge		Terminal	Davenport	IA
Lehigh	Mid-West	Terminal	Mason City	IA
Holnam		Grinding	Chicago Skyway	IL
Lafarge		Grinding	South Chicago	IL
Holnam		Terminal	Chicago Summit	IL
Holnam		Terminal	Chicago West-Lemont	IL
Holnam		Terminal	Rock Island	IL
Lafarge		Terminal	Waukegan	IL
Lafarge		Terminal	Joppa (Grand Chain)	IL
Holnam		Granulator	Gary	IN
Holnam		Granulator	Fairfield	IN
Lafarge		Terminal	Indianapolis	IN
Lehigh	Mid-West	Terminal	Indianapolis	IN
Lone Star		Terminal	Bonner Springs	KS
Lone Star		Grinding	New Orleans	LA
Holnam		Terminal	Baton Rouge	LA
Holnam		Terminal	New Orleans-East	LA
Holnam		Terminal	New Orleans-West	LA
Lone Star		Terminal	New Orleans	LA
Lafarge	Blue Circle	Terminal	Boston	MA
St. Lawrence		Terminal	Everett	MA
Lafarge	Blue Circle	Granulator	Sparrows Point	MD
Lafarge	Blue Circle	Grinding	Sparrows Point	MD
Lafarge	Blue Circle	Terminal	Baltimore	MD
St. Lawrence		Terminal	Baltimore	MD
St. Lawrence		Terminal	Hagerstown	MD
Holnam		Terminal	Detroit	MI
Holnam		Terminal	Elmira	MI
Holnam		Terminal	Grandville	MI
Company	Division	Facility	City	State

Lafarge		Terminal	Muskegon	MI
Lafarge		Terminal	Detroit	MI
Lehigh	Mid-West	Grinding	Savage	MN
Holnam		Terminal	Burnsville	MN
Holnam		Terminal	Minneapolis	MN
Lafarge		Terminal	Minneapolis	MN
Lehigh	Mid-West	Terminal	Burnsville	MN
Lehigh	Mid-West	Terminal	Savage	MN
Holnam		Terminal	Kansas City	MO
Holnam		Terminal	St. Louis	MO
Lone Star		Terminal	St. Louis	MO
Holnam		Terminal	Vicksburg	MS
Lone Star		Terminal	Vicksburg	MS
Lafarge		Terminal	Omaha	NE
St. Lawrence		Grinding	Camden	NJ
Lafarge	Blue Circle	Terminal	Bayonne	NJ
Lehigh	Eastern	Terminal	Newark	NJ
Lehigh	Glens Falls	Grinding	Cementon	NY
Lafarge		Terminal	Buffalo	NY
Lehigh	Glens Falls	Terminal	Cementon	NY
St. Lawrence		Terminal	Buffalo	NY
St. Lawrence		Terminal	Flushing	NY
St. Lawrence		Terminal	Catskill	NY
ESSROC		Grinding	Middlebranch	OH
ESSROC		Grinding	Columbus	OH
ESSROC		Terminal	Middlebranch	OH
Holnam		Terminal	Cincinnati	OH
Lafarge		Terminal	Toledo	OH
Lafarge		Terminal	Columbus	OH
Lafarge		Terminal	Cleveland	OH
Lafarge		Terminal	Paulding	OH
Lone Star		Terminal	Cincinnati	OH
Lafarge		Terminal	Sugar Creek	OK
Lehigh	Eastern	Grinding	Evansville	PA
ESSROC		Terminal	Leetsdale	PA
Lehigh	Eastern	Terminal	Evansville	PA
St. Lawrence		Terminal	Providence	RI
Holnam		Terminal	Memphis	TN
Holnam		Terminal	Nashville	TN
Lafarge		Terminal	Nashville	TN
Lafarge		Terminal	Memphis	TN
Lafarge		Terminal	Union	TN
Lone Star		Terminal	Memphis	TN
Lone Star		Terminal	Nashville	TN
Lone Star		Terminal	Dallas	TX
Lafarge	Blue Circle	Terminal	Chesapeake	VA

Company	Division	Facility	City	State
Holnam		Terminal	Green Bay	WI
Holnam		Terminal	LaCrosse	WI

Lafarge	Terminal Milwaukee	WI
Holnam	Granulator Weirton	WV
Holnam	Grinding Weirton	WV

Note: not all power plants belong to the slag cement association and additional sources exist.

Additional Information

GGBFS Grade 100

COMPANY	LOCATION	CALCIUM OXIDE %	LOSS ON IGNITION %	AVAILABLE ALKALIES %
Holnam, Inc. 16401 Swingley Ridge Rd. Suite 330 Chesterfield, MO 63017 636-537-6027 Buffey Hauptmann bhauptma@holnam.com	Weirton Facility 4996 Freedom Way Weirton WV. 26062 Bob Mulichack			
	Chicago Skyway 3020 E 103 rd Street Chicago, IL 60617 Roberto Carrillo 773-978-8280			