

CHEMICAL REQUIREMENTS OF FLY ASH

Reference - IS 3812 (Part 1): 2013 PULVERIZED FUEL ASH — SPECIFICATION PART 1 FOR USE AS POZZOLANA IN CEMENT, CEMENT MORTAR AND CONCRETE (Third Revision) Reaffirmed 2017 – Table 1 Chemical Requirements (Clauses 5.1 and 6.1)

S No	Characteristics	Requirements		Test method
		Siliceous	Calcareous	
1	Silicon dioxide (SiO ₂) plus aluminium oxide (Al ₂ O ₃) plus iron oxide (Fe ₂ O ₃) in percent by mass, Min	70	50 —	IS 1727
2	Silicon dioxide (SiO ₂) in percent by mass, Min	35	25	IS 1727
3	Reactive silica in percent by mass ¹), Min	20	20	-
4	Magnesium oxide (MgO) in percent by mass, Max	5.0	5.0	IS 1727
5	Total sulphur as sulphur trioxide (SO ₃) in percent by mass, Max	3.0	3.0	-do-
6	Available alkalis as equivalent sodium oxide (Na ₂ O) in percent by mass, Max	1.5	1.5	-
7	Total chlorides in percent by mass, Max	0.05	0.05	IS 4032
8	Loss on ignition in percent by mass, Max	5.0	5.0	IS 1727

PHYSICAL PROPERTIES OF FLY ASH

Reference - IS 3812 (Part 1): 2013 PULVERIZED FUEL ASH — SPECIFICATION PART 1 FOR USE AS POZZOLANA IN CEMENT, CEMENT MORTAR AND CONCRETE (Third Revision) Reaffirmed 2017 – Table 2 Physical Requirements (Clauses 5.1 and 7.1)

1	Characteristics	Requirements	
2	Fineness — Specific surface in m ² /kg by Blaine's permeability method Min	320	
3	Particles retained on 45 microns IS sieve (wet sieving) in percent ¹) Max	34	
4	Lime reactivity — Average compressive strength in N/mm ² , Min	4.5	
5	Compressive strength at 28 days in N/mm ² , Min	Not less than 80 percent of the strength of corresponding plain cement mortar cubes	
6	Soundness by autoclave test — Expansion of specimen in percent, Max	0.8	