



28/01/2022

Material Specifications

This document is for the purpose of providing criteria for the acceptance of sale of fly ash by Millmerran Fly ash either in bulk or packaged form.

Fly ash is the solid material extracted from flue gases of a boiler fired by pulverized coal. All fly ash processed for use in Australian cement and concrete applications derive from electricity generation boilers.

Millmerran Fly Ash meets the mandatory Fly Ash requirements for Grade 1 fly ash as outlined in AS 3582.1 – 2016; *Supplementary cementitious materials, Part 1: Fly ash*. These requirements are outlined in the following table:

AS 3582.1 – FLY ASH SPECIFIED REQUIREMENTS

Grade	Fineness, by mass passing 45 µm sieve, min %	Loss on ignition, max %	Moisture content, max %	SO3 content, max %	Chloride, max %
1	75	4.0	0.5	3.0	0.1

Special Grade or Grade 1 Fly Ash must also meet the requirements of the Australian Technical Infrastructure Committee (ATIC) Cementitious Specification SP43, which states that;

“Significant oxides”, defined as silicon oxide, aluminium oxide and iron oxide to be greater than 70%, plus the total and available alkali (Na₂O equivalent) to meet either of the following criteria:

- *Total alkali content to be less than 3.0%, OR*
- *For total alkali content greater than 3.0%, but less than 4.5%, the available alkali not to exceed 2.0% for any single determination.*

GRADE 1 FLY ASH EXPECTED QUALITY PARAMETERS

Property	Unit	Range	Typical
Fineness (%)	%	81 – 93	87
Average particle size	µm	6 – 12	8
LOI	%	0.1 – 0.3	0.2
Relative Density	-	1.82 – 2.06	1.94
Bulk Density	kg/m ³	900 - 1200	1000
Chloride ion	%	0.000 – 0.002	<0.001
CaO	%	0.45 – 2.69	1.57
Available Alkali	%	0.2 – 0.4	0.3
Relative Strength	%	90 – 120	105
Relative Water	%	90 – 96	94

The information and advice outlines in this specification are provided in good faith and are, to the best of our knowledge, true and accurate and are intended to give a reasonable assessment of the product and its capabilities under specific test conditions. Use of this information and advice under field conditions should only be made after suitable field trials have been carried out to the satisfaction of the user.