

### Thermal Coal Specifications

The following specifications are measured in accordance with ASTM standards

			ABN52		ABN56 RS		ABN56 HS		ABN58		ABN59 LS	
			Typical	Rejection	Typical	Rejection	Typical	Rejection	Typical	Rejection	Typical	Rejection
<b>Proximate Analysis</b>												
Calorific Value	GAD	kcal/kg	5800		6100		6100		6250		6300	
Calorific Value	GAR	kcal/kg	5200	< 5000	5600	< 5400	5600	< 5400	5800	< 5600	5900	< 5700
Calorific Value	NAR	kcal/kg	4900	< 4700	5300	< 5100	5300	< 5100	5500	< 5300	5600	< 5400
Total Moisture	GAR	%	23	> 25	20	> 22	20	> 22	19	> 21	18	> 20
Inherent Moisture	GAD	%	15		13		13		11		11	
Ash	GAD	%	6	> 8	6	> 8	6	> 8	6	> 8	2.5	> 4.5
Volatile Matter	GAD	%	40		40		40		40		40	
Total Sulphur	GAD	%	0.8	> 1	0.8	> 1	1.8	> 2	0.8	> 1	0.4	> 0.6
Hardgrove Index			45	< 42	45	< 42	45	< 42	45	< 42	45	< 42
<b>Sizing</b>												
0 x 50mm		%	100	< 95	100	< 95	100	< 95	100	< 95	100	< 95
0 x 2mm		%	15	> 20	15	> 20	15	> 20	15	> 20	15	> 20
<b>Ash Fusion Temps.</b>												
Initial Deformation	OC		1280	< 1170	1280	< 1170	1280	< 1170	1280	< 1170	1280	< 1170
Spherical	OC		1300	< 1250	1300	< 1250	1300	< 1250	1300	< 1250	1300	< 1250
Hemispherical	OC		1320		1320		1320		1320		1320	
Flow	OC		1350		1350		1350		1350		1350	
<b>Ultimate Analysis</b>												
Carbon	DAF	%	75		75		75		75		75	
Hydrogen	DAF	%	5		5		5		5		5	
Nitrogen	DAF	%	1.7		1.7		1.7		1.7		1.7	
Oxygen	DAF	%	18.3		18.3		18.3		18.3		18.3	
<b>Ash Constituents</b>												
SiO2	DB	%	53		56		53		57		57	
Al2O3	DB	%	25		25		25		25		25	
Fe2O3	DB	%	12.5		10.5		12.5		10.5		10.5	
CaO	DB	%	2.5		2		2.5		1.5		1.5	
MgO	DB	%	1.3		1		1.3		1		1	
SO3	DB	%	1.3		1.8		1.8		2.1		2.1	
TiO2	DB	%	1.2		1.2		1.2		1.2		1.2	
Na2O	DB	%	0.3		0.3		0.3		0.1		0.1	
K2O	DB	%	1.6		1.6		1.6		1.2		1.2	
P2O5	DB	%	0.8		0.5		0.5		0.3		0.3	
Other	DB	%	0.5		0.1		0.3		0.1		0.1	
<b>Trace Elements</b>												
Selenium	DB	ppm	0.2		0.2		0.3		0.1		0.1	
Boron	DB	ppm	120		90		120		90		90	
Arsenic	DB	ppm	3.5		1		3.5		0.7		0.7	
Mercury	DB	ppm	0.05		0.03		0.05		0.03		0.03	
Chlorine	DB	ppm	80		55		55		55		55	
Nickel	DB	ppm	7		4		7		4		4	
Flourine	DB	ppm	70		70		70		50		50	
Phosphorus	DB	ppm	80		80		110		80		60	