WONDERSTONE

TYPICAL ELECTRICAL PROPERTIES

PROPERTY	ASTM TEST NUMBER	UNIT	WONDERSTONE
Electrical			
Dielectric Strength (step 60 cycles)	D667-42T	volts per mil	100
Dielectric Constant:	D667-42T		
60 cycles		-	-
1 MC.		-	5.3
10 MC.		-	5.3
100 MC.		-	5.2
Power Factor:	D667-42T		
60 cycles		-	-
1 MC		-	.01
10 MC		-	.009
100 MC		-	.007
Loss Factor:	D667-42T		
60 cycles		-	-
1 MC		-	.053
10 MC		-	.048
100 MC		-	.036
Te Value	-	°C	.700
Volume Resistivity at various temperatures		Ohms per centimeter cube	
25°C			10^{14}
100°C			6.0×10^{11}
300°C			2.0×10^{9}
500°C			5.0×10^{6}
700°C			3.5×10^{5}
900°C			5.0×10^{4}

TYPICAL MECHANICAL PROPERTIES

PROPERTY	ASTM TEST NUMBER	UNIT	WONDERSTONE
Mechanical			
Hardness (Light Grey)	Mintek	Rockwell B Rockwell F	59 92
Hardness (Dark Grey)	Mintek	Rockwell B Rockwell F	73 99
Hardness After Firing	-	Moh's Scale	6
Flexural Strength	D667-42T	lbs. Per sq, in.	10.000
Compressive Strength	D667-42T	lbs. Per sq, in.	25.000
Tensile Strength	D116.42 Charpy	lbs. Per sq, in.	2.500
Resistance to impact (¼"rod)	D667-42T	Inch-lbs~	3.3

TYPICAL PHYSICAL PROPERTIES

PROPERTY	ASTM TEST NUMBER	UNIT	WONDERSTONE
Physical			
Specific Gravity	Mintek	-	2.76 - 2.85
Water Absorption	D116-42 (A)	%	2.5
Softening Temperature (At normal Pressure)	-	°C °F	1600 2912
Linear Coefficient of: Thermal Expansion 25°C - 100°C 25°C - 600 °C	-	Per °C	2.9×10^{-6} 3.6×10^{-6}
Density	-	lbs. Per cu. in.	0.85
Colour (Air - fired)	-	-	Pink
Safe Temperature at Continuous Heat (Normal Pressure)	-	°C °F	1100 2012
Thermal Conductivity (Approximate Values)	-	$\frac{\text{g.cal x cm. Thick}}{\text{cm}^2 \text{ x sec. x °C}}$	0.003

TYPICAL CHEMICAL ANALYSIS
(NOT GUARANTEED)

COMPOUND	GREY WONDERSTONE	BLACK WONDERSTONE	THEORETICAL PYROPHYLLITE $AL_2\ Si_4\ O_{10}\ (OH)_2$
Al_2O_3	29.2	32.5	28.30
SiO_2 *	59.0 (58.1)	58.2 (56.1)	66.70
Fe_2O_3	2.97	0.79	
MnO	< 0.1	< 0.1	
MgO	< 0.5	< 0.5	
CaO	< 0.1	< 0.1	
TiO_2	1.43	1.84	
K_2O	1.17	0.89	
Na_2O	0.26	0.22	
P_2O_5	0.14	0.2	
C	0.06	0.8	
S	< 0.01	0.01	
CO_2	< 0.1	0.1	
Loss on ignition H_2O (1000 °C)	5.50	6.57	5.0
Li_2O in ppm	17	150	nil
TOTAL	99.67	102.01	100

* = The silica values determined by wet chemical analysis are given in brackets.

TYPICAL TRACE ELEMENTS (NOT GUARANTEED)

ELEMENT	GREY WONDERSTONE (ppm)	BLACK WONDERSTONE (ppm)
Zn	< 10	10
B	20	15
Cu	< 10	10
Cr	40	150
Ni	20	30
V	25	10
Rb	35	30
Y	30	40
Ba	150	130
Ce	115	140
Nd	45	60
Sr	50	60
Zr	360	390
La	50	60
Pr	10	10
Sm	10	10
Gd	10	10
Hf	10	10
Pb	10	10
Th	10	10

Elements present at less than 10 ppm were not reported.