

Chemical Analysis									
Code	ACE	ARK-50	ASI-10	ASI-20	ASF-10	ASB-10	ASK	A-SEM-10	
Type	Ball clay		Illitic Clay		Feldspar	Bentonite	Kaoline		
SiO ₂	61 – 62	69 – 70	68 – 69	67 – 68	72 – 73	66 – 67	73 – 74	44 – 45	
Al ₂ O ₃	24 – 25	16-18	13 – 14	13 – 14	14 – 15	12 – 13	14 – 15	37 – 38	
Fe ₂ O ₃	0.65 – 0.75	1.0-1.3	2.2	2.6	0.8 – 1	1.2 – 1.5	< 1%	< 2	
TiO ₂	1.2 – 1.3	<1.5	0.3	0.35	0.2	0.15	0.4	< 2	
Na ₂ O	0.2 – 0.3	3 - 4.2	1.7	1.8	5.5 – 6.0	1 – 1.2	0.2 – 0.3	0.2 – 0.5	
K ₂ O	0.4 – 0.5		4	4.2	1 – 1.4	0.2 – 0.6	1.3 – 1.5		
CaO	0.1 – 0.2	<0.8	2.4	3.2	0.5 – 0.8	3.5 – 4.5	0.4 – 0.6	< 0.5	
MgO	0.3 – 0.4	<0.8	0.9	0.8	1.2 – 1.4	2 – 2.3	0.4 – 0.6	< 0.5	
SO ₃	0.3	< 1	0.3	0.3	0.2	1 - 2	0.2 – 0.3	----	
L.O.I	9–10	6 – 7	5 – 5.5	5 – 6	2 – 2.5	10 - 12	4.5 – 5	13-14	
Mineralogical Analysis	----	----	----	----	----	----	----	Kaolinite (> 92%), Anatase and Quartz	
Physical & Thermal Properties at	1175°C/ 60'	1178°C/ 45'	1168°C/ 49'	1168°C/ 49'	1177°C/ 67'	1170°C/ 49'	1175°C/ 60'	1173°C / 68'	
Strength (kg/cm ²)	Green	10 – 12	8 - 10	8 - 11	7 – 9	4 – 6	12–14	3 – 5	6 – 8
	Dried	19 – 24	22 – 28	38-42	32-35	18 – 22	35–38	9–11	22–24
	Fired	190 – 220	400 – 500	> 300	> 250	> 600	> 200	> 100	>50
Fired Shrinkage	1.5 – 1.7	5-6	5 – 7	5 - 7	10 – 12	5 – 7	< 0.2	----	
% Water Absorption	11 – 12.5	6-8	2.5–3.5	6-8	< 0.1	4 – 6	15 – 17	----	
Coefficient of thermal Expansion at 500°C (α×10 ⁻⁷ °C ⁻¹)	67	91	92	85	86	77	88	44	
Color Analysis	L= 87 ± 1 a = 1.8 ± 0.1 b = 8.5 ± 0.5	L= 77.72 a = 4.21 b = 11.10	L= 47 ± 2 a = 11 ± 1 b = 16 ± 2	L= 47 ± 2 a = 14 ± 1 b = 18 ± 1	L= 57 ± 2 a = 4 ± 0.5 b = 12 ± 1	L= 68 ± 2 a = 5 ± 1 b = 15 ± 1	L= 84 ± 2 a = 4 ± 0.5 b = 6 ± 1	L= 74 ± 1 a = 4 ± 0.5 b = 3.5 ± 0.5	
Application	Engobe	Porcelain Bodies, Sanitary Ware	Wall, Floor, Porcelain tiles, Façade Brick	Wall, Floor, Porcelain tiles, Façade Brick	Floor&Porcelain tiles,Ceramics,	Tiles, Ceramic, Façade Brick	Wall & Floor tiles Façade Brick	Porcelain Bodies, Sanitary Ware	
Sizing	Briquette	< 40 mm < 10 mm	<15 mm	< 250 mm <15 mm	< 10 mm	< 200 mm	<200 cm < 10 mm	0-12 mm	
Packing	Big bag	Big bag – Bulk	Bulk	Bulk	Bulk	Bulk	Bulk	Big bag - Bulk	
Delivery Place	Tabas Robot e Khan	Tabas Robot e Khan	Qazvin Boein Zahra	Qazvin Boein Zahra	Qazvin Boein Zahra	Qazvin Boein Zahra	Qazvin Boein Zahra	----	

Updated: 12/25/2024

*Samples are tested under company laboratory condition.