TYPE OF CEMENT: I (ASTM C 150)(OPC)

SAMPLE CODE:8581

LAMERD CEMENT CO.
LABORATORY AND QUALITY CONTROL DEPARTMENT
CEMENT TEST CERTIFICATE

For: **Export**
TESTING DATE: **2023-04-27**

SAMPLE CODE:**8581**
TYPE OF CEMENT: **I (ASTM C 150)(OPC)**
RESULTING NUMBER:**14020216**

A. Test Results of Chemical Properties

		Standard			Standard
SiO_2 %	20.52	(ASTM C114)	C_3S	55.51	-
Al_2O_3 %	4.67		C_2S	16.95	-
Fe_2O_3 %	4.21		C_3A	5.25	-
CaO %	62.79		C_4AF	12.81	-
MgO %	2.11	≤ 6.00(ASTM C114)	C_3A+C_3S	60.76	-
SO_3 %	2.37	≤ 3.00(ASTM C114)	$2C_3A+C_4AF$	23.31	-
K_2O %	0.69	(ASTM C114)	C_4AF+C_2F	-	-
Na_2O %	0.24		$CaSO_4$	-	-
Cl - %	0.042	-	Total Alkalies Eq. Na_2O	0.69	Optional
L.O.I %	2.38	≤ 3.00(ASTM C114)	Free CaO	0.84	(WI-LA-55)
Insol. Res. %	0.25	≤ 1.50(ASTM C114)	-	-	-
L.S.F	-	-	-	-	-

B. Test Results of Physical and Mechanical Properties

			Standard				Standard
Specific Surface Area. (cm^2/g) (ASTM C204)		3360	≥ 2600	Autoclave Expansion (%) (ASTM C151)		0.02	≤ 0.8
Residue on Sieve (Micron)	125	0.0	-	Heat of Hydration(Cal/g)	3 days	-	-
	90	0.5	-		7 days	-	-
	63	3.2	-	Compressive Strength (MPa) (ASTM C109)	2 day	-	-
	45	9.5	-		3 days	22.3	≥12
Setting Time (Minutes) (ASTM C191)	Initial	161	≥ 45		7 days	29.2	≥19
					28 days	-	-
	Final	210	≤ 375	Air content of mortar (Volume %) (ASTM C185)		2.6	≤ 12
Normal Consistency (%) (ASTM C187)		24.0	-				

The above tests have been carried out based on ASTM.

Q.C. Manager

Plant Manager.

Shiraz Office: No.142-The distance between alleys 26 and 28, Farhang Shahr Blv- Shiraz-Iran 071-36324281
Factory : 35 KM of Lamerd Ashkanan Road. Lamerd Cement Factory 071-52770710

TYPE OF CEMENT: I (ASTM C 150)(OPC)

SAMPLE CODE:8609

LAMERD CEMENT CO.
LABORATORY AND QUALITY CONTROL DEPARTMENT
CEMENT TEST CERTIFICATE

For: **Export**
TESTING DATE: **2023-05-02**

SAMPLE CODE:**8609**
TYPE OF CEMENT: **I (ASTM C 150)(OPC)**
RESULTING NUMBER:**14020222**

A. Test Results of Chemical Properties

		Standard			Standard
SiO_2 %	20.68	(ASTM C114)	C_3S	52.86	-
Al_2O_3 %	4.45		C_2S	19.41	-
Fe_2O_3 %	4.49		C_3A	4.20	-
CaO %	62.41		C_4AF	13.66	-
MgO %	2.04	≤ 6.00(ASTM C114)	C_3A+C_3S	57.06	-
SO_3 %	2.71	≤ 3.00(ASTM C114)	$2C_3A+C_4AF$	22.06	-
K_2O %	-	(ASTM C114)	C_4AF+C_2F	-	-
Na_2O %	-		$CaSO_4$	-	-
Cl - %	-	-	Total Alkalies Eq. Na_2O	-	Optional
L.O.I %	2.59	≤ 3.00(ASTM C114)	Free CaO	0.78	(WI-LA-55)
Insol. Res. %	0.21	≤ 1.50(ASTM C114)	-	-	-
L.S.F	-	-	-	-	-

B. Test Results of Physical and Mechanical Properties

			Standard				Standard
Specific Surface Area. (cm^2/g) (ASTM C204)		3360	≥ 2600	Autoclave Expansion (%) (ASTM C151)		-0.02	≤ 0.8
Residue on Sieve (Micron)	125	0.0	-	Heat of Hydration(Cal/g)	3 days	-	-
	90	0.6	-		7 days	-	-
	63	3.7	-	Compressive Strength (MPa) (ASTM C109)	2 day	-	-
	45	10.4	-		3 days	22.6	≥12
Setting Time (Minutes) (ASTM C191)	Initial	163	≥ 45		7 days	30.1	≥19
					28 days	-	-
	Final	215	≤ 375	Air content of mortar (Volume %) (ASTM C185)		2.1	≤ 12
Normal Consistency (%) (ASTM C187)		23.5	-				

The above tests have been carried out based on ASTM.

TYPE OF CEMENT: I (ASTM C 150)(OPC)

SAMPLE CODE:8655

LAMERD CEMENT CO.
LABORATORY AND QUALITY CONTROL DEPARTMENT
CEMENT TEST CERTIFICATE

For: **Export**
TESTING DATE: **2023-05-07**

SAMPLE CODE:**8655**
TYPE OF CEMENT: **I (ASTM C 150)(OPC)**
RESULTING NUMBER:**14020227**

A. Test Results of Chemical Properties

		Standard			Standard
SiO_2 %	20.44	(ASTM C114)	C_3S	58.11	-
Al_2O_3 %	4.29		C_2S	14.77	-
Fe_2O_3 %	4.35		C_3A	4.01	-
CaO %	62.70		C_4AF	13.24	-
MgO %	2.03	≤ 6.00(ASTM C114)	C_3A+C_3S	62.12	-
SO_3 %	2.37	≤ 3.00(ASTM C114)	$2C_3A+C_4AF$	21.26	-
K_2O %	0.70	(ASTM C114)	C_4AF+C_2F	-	-
Na_2O %	0.24		$CaSO_4$	-	-
Cl^- %	0.044	-	Total Alkalies Eq. Na_2O	0.70	Optional
L.O.I %	2.85	≤ 3.00(ASTM C114)	Free CaO	0.78	(WI-LA-55)
Insol. Res. %	0.21	≤ 1.50(ASTM C114)	-	-	-
L.S.F	-	-	-	-	-

B. Test Results of Physical and Mechanical Properties

			Standard				Standard
Specific Surface Area. (cm^2/g) (ASTM C204)		3480	≥ 2600	Autoclave Expansion (%) (ASTM C151)		0.01	≤ 0.8
Residue on Sieve (Micron)	125	0.0	-	Heat of Hydration(Cal/g)	3 days	-	-
	90	0.6	-		7 days	-	-
	63	3.4	-	Compressive Strength (MPa) (ASTM C109)	2 day	-	-
	45	10.0	-		3 days	21.7	≥12
Setting Time (Minutes) (ASTM C191)	Initial	167	≥ 45		7 days	29.2	≥19
					28 days	-	-
	Final	225	≤ 375	Air content of mortar (Volume %) (ASTM C185)		2.4	≤ 12
Normal Consistency (%) (ASTM C187)		23.5	-				

The above tests have been carried out based on ASTM.

TYPE OF CEMENT: I (ASTM C 150)(OPC)

SAMPLE CODE:8701

LAMERD CEMENT CO.
LABORATORY AND QUALITY CONTROL DEPARTMENT
CEMENT TEST CERTIFICATE

For: **Export**
TESTING DATE: **2023-05-15**

SAMPLE CODE:**8701**
TYPE OF CEMENT: **I (ASTM C 150)(OPC)**
RESULTING NUMBER:**14020305**

A. Test Results of Chemical Properties

		Standard			Standard
SiO_2 %	20.78	(ASTM C114)	C_3S	55.34	-
Al_2O_3 %	4.55		C_2S	17.83	-
Fe_2O_3 %	4.57		C_3A	4.33	-
CaO %	62.88		C_4AF	13.91	-
MgO %	2.10	≤ 6.00(ASTM C114)	C_3A+C_3S	59.67	-
SO_3 %	1.97	≤ 3.00(ASTM C114)	$2C_3A+C_4AF$	22.57	-
K_2O %	-	(ASTM C114)	C_4AF+C_2F	-	-
Na_2O %	-		$CaSO_4$	-	-
Cl - %	-	-	Total Alkalies Eq. Na_2O	-	Optional
L.O.I %	2.30	≤ 3.00(ASTM C114)	Free CaO	0.84	(WI-LA-55)
Insol. Res. %	0.25	≤ 1.50(ASTM C114)	-	-	-
L.S.F	-	-	-	-	-

B. Test Results of Physical and Mechanical Properties

			Standard				Standard
Specific Surface Area. (cm^2/g) (ASTM C204)		3040	≥ 2600	Autoclave Expansion (%) (ASTM C151)		-	≤ 0.8
Residue on Sieve (Micron)	125	0.0	-	Heat of Hydration(Cal/g)	3 days	-	-
	90	0.6	-		7 days	-	-
	63	3.4	-	Compressive Strength (MPa) (ASTM C109)	2 day	-	-
	45	9.9	-		3 days	22.8	≥12
Setting Time (Minutes) (ASTM C191)	Initial	170	≥ 45		7 days	31.6	≥19
					28 days	-	-
	Final	230	≤ 375	Air content of mortar (Volume %) (ASTM C185)		2.2	≤ 12
Normal Consistency (%) (ASTM C187)		23.5	-				

The above tests have been carried out based on ASTM.

TYPE OF CEMENT: I (ASTM C 150)(OPC)

SAMPLE CODE:8744

LAMERD CEMENT CO.
LABORATORY AND QUALITY CONTROL DEPARTMENT
CEMENT TEST CERTIFICATE

For: **Export**
TESTING DATE: **2023-05-24**

SAMPLE CODE:**8744**
TYPE OF CEMENT: **I (ASTM C 150)(OPC)**
RESULTING NUMBER:**14020313**

A. Test Results of Chemical Properties

		Standard			Standard
SiO_2 %	20.26	(ASTM C114)	C_3S	56.42	-
Al_2O_3 %	4.63		C_2S	15.52	-
Fe_2O_3 %	4.37		C_3A	4.88	-
CaO %	62.70		C_4AF	13.30	-
MgO %	2.04	≤ 6.00(ASTM C114)	C_3A+C_3S	61.30	-
SO_3 %	2.63	≤ 3.00(ASTM C114)	$2C_3A+C_4AF$	23.06	-
K_2O %	-	(ASTM C114)	C_4AF+C_2F	-	-
Na_2O %	-		$CaSO_4$	-	-
Cl^- %	-	-	Total Alkalies Eq. Na_2O	-	Optional
L.O.I %	2.74	≤ 3.00(ASTM C114)	Free CaO	0.73	(WI-LA-55)
Insol. Res. %	0.23	≤ 1.50(ASTM C114)	-	-	-
L.S.F	-	-	-	-	-

B. Test Results of Physical and Mechanical Properties

			Standard				Standard
Specific Surface Area. (cm^2/g) (ASTM C204)		3460	≥ 2600	Autoclave Expansion (%) (ASTM C151)		-	≤ 0.8
Residue on Sieve (Micron)	125	0.0	-	Heat of Hydration(Cal/g)	3 days	-	-
	90	0.6	-		7 days	-	-
	63	3.2	-	Compressive Strength (MPa) (ASTM C109)	2 day	-	-
	45	10.0	-		3 days	22.1	≥12
Setting Time (Minutes) (ASTM C191)	Initial	159	≥ 45		7 days	28.9	≥19
					28 days	-	-
	Final	210	≤ 375	Air content of mortar (Volume %) (ASTM C185)		2.1	≤ 12
Normal Consistency (%) (ASTM C187)		23.5	-				

The above tests have been carried out based on ASTM.

TYPE OF CEMENT: I (ASTM C 150)(OPC)

SAMPLE CODE:8775

LAMERD CEMENT CO.
LABORATORY AND QUALITY CONTROL DEPARTMENT
CEMENT TEST CERTIFICATE

For: **Export**
TESTING DATE: **2023-05-27**

SAMPLE CODE:**8775**
TYPE OF CEMENT: **I (ASTM C 150)(OPC)**
RESULTING NUMBER:**14020316**

A. Test Results of Chemical Properties

		Standard			Standard
SiO_2 %	20.52	(ASTM C114)	C_3S	56.09	-
Al_2O_3 %	4.59		C_2S	16.51	-
Fe_2O_3 %	4.45		C_3A	4.63	-
CaO %	62.92		C_4AF	13.54	-
MgO %	1.92	≤ 6.00(ASTM C114)	C_3A+C_3S	60.72	-
SO_3 %	2.42	≤ 3.00(ASTM C114)	$2C_3A+C_4AF$	22.80	-
K_2O %	0.69	(ASTM C114)	C_4AF+C_2F	-	-
Na_2O %	0.23		$CaSO_4$	-	-
Cl^- %	0.038	-	Total Alkalies Eq. Na_2O	0.68	Optional
L.O.I %	2.18	≤ 3.00(ASTM C114)	Free CaO	0.78	(WI-LA-55)
Insol. Res. %	0.23	≤ 1.50(ASTM C114)	-	-	-
L.S.F	-	-	-	-	-

B. Test Results of Physical and Mechanical Properties

			Standard				Standard
Specific Surface Area. (cm^2/g) (ASTM C204)		3400	≥ 2600	Autoclave Expansion (%) (ASTM C151)		0.01	≤ 0.8
Residue on Sieve (Micron)	125	0.0	-	Heat of Hydration(Cal/g)	3 days	-	-
	90	0.6	-		7 days	-	-
	63	3.5	-	Compressive Strength (MPa) (ASTM C109)	2 day	-	-
	45	10.2	-		3 days	22.5	≥12
Setting Time (Minutes) (ASTM C191)	Initial	165	≥ 45		7 days	30.2	≥19
					28 days	-	-
	Final	220	≤ 375	Air content of mortar (Volume %) (ASTM C185)		2.0	≤ 12
Normal Consistency (%) (ASTM C187)		23.5	-				

The above tests have been carried out based on ASTM.

TYPE OF CEMENT: I (ASTM C 150)(OPC)

SAMPLE CODE:8797

LAMERD CEMENT CO.
LABORATORY AND QUALITY CONTROL DEPARTMENT
CEMENT TEST CERTIFICATE

For: **Export**
TESTING DATE: **2023-06-03**

SAMPLE CODE:**8797**
TYPE OF CEMENT: **I (ASTM C 150)(OPC)**
RESULTING NUMBER:**14020321**

A. Test Results of Chemical Properties

		Standard			Standard
SiO_2 %	20.54	(ASTM C114)	C_3S	55.88	-
Al_2O_3 %	4.55		C_2S	16.73	-
Fe_2O_3 %	4.25		C_3A	4.87	-
CaO %	62.81		C_4AF	12.93	-
MgO %	2.06	≤ 6.00(ASTM C114)	C_3A+C_3S	60.75	-
SO_3 %	2.48	≤ 3.00(ASTM C114)	$2C_3A+C_4AF$	22.67	-
K_2O %	-	(ASTM C114)	C_4AF+C_2F	-	-
Na_2O %	-		$CaSO_4$	-	-
Cl - %	-	-	Total Alkalies Eq. Na_2O	0.68	Optional
L.O.I %	2.71	≤ 3.00(ASTM C114)	Free CaO	0.78	(WI-LA-55)
Insol. Res. %	0.20	≤ 1.50(ASTM C114)	-	-	-
L.S.F	-	-	-	-	-

B. Test Results of Physical and Mechanical Properties

			Standard				Standard
Specific Surface Area. (cm^2/g) (ASTM C204)		3400	≥ 2600	Autoclave Expansion (%) (ASTM C151)		-	≤ 0.8
Residue on Sieve (Micron)	125	0.0	-	Heat of Hydration(Cal/g)	3 days	-	-
	90	0.6	-		7 days	-	-
	63	3.4	-	Compressive Strength (MPa) (ASTM C109)	2 day	-	-
	45	10.2	-		3 days	22.4	≥12
Setting Time (Minutes) (ASTM C191)	Initial	167	≥ 45		7 days	29.9	≥19
					28 days	-	-
	Final	225	≤ 375	Air content of mortar (Volume %) (ASTM C185)		2.1	≤ 12
Normal Consistency (%) (ASTM C187)		23.5	-				

The above tests have been carried out based on ASTM.

TYPE OF CEMENT: I (ASTM C 150)(OPC)

SAMPLE CODE:8828

LAMERD CEMENT CO.
LABORATORY AND QUALITY CONTROL DEPARTMENT
CEMENT TEST CERTIFICATE

For: **Export**
TESTING DATE: **2023-06-06**

SAMPLE CODE:**8828**
TYPE OF CEMENT: **I (ASTM C 150)(OPC)**
RESULTING NUMBER:**14020323**

A. Test Results of Chemical Properties

		Standard			Standard
SiO_2 %	20.72	(ASTM C114)	C_3S	54.25	-
Al_2O_3 %	4.55		C_2S	18.48	-
Fe_2O_3 %	4.33		C_3A	4.73	-
CaO %	62.74		C_4AF	13.18	-
MgO %	2.06	≤ 6.00(ASTM C114)	C_3A+C_3S	58.98	-
SO_3 %	2.43	≤ 3.00(ASTM C114)	$2C_3A+C_4AF$	22.64	-
K_2O %	-	(ASTM C114)	C_4AF+C_2F	-	-
Na_2O %	-		$CaSO_4$	-	-
Cl - %	-	-	Total Alkalies Eq. Na_2O	-	Optional
L.O.I %	2.46	≤ 3.00(ASTM C114)	Free CaO	0.84	(WI-LA-55)
Insol. Res. %	0.27	≤ 1.50(ASTM C114)	-	-	-
L.S.F	-	-	-	-	-

B. Test Results of Physical and Mechanical Properties

			Standard				Standard
Specific Surface Area. (cm^2/g) (ASTM C204)		3370	≥ 2600	Autoclave Expansion (%) (ASTM C151)		-	≤ 0.8
Residue on Sieve (Micron)	125	0.0	-	Heat of Hydration(Cal/g)	3 days	-	-
	90	0.5	-		7 days	-	-
	63	2.8	-	Compressive Strength (MPa) (ASTM C109)	2 day	-	-
	45	9.1	-		3 days	23.2	≥12
Setting Time (Minutes) (ASTM C191)	Initial	152	≥ 45		7 days	31.1	≥19
					28 days	-	-
	Final	205	≤ 375	Air content of mortar (Volume %) (ASTM C185)		2.0	≤ 12
Normal Consistency (%) (ASTM C187)		23.25	-				

The above tests have been carried out based on ASTM.

TYPE OF CEMENT: I (ASTM C 150)(OPC)

SAMPLE CODE:8834

LAMERD CEMENT CO.
LABORATORY AND QUALITY CONTROL DEPARTMENT
CEMENT TEST CERTIFICATE

For: **Export**
TESTING DATE: **2023-06-09**

SAMPL CODE:**8834**
TYPE OF CEMENT: **I (ASTM C 150)(OPC)**
RESULTING NUMBER:**14020327**

A. Test Results of Chemical Properties

		Standard			Standard
SiO_2 %	20.94	(ASTM C114)	C_3S	53.52	-
Al_2O_3 %	4.41		C_2S	19.66	-
Fe_2O_3 %	4.33		C_3A	4.36	-
CaO %	62.83		C_4AF	13.18	-
MgO %	2.04	≤ 6.00(ASTM C114)	C_3A+C_3S	57.88	-
SO_3 %	2.56	≤ 3.00(ASTM C114)	$2C_3A+C_4AF$	21.90	-
K_2O %	-	(ASTM C114)	C_4AF+C_2F	-	-
Na_2O %	-		$CaSO_4$	-	-
Cl - %	-	-	Total Alkalies Eq. Na_2O	-	Optional
L.O.I %	2.45	≤ 3.00(ASTM C114)	Free CaO	0.78	(WI-LA-55)
Insol. Res. %	0.25	≤ 1.50(ASTM C114)	-	-	-
L.S.F	-	-	-	-	-

B. Test Results of Physical and Mechanical Properties

			Standard				Standard
Specific Surface Area. (cm^2/g) (ASTM C204)		3340	≥ 2600	Autoclave Expansion (%) (ASTM C151)		-	≤ 0.8
Residue on Sieve (Micron)	125	0.0	-	Heat of Hydration(Cal/g)	3 days	-	-
	90	0.5	-		7 days	-	-
	63	3.4	-	Compressive Strength (MPa) (ASTM C109)	2 day	-	-
	45	10.1	-		3 days	22.7	≥12
Setting Time (Minutes) (ASTM C191)	Initial	163	≥ 45		7 days	-	≥19
					28 days	-	-
	Final	215	≤ 375	Air content of mortar (Volume %) (ASTM C185)		1.9	≤ 12
Normal Consistency (%) (ASTM C187)		23.25	-				

The above tests have been carried out based on ASTM.