



CERTIFICADO DE CONTROLE DA QUALIDADE DO CIMENTO

TIPO/CLASSE: CPV ARI RS

FÁBRICA: FPA - FÁBRICA DE PACATUBA - SE

MÊS/ANO: ABRIL/2026



ENSAIOS QUÍMICOS					ENSAIOS FÍSICOS E MECÂNICOS										
ENSAIOS	PERDA AO	RESIDUO	ÓXIDO DE	TRIÓXIDO	RESISTÊNCIA À COMPRESSÃO				FINURA			EXPANSIB.	TEMPO DE PEGA		CONSIST.
	FOGO	INSOLÚVEL	MAGNÉSIO	DE ENXOFRE	1 DIA	3 DIAS	7 DIAS	28 DIAS	BLAINE	#325	#200	A QUENTE	INÍCIO	FIM	NORMAL
	(PF)	(RI)	(MgO)	(SO3)											
UNIDADE	(%)	(%)	(%)	(%)	(MPa)	(MPa)	(MPa)	(MPa)	(cm²/g)	(%)	(%)	(mm)	(min)	(min)	(%)
LIMITE NORMATIVO (ABNT NBR 16697:2018)	≤ 6,5	–	–	≤ 4,5	≥ 14,0	≥ 24,0	≥ 34,0	–	–	–	≤ 6,0	≤ 5	≥ 60	≤ 600	–
01/04/2026	5.51	3.73	3.580	3.36	20.80	31.7	37.5	44.4	4300	1.3	0.1	1.0	160	210	30.0
02/04/2026	5.46	2.91	3.640	3.52	20.90	32.0	36.6	43.9	4260	1.6	0.1	1.0	155	215	29.8
03/04/2026	5.95	2.64	3.990	3.64	23.20	35.5	36.4	44.2	4370	1.5	0.1	1.0	165	210	29.6
04/04/2026	5.95	2.64	3.990	3.64	23.20	35.5	36.4	44.2	4370	1.5	0.1	1.0	165	210	29.6
06/04/2026	5.69	2.70	4.070	3.88	21.10	33.7	37.4	44.0	4390	1.5	0.1	1.0	160	210	29.4
07/04/2026	5.46	2.71	4.120	3.79	22.40	33.8	38.0	45.9	4370	1.4	0.1	1.0	155	215	29.8
08/04/2026	5.42	2.63	4.070	3.12	21.20	32.2	35.8	42.0	4400	1.2	0.1	1.0	160	220	29.6
09/04/2026	5.84	2.69	3.920	3.44	24.00	35.2	39.1	45.1	4430	1.3	0.1	1.0	165	225	29.8
10/04/2026	6.30	2.67	3.710	3.69	22.30	31.4	37.2	43.6	4260	1.3	0.1	1.0	165	215	29.8
11/04/2026	6.30	2.67	3.710	3.69	22.30	31.4	37.2	43.6	4260	1.3	0.1	1.0	165	215	29.8
13/04/2026	6.22	3.00	3.700	3.60	21.80	32.9	35.2	40.5	4310	1.4	0.1	1.0	165	215	29.6
14/04/2026	5.74	2.76	3.630	3.56	21.50	33.8	39.6	43.1	4390	1.1	0.1	1.0	160	210	30.0
15/04/2026	5.31	2.66	3.340	3.75	21.30	34.5	38.8	43.0	4440	1.4	0.1	1.0	170	215	29.6
16/04/2026	5.41	2.08	3.100	3.37	20.40	34.4	38.9	44.8	4240	1.3	0.1	1.0	175	220	29.6
17/04/2026	5.40	2.22	2.920	3.43	19.30	33.8	37.3	42.4	4130	1.2	0.1	1.0	180	225	29.0
18/04/2026	5.40	2.22	2.920	3.43	19.30	33.8	37.3	42.4	4130	1.2	0.1	1.0	180	225	29.0
19/04/2026	5.40	2.22	2.920	3.43	19.30	33.8	37.3	42.4	4130	1.2	0.1	1.0	180	225	29.0
20/04/2026	5.41	2.60	3.260	3.42	21.10	32.4	37.4	44.4	4210	1.5	0.1	1.0	170	215	29.6
21/04/2026	5.41	2.68	3.260	3.42	21.10	32.4	37.4	44.4	4210	1.5	0.1	1.0	170	215	29.6
22/04/2026	5.93	2.68	3.870	3.87	20.60	32.1	37.3	44.9	4290	1.2	0.1	1.0	175	220	29.8
23/04/2026	6.08	2.65	3.090	3.55	20.20	31.8	37.8	43.1	4300	1.3	0.1	1.0	175	210	29.6
24/04/2026	6.00	3.34	3.390	3.52	20.70	33.3	37.9	45.2	4340	1.3	0.1	1.0	175	215	29.6
25/04/2026	6.00	3.34	3.390	3.52	20.70	33.3	37.9	45.2	4340	1.3	0.1	1.0	175	215	29.6
27/04/2026	5.62	3.56	3.840	3.38	20.70	33.4	37.3	44.7	4380	1.6	0.1	1.0	175	215	29.4
28/04/2026	5.02	3.70	3.790	3.41	22.10	34.1	36.8	45.1	4210	1.5	0.1	1.0	175	205	29.6
29/04/2026	5.80	3.40	3.490	3.28	20.70	33.1	36.7	43.2	4390	1.6	0.1	1.0	180	225	29.8
MÉDIA	5.69	2.81	3.570	3.53	21.24	33.3	37.4	43.8	4302	1.4	0.1	1.0	169	216	29.6
DESVIO PADRÃO	0.34	0.45	0.380	0.18	1.18	1.2	1.0	1.2	93	0.1	0.0	0.0	8	6	0.3
MÍNIMO	5.02	2.08	2.920	3.12	19.30	31.4	35.2	40.5	4130	1.1	0.1	1.0	155	205	29.0
MÁXIMO	6.30	3.73	4.120	3.88	24.00	35.5	39.6	45.9	4440	1.6	0.1	1.0	180	225	30.0

Responsável Técnico
JONAS MEDEIROS DE PAIVA
CRQ: 153000627 - XV Região



CERTIFICADO DE CONTROLE DA QUALIDADE DO CIMENTO

TIPO/CLASSE: CPV ARI RS

FÁBRICA: FPA - FÁBRICA DE PACATUBA - SE

MÊS/ANO: MAIO/2026



ENSAIOS QUÍMICOS					ENSAIOS FÍSICOS E MECÂNICOS										
ENSAIOS	PERDA AO	RESIDUO	ÓXIDO DE	TRIÓXIDO	RESISTÊNCIA À COMPRESSÃO				FINURA			EXPANSIB.	TEMPO DE PEGA		CONSIST.
	FOGO	INSOLÚVEL	MAGNÉSIO	DE ENXOFRE	1 DIA	3 DIAS	7 DIAS	28 DIAS	BLAINE	#325	#200	A QUENTE	INÍCIO	FIM	NORMAL
	(PF)	(RI)	(MgO)	(SO3)											
UNIDADE	(%)	(%)	(%)	(%)	(MPa)	(MPa)	(MPa)	(MPa)	(cm²/g)	(%)	(%)	(mm)	(min)	(min)	(%)
LIMITE NORMATIVO (ABNT NBR 16697:2018)	≤ 6,5	–	–	≤ 4,5	≥ 14,0	≥ 24,0	≥ 34,0	–	–	–	≤ 6,0	≤ 5	≥ 60	≤ 600	–
02/05/2026	5.23	3.00	4.300	3.60	20.20	32.4	37.8	40.5	4300	1.7	0.1	1.0	170	220	29.8
04/05/2026	5.22	2.95	4.460	3.69	19.10	32.3	35.8	41.0	4310	1.6	0.1	1.0	165	200	29.8
05/05/2026	5.77	2.90	4.480	3.56	20.00	33.3	37.7	42.4	4390	1.5	0.1	1.0	150	185	29.4
06/05/2026	5.04	2.62	4.080	3.64	19.80	31.4	37.6	43.5	4490	1.5	0.1	1.0	165	205	29.8
07/05/2026	5.66	2.47	2.510	3.45	17.70	28.3	35.8	42.6	5010	0.8	0.1	1.0	165	200	29.8
08/05/2026	5.66	2.38	3.010	3.65	17.20	28.1	37.0	43.7	5000	0.7	0.1	1.0	165	200	30.2
09/05/2026	5.66	2.38	3.010	3.65	17.20	28.1	37.0	43.7	5000	0.7	0.1	1.0	165	200	30.2
11/05/2026	5.40	2.59	3.520	3.59	18.40	29.2	37.4	43.1	5030	0.9	0.1	1.0	155	200	30.0
12/05/2026	6.28	2.73	2.550	3.54	15.70	27.7	34.5	45.0	5050	0.6	0.1	0.5	170	210	30.6
13/05/2026	6.10	2.78	2.510	3.41	14.70	25.5	34.5	40.1	5280	0.6	0.1	1.0	170	215	31.8
14/05/2026	6.00	2.77	2.720	3.47	15.90	25.3	34.8	41.0	5100	0.8	0.1	1.0	165	210	30.8
15/05/2026	6.07	2.58	2.540	3.36	16.20	25.4	34.8	43.0	5370	0.5	0.1	1.0	170	205	31.0
16/05/2026	6.07	2.58	2.540	3.36	16.20	25.4	34.8	43.0	5370	0.5	0.1	1.0	170	205	31.0
19/05/2026	5.31	2.57	2.400	3.46	17.40	27.8	34.1	43.1	5300	0.5	0.1	1.0	165	205	31.0
20/05/2026	5.12	2.12	2.540	3.59	17.40	28.8	34.4	41.8	5210	0.5	0.1	1.0	160	195	30.8
21/05/2026	6.28	2.19	2.510	3.49	17.40	28.1	35.1	41.6	5260	0.5	0.1	1.0	175	215	30.8
22/05/2026	6.10	2.20	2.680	3.44	16.50	26.5	34.9	42.5	5210	0.6	0.1	1.0	180	220	31.0
23/05/2026	6.10	2.20	2.680	3.44	16.50	26.5	34.9	42.5	5210	0.6	0.1	1.0	180	220	31.0
25/05/2026	6.06	2.36	2.590	3.39	16.10	26.4	34.7	40.7	5330	0.8	0.1	1.0	180	220	31.0
26/05/2026	5.23	2.18	2.710	3.47	17.10	27.9	34.1	40.8	5240	0.8	0.1	1.0	170	215	30.0
27/05/2026	5.61	2.31	2.580	3.42	16.50	27.1	34.1	42.0	4320	0.7	0.1	1.0	165	215	30.6
28/05/2026	5.41	2.53	2.610	3.37	16.30	26.1	34.1	40.6	4540	1.6	0.1	1.0	175	225	30.8
29/05/2026	5.05	2.57	3.760	3.60	16.10	26.0	34.9	40.2	4410	1.0	0.1	1.0	180	220	30.0
30/05/2026	5.05	2.57	3.760	3.60	16.10	26.0	34.9	40.2	4410	1.0	0.1	1.0	180	220	30.0
MÉDIA	5.65	2.52	3.040	3.51	17.15	27.9	35.4	42.0	4923	0.9	0.1	1.0	169	209	30.5
DESVIO PADRÃO	0.43	0.25	0.700	0.10	1.43	2.3	1.3	1.4	398	0.4	0.0	0.1	8	10	0.6
MÍNIMO	5.04	2.12	2.400	3.36	14.70	25.3	34.1	40.1	4300	0.5	0.1	0.5	150	185	29.4
MÁXIMO	6.28	3.00	4.480	3.69	20.20	33.3	37.8	45.0	5370	1.7	0.1	1.0	180	225	31.8

Responsável Técnico
JONAS MEDEIROS DE PAIVA
CRQ: 153000627 - XV Região



CERTIFICADO DE CONTROLE DA QUALIDADE DO CIMENTO

TIPO/CLASSE: CPV ARI RS
FÁBRICA: FPA - FÁBRICA DE PACATUBA - SE
MÊS/ANO: JUNHO/2026



ENSAIOS QUÍMICOS					ENSAIOS FÍSICOS E MECÂNICOS										
ENSAIOS	PERDA AO FOGO	RESIDUO INSOLÚVEL	ÓXIDO DE MAGNÉSIO	TRIÓXIDO DE ENXOFRE	RESISTÊNCIA À COMPRESSÃO				FINURA			EXPANSIB. A QUENTE	TEMPO DE PEGA		CONSIST. NORMAL
					1 DIA	3 DIAS	7 DIAS	28 DIAS	BLAINE	#325	#200		INÍCIO	FIM	
	(PF)	(RI)	(MgO)	(SO3)											
UNIDADE	(%)	(%)	(%)	(%)	(MPa)	(MPa)	(MPa)	(MPa)	(cm²/g)	(%)	(%)	(mm)	(min)	(min)	(%)
LIMITE NORMATIVO (ABNT NBR 16697:2018)	≤ 6,5	–	–	≤ 4,5	≥ 14,0	≥ 24,0	≥ 34,0	–	–	–	≤ 6,0	≤ 5	≥ 60	≤ 600	–
01/06/2026	4.82	3.03	3.570	3.50	16.30	26.4	35.0	40.3	4380	1.4	0.1	1.0	175	215	29.8
02/06/2026	4.60	3.86	3.020	3.60	16.90	29.0	34.1	41.9	4260	1.3	0.1	1.0	180	220	29.8
03/06/2026	4.79	3.01	3.510	3.70	18.10	29.2	34.2	40.9	4260	1.4	0.1	1.0	170	205	29.4
05/06/2026	5.90	2.76	3.210	3.59	19.50	29.7	34.9		4610	1.8	0.1	1.0	160	200	29.4
06/06/2026	5.90	2.76	3.210	3.59	19.50	29.7	34.9		4610	1.8	0.1	1.0	160	200	29.4
08/06/2026	5.51	2.23	3.180	3.79	18.60	27.5	34.8		4800	1.7	0.1	1.0	160	190	28.8
09/06/2026	5.70	2.64	3.240	3.69	19.40	30.7	36.7		4710	1.4	0.1	1.0	145	180	28.8
10/06/2026	5.70	2.64	3.240	3.69	19.40	30.7	36.7		4710	1.4	0.1	1.0	145	180	28.8
11/06/2026	5.54	2.06	2.160	3.79	17.90	30.0	35.3		4570	1.7	0.1	1.0	165	205	29.0
12/06/2026	5.71	2.03	2.340	3.86	18.50	29.8	35.1		4570	1.5	0.1	1.0	165	210	29.2
13/06/2026	5.71	2.03	2.340	3.86	18.50	29.8	35.1		4570	1.5	0.1	1.0	165	210	29.2
15/06/2026	5.12	2.63	2.090	3.84	19.40	30.5	37.3		4540	1.6	0.1	1.0	160	195	29.0
16/06/2026	5.25	2.49	2.650	3.86	18.80	29.0	35.8		4560	1.5	0.1	1.0	165	200	29.0
17/06/2026	4.45	2.53	3.000	3.78	20.80	31.6	35.6		4490	1.4	0.1	1.0	155	185	29.0
18/06/2026	4.94	2.32	2.970	3.72	21.00	31.5	37.6		4560	1.5	0.1	1.0	150	195	29.2
19/06/2026	4.88	2.15	3.340	3.59	20.40	31.4	36.9		4410	1.3	0.1	1.0	160	190	29.2
20/06/2026	4.88	2.15	3.340	3.59	20.40	31.4	36.9		4410	1.3	0.1	1.0	160	190	29.2
22/06/2026	4.90	2.18	3.480	3.67	21.10	35.5	38.6		4190	1.3	0.1	1.0	160	195	28.8
23/06/2026	4.90	2.18	3.480	3.67	21.10	35.5	38.6		4190	1.3	0.1	1.0	160	195	28.8
25/06/2026	5.66	2.02	3.430	3.74	20.10	31.9	37.4		4430	1.4	0.1	1.0	160	200	28.6
26/06/2026	5.75	1.93	4.210	3.73	21.20	33.6			4530	1.7	0.1	1.0	155	190	28.6
27/06/2026	5.75	1.93	4.210	3.73	21.20	33.6			4530	1.7	0.1	1.0	155	190	28.6
MÉDIA	5.29	2.43	3.150	3.71	19.46	30.8	36.1	41.0	4495	1.5	0.1	1.0	160	197	29.1
DESVIO PADRÃO	0.47	0.47	0.560	0.10	1.41	2.3	1.4	0.8	165	0.2	0.0	0.0	8	11	0.4
MÍNIMO	4.45	1.93	2.090	3.50	16.30	26.4	34.1	40.3	4190	1.3	0.1	1.0	145	180	28.6
MÁXIMO	5.90	3.86	4.210	3.86	21.20	35.5	38.6	41.9	4800	1.8	0.1	1.0	180	220	29.8

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