



CERTIFICADO DE CONTROLE DA QUALIDADE DO CIMENTO

TIPO/CLASSE: CPV ARI RS

FÁBRICA: FPA - FÁBRICA DE PACATUBA - SE

MÊS/ANO: JULHO/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	
	(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	–
01/07/2026	5.82	1.90	3.560	3.74	19.30	31.3	35.9	40.1	4550	1.7	0.1	1.0	160	190	28.4
02/07/2026	5.59	2.25	3.460	3.63	18.30	30.2	34.3	40.1	4470	1.4	0.1	1.0	155	190	28.6
03/07/2026	5.50	2.40	3.710	3.60	22.00	30.5	34.6	43.2	4450	1.4	0.1	1.0	155	190	28.6
04/07/2026	5.50	2.40	3.710	3.60	22.00	30.5	34.6	43.2	4450	1.4	0.1	1.0	155	190	28.6
06/07/2026	5.50	2.72	3.940	3.72	20.50	29.5	34.2	41.5	4550	1.5	0.1	1.0	150	185	28.6
07/07/2026	5.68	2.78	3.870	3.58	21.30	30.9	35.9	40.4	4490	1.2	0.1	1.0	160	190	28.8
08/07/2026	5.68	2.78	3.870	3.58	21.30	30.9	35.9	40.4	4490	1.2	0.1	1.0	160	190	28.8
09/07/2026	5.47	2.99	4.130	3.63	21.40	30.3	34.4	40.6	4310	1.2	0.1	1.0	155	190	28.8
10/07/2026	5.06	2.59	3.940	3.72	21.80	32.2	34.3	40.3	4350	1.6	0.1	1.0	160	195	29.0
11/07/2026	5.06	2.61	3.940	3.72	21.80	32.2	34.3	40.2	4350	1.6	0.1	1.0	160	195	29.0
14/07/2026	5.33	2.77	3.990	3.68	22.20	30.8	35.6	40.1	4410	1.4	0.1	1.0	155	190	29.2
15/07/2026	5.18	2.79	4.130	3.65	21.90	32.5	35.4	40.4	4280	1.6	0.1	1.0	155	185	28.8
16/07/2026	5.97	2.67	4.300	3.69	21.80	29.5	34.2	40.1	4520	1.7	0.1	1.0	155	185	29.0
17/07/2026	5.47	2.60	3.880	3.70	22.70	31.6	36.4	40.1	4220	1.6	0.1	1.0	150	180	28.8
18/07/2026	5.47	2.60	3.880	3.70	22.70	31.6	36.4	40.1	4220	1.6	0.1	1.0	150	180	28.8
20/07/2026	5.26	2.98	4.100	3.68	22.30	32.6	36.2	41.9	4370	1.6	0.1	1.0	145	175	29.0
21/07/2026	5.38	2.42	3.910	3.54	22.70	32.6	38.1	41.6	4350	1.4	0.1	1.0	150	185	29.0
22/07/2026	5.35	2.33	3.690	3.52	23.50	33.3	37.8	40.6	4140	1.5	0.1	1.0	150	180	29.0
23/07/2026	5.02	2.32	3.450	3.64	21.20	31.8	34.9	42.4	4250	1.6	0.1	1.0	150	180	29.0
24/07/2026	5.95	2.92	3.500	3.63	20.00	31.2	37.6	41.4	4330	1.5	0.1	1.0	155	190	29.0
25/07/2026	5.95	2.92	3.500	3.63	20.00	31.2	37.6	41.4	4330	1.5	0.1	1.0	155	190	29.0
27/07/2026	6.41	2.68	3.450	3.59	19.90	29.9	37.4	42.9	4200	1.5	0.1	1.0	155	185	28.6
28/07/2026	6.02	2.42	3.510	3.49	20.70	31.3	36.6	41.5	4380	1.5	0.1	1.0	155	185	28.6
29/07/2026	6.30	2.83	3.300	3.57	20.10	31.9	35.8	41.2	4400	1.5	0.1	1.0	160	195	28.8
30/07/2026	6.38	2.96	3.420	3.54	19.60	31.0	34.2	41.8	4350	1.7	0.1	1.0	155	185	28.8
31/07/2026	6.50	3.65	3.450	3.59	17.80	29.5	34.4	40.1	4400	1.7	0.1	1.0	155	190	29.0
MÉDIA	5.65	2.66	3.750	3.63	21.11	31.2	35.7	41.1	4370	1.5	0.1	1.0	155	187	28.8
DESVIO PADRÃO	0.43	0.33	0.270	0.07	1.41	1.0	1.3	1.0	110	0.2	0.0	0.0	4	5	0.2
MÍNIMO	5.02	1.90	3.300	3.49	17.80	29.5	34.2	40.1	4140	1.2	0.1	1.0	145	175	28.4
MÁXIMO	6.50	3.65	4.300	3.74	23.50	33.3	38.1	43.2	4550	1.7	0.1	1.0	160	195	29.2


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: AGOSTO/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	–
01/08/2026	6.50	3.65	3.450	3.59	17.80	29.5	34.4	40.1	4400	1.7	0.1	1.0	155	190	29.0
03/08/2026	6.33	3.81	3.600	3.67	18.00	28.2	34.3	40.4	4300	1.5	0.1	1.0	150	185	29.0
04/08/2026	5.70	2.79	3.320	3.96	18.60	29.1	34.7	40.7	4440	1.6	0.1	1.0	160	195	29.6
05/08/2026	5.44	4.50	3.400	3.68	18.70	30.1	34.1	40.3	4500	1.7	0.1	1.0	165	195	30.0
06/08/2026	5.96	4.21	3.980	3.98	18.70	29.4	34.3	40.1	4380	1.5	0.1	1.0	165	195	30.0
07/08/2026	5.76	4.04	3.300	3.98	18.50	29.6	34.7	41.2	4410	1.3	0.1	1.0	170	205	28.8
08/08/2026	5.76	4.04	3.300	3.98	18.50	29.6	34.7	41.2	4410	1.3	0.1	1.0	170	205	28.8
10/08/2026	4.63	3.69	3.210	3.96	18.60	28.4	34.4	40.4	4300	1.1	0.1	1.0	160	195	29.8
11/08/2026	6.01	3.29	3.310	4.00	17.20	27.2	34.1	40.4	4320	1.4	0.1	1.0	170	205	29.8
13/08/2026	5.29	3.57	3.160	3.61	18.00	29.0	34.4	41.0	4100	1.1	0.1	1.0	160	190	29.8
15/08/2026	5.40	2.50	2.970	3.58	18.40	27.9	34.8	40.7	4470	1.0	0.1	1.0	160	195	29.8
17/08/2026	5.78	1.91	2.900	3.85	16.70	26.6	34.1	40.3	4550	1.0	0.1	1.0	170	205	29.8
18/08/2026	5.89	2.10	2.740	3.71	16.80	29.7	35.3	40.6	4480	1.1	0.1	1.0	160	200	29.8
19/08/2026	5.80	2.43	2.730	3.79	16.90	28.3	35.2	40.4	4570	1.0	0.1	1.0	160	200	29.6
20/08/2026	5.45	2.57	2.850	3.74	18.50	29.4	34.2	43.3	4260	0.4	0.1	1.0	160	190	29.6
21/08/2026	6.00	2.15	2.770	3.73	17.20	28.5	35.9	44.2	4620	1.0	0.1	1.0	160	195	30.2
22/08/2026	6.00	2.15	2.770	3.73	17.20	28.5	35.9	44.2	4620	1.0	0.1	1.0	160	195	30.2
24/08/2026	4.82	2.03	2.450	3.87	18.80	30.5	36.0	43.4	4660	0.4	0.1	1.0	150	180	30.2
25/08/2026	4.74	1.85	2.590	3.86	20.00	27.7	37.2	43.0	4480	0.7	0.1	1.0	155	190	30.2
28/08/2026	4.94	2.19	2.110	3.62	16.60	28.8	34.8		4360	1.0	0.1	1.0	150	180	30.0
29/08/2026	4.94	2.19	2.110	3.62	16.60	28.8	34.8		4360	1.0	0.1	1.0	150	180	30.0
31/08/2026	5.24	1.97	3.000	3.79	17.90	28.0	34.6		4380	1.2	1.0	1.0	150	185	29.6
MÉDIA	5.56	2.89	3.000	3.79	17.92	28.8	34.9	41.4	4426	1.1	0.1	1.0	160	193	29.7
DESVIO PADRÃO	0.52	0.89	0.460	0.15	0.91	1.0	0.8	1.4	133	0.4	0.2	0.0	7	8	0.4
MÍNIMO	4.63	1.85	2.110	3.58	16.60	26.6	34.1	40.1	4100	0.4	0.1	1.0	150	180	28.8
MÁXIMO	6.50	4.50	3.980	4.00	20.00	30.5	37.2	44.2	4660	1.7	1.0	1.0	170	205	30.2

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: SETEMBRO/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	–
01/09/2026	5.33	2.11	3.100	3.75	16.40	28.6	34.5		4300	1.4	0.1	1.0	150	180	29.6
02/09/2026	5.07	3.25	3.050	3.77	18.40	30.7	35.0		4490	0.5	0.1	1.0	155	190	30.0
03/09/2026	4.73	2.09	2.810	3.71	18.90	30.2	36.5		4300	1.1	0.1	1.0	165	195	30.0
04/09/2026	4.84	2.17	3.250	3.98	20.80	32.3	37.2		4240	1.0	0.1	1.0	155	190	29.8
05/09/2026	4.84	2.17	3.250	3.98	20.80	32.3	37.2		4240	1.0	0.1	1.0	155	190	29.8
08/09/2026	4.47	2.49	3.200	3.54	21.90	32.9	37.7		4250	1.1	0.1	1.0	145	170	29.6
09/09/2026	4.64	2.66	3.080	3.37	21.40	31.8	36.0		4120	1.2	0.1	1.0	140	170	29.8
10/09/2026	4.38	2.58	3.120	3.23	21.20	33.1	38.4		4590	1.0	0.1	1.0	140	180	29.8
11/09/2026	4.65	2.77	3.110	3.39	21.60	32.7	37.6		4450	1.0	0.1	1.0	155	180	30.0
12/09/2026	4.65	2.77	3.110	3.39	21.60	32.7	37.6		4450	1.0	0.1	1.0	155	180	30.0
14/09/2026	4.86	3.05	3.140	3.62	20.40	30.3	36.7		4350	1.2	0.1	1.0	145	175	30.0
15/09/2026	4.46	2.75	3.000	3.59	21.70	33.0	37.6		4590	1.3	0.1	1.0	140	165	30.2
16/09/2026	4.92	3.50	3.100	3.60	20.70	33.4	38.8		4070	1.7	0.1	1.0	160	190	29.6
17/09/2026	5.42	3.23	2.850	3.29	19.40	29.6	34.8		4240	1.5	0.1	1.0	155	190	29.6
18/09/2026	5.46	3.54	3.080	3.47	17.70	30.7	34.8		4210	1.3	0.1	1.0	160	200	28.8
19/09/2026	5.46	3.54	3.080	3.47	17.70	30.7	34.8		4210	1.3	0.1	1.0	160	200	28.8
21/09/2026	4.93	2.98	3.340	3.49	19.30	31.0			4310	1.4	0.1	1.0	150	180	29.8
22/09/2026	5.19	3.44	3.100	3.55	18.40	30.4			4250	1.3	0.1	1.0	165	195	30.0
23/09/2026	5.17	3.49	3.440	3.37	18.70	29.1			4130	1.5	0.1	1.0	160	190	30.0
24/09/2026	5.23	4.18	3.310	3.39	17.30	27.9			4220	1.6	0.1	1.0	155	190	30.2
MÉDIA	4.94	2.94	3.130	3.55	19.72	31.2	36.6		4301	1.2	0.1	1.0	153	185	29.8
DESVIO PADRÃO	0.34	0.58	0.150	0.21	1.70	1.6	1.4		146	0.3	0.0	0.0	8	10	0.4
MÍNIMO	4.38	2.09	2.810	3.23	16.40	27.9	34.5		4070	0.5	0.1	1.0	140	165	28.8
MÁXIMO	5.46	4.18	3.440	3.98	21.90	33.4	38.8		4590	1.7	0.1	1.0	165	200	30.2


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