

CERTIFICADO DE CONTROLE DA QUALIDADE DO CIMENTO



TIPO/CLASSE: CII-Z 40



FÁBRICA: FMN - FÁBRICA DE MANAUS - AM

MÊS/ANO: ABRIL/2026

FL-AGLO-LAB-002_R03

ENSAIOS QUÍMICOS				ENSAIOS FÍSICOS E MECÂNICOS									
ENSAIOS	PERDA AO	RESIDUO	TRIÓXIDO DE	RESISTÊNCIA À COMPRESSÃO			FINURA			EXPANSIB. A QUENTE	TEMPO DE PEGA		CONSIST. NORMAL
	FOGO (PF)	INSOLÚVEL (RI)	ENXOFRE (SO ₃)	3 DIAS	7 DIAS	28 DIAS	BLAINE	#325	#200		INÍCIO	FIM	
UNIDADE	(%)	(%)	(%)	(MPa)	(MPa)	(MPa)	(cm ² /g)	(%)	(%)	(mm)	(min)	(min)	(%)
LIMITE NORMATIVO (ABNT NBR 16697:2018)	≤ 8,5	≤ 18,5	≤ 4,5	≥ 15,0	≥ 25,0	≥ 40,0	-	-	≤ 10,0	≤ 5	≥ 60	≤ 600	-
01/04/2026	1.84	11.91	2.63	25.7	33.4		5300	1.8	0.1	0.0	135	225	31.8
04/04/2026	1.91	10.84	2.54	25.3	33.3		5400	2.3	0.1	0.0	130	230	31.0
06/04/2026	1.84	10.67	2.73	24.9	32.7		5470	2.1	0.2	0.0	135	235	31.4
07/04/2026	1.65	10.75	2.52	24.8	33.7		5170	2.3	0.1	0.0	130	205	29.0
08/04/2026	1.84	11.11	2.24	25.0	34.0		5430	2.4	0.2	0.0	135	215	29.1
09/04/2026	1.59	10.13	2.58	25.2	33.7		5640	2.1	0.3	0.0	120	210	29.2
10/04/2026	1.90	13.50	2.37	25.1	34.0		5520	2.3	0.3	0.0	130	240	29.2
11/04/2026	1.98	12.78	2.42	24.8	33.7		5560	2.3	0.2	0.0	125	220	29.6
13/04/2026	2.02	13.19	2.49	24.5	32.9		5170	2.5	0.2	0.0	120	215	0.0
14/04/2026	1.50	10.91	2.23	24.3	33.0		4840	1.8	0.2	0.0	130	220	29.8
15/04/2026	1.88	12.53	2.43	24.1	33.4		5100	1.9	0.2	0.0	120	225	29.4
16/04/2026	1.89	11.86	2.21	24.0	33.3		5040	1.6	0.1	0.0	130	240	29.6
17/04/2026	2.29	10.30	2.58	24.3	33.7		5240	1.6	0.2	0.0	140	230	29.3
18/04/2026	1.90	10.48	2.53	24.5	33.1		5100	1.8	0.2	0.0	130	240	29.6
20/04/2026	1.56	10.72	2.47	24.8	33.4		4980	2.0	0.2	0.0	155	255	30.7
22/04/2026	1.76	10.49	1.96	25.0			4810	1.4	0.2	0.0	160	245	30.9
23/04/2026	1.70	11.06	2.16	24.4			4980	1.5	0.2	0.0	155	255	30.7
24/04/2026	1.76	10.57	1.73	24.8			4630	2.2	0.3	0.0	145	250	30.8
25/04/2026	1.73	10.82	1.90	24.4			4630	2.2	0.3	0.0	150	250	30.9
MÉDIA	1.80	11.30	2.40	24.7	33.4		5158	2.0	0.2	0.0	136	232	28.5
DESVIO PADRÃO	0.20	1.00	0.30	0.4	0.4		302	0.3	0.1	0.0	12	15	7.0
MÍNIMO	1.50	10.13	1.73	24.0	32.7		4630	1.4	0.1	0.0	120	205	0.0
MÁXIMO	2.29	13.50	2.73	25.7	34.0		5640	2.5	0.3	0.0	160	255	31.8

Responsável Técnico
GABRIELE OLIVEIRA DA SILVA
CRQ 14200571 - XIV Região

CERTIFICADO DE CONTROLE DA QUALIDADE DO CIMENTO



TIPO/CLASSE: **CPII-Z 40**



FÁBRICA: **FMN - FÁBRICA DE MANAUS - AM**

MÊS/ANO: **MARÇO/2026**

FL-AGLO-LAB-002_R03

ENSAIOS QUÍMICOS				ENSAIOS FÍSICOS E MECÂNICOS									
ENSAIOS	PERDA AO	RESIDUO	TRIÓXIDO DE	RESISTÊNCIA À COMPRESSÃO			FINURA			EXPANSIB. A QUENTE	TEMPO DE PEGA		CONSIST. NORMAL
	FOGO (PF)	INSOLÚVEL (RI)	ENXOFRE (SO3)	3 DIAS	7 DIAS	28 DIAS	BLAINE	#325	#200		INÍCIO	FIM	
UNIDADE	(%)	(%)	(%)	(MPa)	(MPa)	(MPa)	(cm²/g)	(%)	(%)	(mm)	(min)	(min)	(%)
LIMITE NORMATIVO (ABNT NBR 16697:2018)	≤ 8,5	≤ 18,5	≤ 4,5	≥ 15,0	≥ 25,0	≥ 40,0	-	-	≤ 10,0	≤ 5	≥ 60	≤ 600	-
02/03/2026	1.82	14.37	3.44	24.7	31.9	43.0	5110	1.9	0.2	0.0	135	230	30.3
03/03/2026	1.68	14.04	2.27	24.4	31.0	42.7	5330	2.6	0.2	0.0	140	225	30.8
04/03/2026	1.21	12.77	2.80	24.0	31.2	42.0	5460	2.9	0.2	0.0	145	230	30.4
05/03/2026	2.20	14.71	2.82	24.7	31.8	42.7	5210	3.4	0.2	0.0	140	235	30.8
06/03/2026	2.20	14.45	2.30	23.4	31.5	42.5	5080	4.2	0.4	0.0	140	230	29.3
07/03/2026	2.27	13.52	2.32	22.4	31.5	42.9	5140	3.8	0.3	0.0	130	240	29.6
09/03/2026	2.35	12.60	2.54	22.8	30.6	41.9	5170	3.9	0.3	0.0	135	230	29.3
10/03/2026	2.29	13.71	2.62	22.5	30.9	41.1	5580	3.4	0.3	0.0	130	230	29.5
11/03/2026	2.37	10.06	2.40	22.2	30.8	41.5	5700	3.6	0.3	0.0	135	235	29.2
12/03/2026	2.44	13.28	2.75	22.6	31.6	42.0	5730	3.4	0.3	0.0	125	225	29.0
13/03/2026	2.38	13.54	2.68	23.1	32.0	42.8	5400	3.8	0.4	0.0	130	230	29.6
14/03/2026	2.41	13.38	2.71	22.9	31.3	41.8	5560	3.6	0.3	0.0	135	235	28.5
16/03/2026	2.00	13.63	2.74	23.0	32.4	42.9	5460	3.8	0.4	0.0	140	230	28.7
17/03/2026	1.80	12.89	2.89	23.2	32.2	43.0	5400	3.9	0.4	0.0	145	235	29.6
18/03/2026	1.85	12.74	2.91	23.7	31.9	42.6	5170	3.7	0.3	0.0	135	230	29.5
19/03/2026	1.90	12.88	3.05	24.3	32.3	42.8	5360	3.8	0.2	0.0	140	240	30.0
20/03/2026	1.83	7.82	3.08	24.1	32.0	42.8	4940	2.0	0.2	0.0	145	230	30.1
21/03/2026	1.46	11.92	3.15	23.8	32.9	43.0	5010	1.9	0.2	0.0	120	225	29.4
23/03/2026	1.96	11.99	2.92	23.8	33.8	42.7	5330	2.9	0.3	0.0	130	240	29.6
24/03/2026	1.70	10.01	3.24	24.3	32.6	43.0	5300	3.5	0.3	0.0	140	230	29.3
25/03/2026	1.91	11.48	2.90	24.1	32.4	42.5	5360	3.3	0.3	0.0	130	240	29.6
26/03/2026	1.98	11.78	2.61	24.0	33.1	42.7	5080	2.4	0.2	0.0	145	145	235.0
27/03/2026	1.92	12.07	2.61	24.8	33.3	42.9	5315	20.2	0.3	0.0	150	230	30.9
28/03/2026	1.89	11.98	2.72	24.3	33.8	43.2	5240	2.2	0.3	0.0	145	235	31.4
30/03/2026	1.99	11.36	2.89	24.9	33.6		5170	2.1	0.2	0.0	140	225	30.8
31/03/2026	2.10	11.78	3.00	25.1	33.7		5170	2.1	0.1	0.0	130	220	31.6
MÉDIA	2.00	12.50	2.80	23.7	32.2	42.5	5299	3.8	0.3	0.0	137	228	37.8
DESVIO PADRÃO	0.30	1.50	0.30	0.8	1.0	0.5	202	3.4	0.1	0.0	7	18	40.2
MÍNIMO	1.21	7.82	2.27	22.2	30.6	41.1	4940	1.9	0.1	0.0	120	145	28.5
MÁXIMO	2.44	14.71	3.44	25.1	33.8	43.2	5730	20.2	0.4	0.0	150	240	235.0

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