



# CERTIFICADO DE CONTROLE DA QUALIDADE DO CIMENTO

TIPO/CLASSE:

CPV-ARI RS

FÁBRICA:

FBA - FÁBRICA DE BARAUNAS - RN

MÊS/ANO:

MARÇO/2026



FL-AGLO-LAB-002\_R03

ENSAIOS QUÍMICOS					ENSAIOS FÍSICOS E MECÂNICOS										
ENSAIO	PERDA AO FOGO (PF)	RESÍDUO INSOLÚVEL (RI)	ÓXIDO DE MAGNÉSIO (MgO)	TRIÓXIDO DE ENXOFRE (SO3)	RESISTÊNCIA A COMPRESSÃO				FINURA			EXPANSIB. A QUENTE	TEMPO DE PEGA		CONSIST. NORMAL
					1 DIA	3 DIAS	7 DIAS	28 DIAS	BLAINE	#325	#200		INICIO	FIM	
UNIDADE	(%)	(%)	(%)	(%)	(MPa)	(MPa)	(MPa)	(MPa)	(cm <sup>2</sup> /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	-
01/03/2026	4,54	1,22	3,21	4,06	18,0	29,0	38,8	47,5	4325	1,9	0,1	1,0	150	180	28,0
02/03/2026	5,97	1,25	3,33	3,95	19,0	29,0	38,4	47,5	4555	2,0	0,1	1,0	150	180	28,0
03/03/2026	5,71	1,25	3,26	3,92	19,0	29,0	38,4	47,5	4540	2,0	0,1	1,0	150	180	28,0
04/03/2026	5,80	1,25	3,24	3,66	19,5	29,0	38,0	47,0	4530	1,9	0,1	1,0	150	180	28,0
05/03/2026	6,11	1,33	3,27	3,68	19,5	28,5	37,0	47,0	4510	2,1	0,1	1,0	150	180	28,0
06/03/2026	5,93	1,35	2,26	4,03	18,0	28,5	37,0	47,0	4555	2,0	0,1	1,0	150	180	28,0
07/03/2026	5,73	1,35	3,32	3,88	18,0	28,5	37,0	47,0	4530	2,0	0,1	1,0	150	180	28,0
08/03/2026	5,66	1,35	3,27	3,84	18,0	28,3	37,0	47,0	4550	2,0	0,1	1,0	150	180	28,0
09/03/2026	5,27	1,40	3,24	4,01	18,5	28,3	38,0	48,0	4580	1,9	0,1	1,0	150	180	28,0
10/03/2026	5,27	1,40	3,33	4,10	18,5	28,0	38,0	48,0	4555	1,9	0,1	1,0	150	180	28,0
11/03/2026	5,86	1,35	3,23	3,79	19,0	28,0	37,7	48,0	4590	2,0	0,1	1,0	150	180	28,0
12/03/2026	4,57	1,35	3,26	3,81	19,0	28,0	38,0	48,0	4560	1,5	0,1	1,0	150	180	28,0
13/03/2026	6,19	1,30	3,26	3,87	18,0	27,5	37,0	47,0	4590	2,1	0,1	1,0	150	180	28,0
14/03/2026	6,00	1,26	3,27	3,75	18,0	27,5	37,0	47,0	4580	2,3	0,1	1,0	150	180	28,0
15/03/2026	6,36	1,28	3,30	4,00	18,0	27,5	37,0	47,0	4650	2,4	0,1	1,0	150	180	28,0
16/03/2026	5,72	1,30	3,23	3,89	19,1	28,5	37,0	47,0	4590	2,3	0,1	1,0	150	180	28,0
17/03/2026	5,57	1,30	3,25	3,97	19,1	28,5	37,0	46,0	4555	2,2	0,1	1,0	150	180	28,0
18/03/2026	5,98	1,30	3,26	3,78	19,1	28,5	37,5	46,0	4470	2,4	0,1	1,0	150	180	28,0
19/03/2026	6,29	1,30	3,26	3,52	19,1	28,0	37,5	49,0	4760	2,2	0,1	1,0	150	180	28,0
20/03/2026	6,25	1,30	3,25	3,72	18,5	28,0	38,0	49,0	4520	2,4	0,1	1,0	150	180	28,0
21/03/2026	6,12	1,20	3,25	3,76	18,5	28,0	38,0	49,0	4620	2,5	0,1	1,0	150	180	28,0
22/03/2026	6,50	1,20	3,24	3,80	18,5	28,5	37,5	49,0	4640	2,3	0,1	1,0	150	180	28,0
23/03/2026	6,05	1,10	3,85	3,25	18,5	28,0	37,5	49,0	4480	2,5	0,1	1,0	150	180	28,0
24/03/2026	6,36	1,10	3,77	3,40	19,0	28,5	37,5	48,0	4615	2,7	0,1	1,0	150	180	28,0
25/03/2026	6,38	1,15	3,67	3,15	19,0	28,5	37,5	48,0	4640	2,2	0,1	1,0	150	180	28,0
26/03/2026	6,34	1,15	3,93	3,30	19,4	28,0	37,5	49,0	4590	2,3	0,1	1,0	150	180	28,0
27/03/2026	6,14	1,10	3,66	3,35	17,8	27,0	37,0	47,5	4420	2,4	0,1	1,0	150	180	28,0
28/03/2026	6,31	1,07	3,58	3,30	17,8	27,0	37,0	47,5	4480	2,4	0,1	1,0	150	180	28,0
29/03/2026	6,50	1,05	3,91	3,27	17,8	27,0	37,0	47,0	4625	2,4	0,1	1,0	150	180	28,0
30/03/2026	5,90	1,10	3,86	3,25	17,8	27,0	37,0	47,0	4530	2,4	0,1	1,0	150	180	28,0
31/03/2026	6,22	1,10	3,67	3,25	17,8	27,0	37,0	47,0	4620	2,4	0,1	1,0	150	180	28,0
MÉDIA	5,92	1,24	3,38	3,69	18,5	28,1	37,5	47,6	4560	2,2	0,1	1,0	150	180	28,0
DESVIO PADRÃO	0,49	0,10	0,32	0,29	0,57	0,63	0,53	0,86	78,08	0,25	0,00	0,00	0,00	0,00	0,00
MÍNIMO	4,54	1,05	2,26	3,15	17,8	27,0	37,0	46,0	4325	1,5	0,1	1,0	150	180	28,0
MÁXIMO	6,50	1,40	3,93	4,10	19,5	29,0	38,8	49,0	4760	2,7	0,1	1,0	150	180	28,0

Responsável Técnico  
YURI GALILLEU SILVA COSTA  
CRQ: 153000720 - XV Região



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MÊS/ANO:

ABRIL/2026



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ENSAIOS QUÍMICOS					ENSAIOS FÍSICOS E MECÂNICOS										
ENSAIO	PERDA AO FOGO (PF)	RESÍDUO INSOLÚVEL (RI)	ÓXIDO DE MAGNÉSIO (MgO)	TRIÓXIDO DE ENXOFRE (SO3)	RESISTÊNCIA A COMPRESSÃO				FINURA			EXPANSIB. A QUENTE	TEMPO DE PEGA		CONSIST. NORMAL
					1 DIA	3 DIAS	7 DIAS	28 DIAS	BLAINE	#325	#200		INÍCIO	FIM	
UNIDADE	(%)	(%)	(%)	(%)	(MPa)	(MPa)	(MPa)	(MPa)	(cm <sup>2</sup> /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	6,23	1,37	3,25	3,51	17,5	28,0	37,0	47,0	4540	2,5	0,1	1,0	150	180	28,0
02/04/2026	6,16	1,30	3,25	3,71	18,0	30,0	40,0	49,0	4495	2,6	0,1	1,0	150	180	28,0
03/04/2026	6,00	1,33	3,25	3,64	18,0	30,0	40,0	49,0	4675	1,9	0,1	1,0	150	180	28,0
04/04/2026	6,10	1,28	3,33	3,50	18,0	30,0	38,0	48,0	4600	1,8	0,1	1,0	150	180	28,0
05/04/2026	6,20	1,30	3,12	3,44	18,0	30,0	38,0	48,0	4580	1,9	0,1	1,0	150	180	28,0
06/04/2026	6,49	1,38	3,22	3,69	18,0	30,0	38,0	47,0	4520	1,6	0,1	1,0	150	180	28,0
07/04/2026	6,02	1,33	3,81	3,81	19,0	30,0	38,0	47,0	4600	2,0	0,1	1,0	150	180	28,0
08/04/2026	6,27	1,36	3,17	3,76	19,0	30,0	38,0	47,0	4560	2,5	0,1	1,0	150	180	28,0
09/04/2026	6,39	1,35	3,14	3,78	19,0	30,0	38,0	47,0	4587	2,3	0,1	1,0	150	180	28,0
10/04/2026	6,25	1,00	3,16	3,82	19,4	31,0	39,0		4580	2,5	0,1	1,0	150	180	28,0
11/04/2026	6,30	0,90	3,12	3,75	19,4	31,0	39,0		4590	2,5	0,1	1,0	150	180	28,0
12/04/2026	6,17	0,95	3,19	3,69	19,4	31,0	39,0		4560	2,5	0,1	1,0	150	180	28,0
13/04/2026	6,50	1,00	3,77	3,24	19,4	31,0	39,0		4685	2,0	0,1	1,0	160	190	25,6
14/04/2026	6,26	1,10	3,87	3,24	18,0	30,0	37,0		4368	2,5	0,1	1,0	160	190	25,6
15/04/2026	6,04	0,90	3,92	3,23	18,0	30,0	37,0		4435	2,4	0,1	1,0	160	190	25,6
16/04/2026	6,28	1,12	3,98	3,19	18,0	30,0	37,0		4512	2,6	0,1	1,0	160	190	25,6
17/04/2026	6,50	1,10	3,95	3,20	18,0	29,0	38,0		4460	2,5	0,1	1,0	160	190	25,6
18/04/2026	6,50	1,14	3,85	3,18	18,0	29,0	38,5		4600	2,5	0,1	1,0	160	190	25,6
19/04/2026	6,50	1,16	3,99	3,24	18,0	29,0	38,5		4550	2,5	0,1	1,0	160	190	25,6
20/04/2026	6,37	1,14	3,89	3,22	18,0	29,0	38,0		4500	2,4	0,1	1,0	160	190	25,6
21/04/2026	6,50	1,14	3,88	3,21	18,2	29,0	37,5		4510	2,3	0,1	1,0	160	190	25,6
22/04/2026	6,17	1,16	3,85	3,23	17,0	29,0	37,5		4347	2,5	0,1	1,0	160	190	25,6
23/04/2026	6,35	1,12	3,86	3,23	17,0	28,5	37,5		4490	2,5	0,1	1,0	160	190	25,6
24/04/2026	6,40	0,95	3,78	3,22	17,0	29,0	37,0		4510	2,4	0,1	1,0	160	190	25,6
25/04/2026	6,50	1,00	3,97	3,18	17,5	28,5	37,0		4528	2,5	0,1	1,0	160	190	25,6
26/04/2026	6,42	0,98	4,02	3,16	17,5	29,0	37,0		4460	2,5	0,1	1,0	160	190	25,6
27/04/2026	6,50	0,95	4,02	3,16	18,0	30,0	37,0		4512	2,5	0,1	1,0	160	190	25,6
28/04/2026	6,15	1,15	4,08	3,18	18,0	30,0	39,0		4600	2,3	0,1	1,0	160	190	25,6
29/04/2026	6,50	1,20	3,95	3,18	18,5	30,0	39,0		4602	2,4	0,1	1,0	160	190	25,6
30/04/2026	6,34	1,15	4,11	3,17	18,5	30,0	39,0		4772	2,3	0,1	1,0	160	190	25,6
<b>MÉDIA</b>	<b>6,31</b>	<b>1,14</b>	<b>3,66</b>	<b>3,39</b>	<b>18,2</b>	<b>29,7</b>	<b>38,1</b>	<b>47,7</b>	<b>4544</b>	<b>2,3</b>	<b>0,1</b>	<b>1,0</b>	<b>156</b>	<b>186</b>	<b>26,6</b>
<b>DESVIO PADRÃO</b>	<b>0,16</b>	<b>0,15</b>	<b>0,36</b>	<b>0,25</b>	<b>0,70</b>	<b>0,78</b>	<b>0,91</b>	<b>0,87</b>	<b>87,15</b>	<b>0,26</b>	<b>0,00</b>	<b>0,00</b>	<b>4,98</b>	<b>4,98</b>	<b>1,20</b>
<b>MÍNIMO</b>	<b>6,00</b>	<b>0,90</b>	<b>3,12</b>	<b>3,16</b>	<b>17,0</b>	<b>28,0</b>	<b>37,0</b>	<b>47,0</b>	<b>4347</b>	<b>1,6</b>	<b>0,1</b>	<b>1,0</b>	<b>150</b>	<b>180</b>	<b>25,6</b>
<b>MÁXIMO</b>	<b>6,50</b>	<b>1,38</b>	<b>4,11</b>	<b>3,82</b>	<b>19,4</b>	<b>31,0</b>	<b>40,0</b>	<b>49,0</b>	<b>4772</b>	<b>2,6</b>	<b>0,1</b>	<b>1,0</b>	<b>160</b>	<b>190</b>	<b>28,0</b>

**Responsável Técnico**  
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ENSAIOS QUÍMICOS					ENSAIOS FÍSICOS E MECÂNICOS										
ENSAIO	PERDA AO FOGO (PF)	RESÍDUO INSOLÚVEL (RI)	ÓXIDO DE MAGNÉSIO (MgO)	TRIÓXIDO DE ENXOFRE (SO3)	RESISTÊNCIA A COMPRESSÃO				FINURA			EXPANSIB. A QUENTE	TEMPO DE PEGA		CONSIST. NORMAL
					1 DIA	3 DIAS	7 DIAS	28 DIAS	BLAINE	#325	#200		INICIO	FIM	
UNIDADE	(%)	(%)	(%)	(%)	(MPa)	(MPa)	(MPa)	(MPa)	(cm <sup>2</sup> /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	-
01/05/2026	6,50	1,15	3,17	4,10	18,0	29,0	37,0		4717	2,4	0,1	1,0	160	190	25,6
02/05/2026	6,50	1,22	3,16	4,14	18,0	29,0	37,0		4578	2,6	0,1	1,0	160	190	25,6
03/05/2026	6,50	1,20	3,15	3,96	18,0	29,0	37,0		4557	2,5	0,1	1,0	160	190	25,6
04/05/2026	6,19	1,17	3,19	4,09	17,0	29,0			4600	2,6	0,1	1,0	160	190	25,6
05/05/2026	6,20	1,15	3,15	4,05	18,0	29,0			4580	2,4	0,1	1,0	160	190	25,6
06/05/2026	6,16	1,24	3,16	4,03	18,0	29,0			4495	2,5	0,1	1,0	160	190	25,6
07/05/2026	6,40	1,26	3,18	4,13	18,0				4524	2,5	0,1	1,0	160	190	25,6
08/05/2026	6,04	1,17	3,23	4,13	18,0				4507	2,4	0,1	1,0	160	190	25,6
09/05/2026	6,22		3,17	3,89					4573	2,5	0,1	1,0	160	190	25,6
10/05/2026	6,02		3,22	3,87					4545	2,5	0,1	1,0	160	190	25,6
11/05/2026	6,07		3,26	3,67					4478	2,5	0,1	1,0	160	190	25,6
12/05/2026															
13/05/2026															
14/05/2026															
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28/05/2026															
29/05/2026															
30/05/2026															
31/05/2026															
<b>MÉDIA</b>	<b>6,25</b>	<b>1,20</b>	<b>3,19</b>	<b>4,01</b>	<b>17,9</b>	<b>29,0</b>	<b>37,0</b>	<b>#DIV/0!</b>	<b>4559</b>	<b>2,5</b>	<b>0,1</b>	<b>1,0</b>	<b>160</b>	<b>190</b>	<b>25,6</b>
<b>DESVIO PADRÃO</b>	<b>0,19</b>	<b>0,04</b>	<b>0,04</b>	<b>0,15</b>	<b>0,35</b>	<b>0,00</b>	<b>0,00</b>	<b>#DIV/0!</b>	<b>65,14</b>	<b>0,07</b>	<b>0,01</b>	<b>0,00</b>	<b>0,00</b>	<b>0,00</b>	<b>0,00</b>
<b>MÍNIMO</b>	<b>6,02</b>	<b>1,15</b>	<b>3,15</b>	<b>3,67</b>	<b>17,0</b>	<b>29,0</b>	<b>37,0</b>	<b>0,0</b>	<b>4478</b>	<b>2,4</b>	<b>0,1</b>	<b>1,0</b>	<b>160</b>	<b>190</b>	<b>25,6</b>
<b>MÁXIMO</b>	<b>6,50</b>	<b>1,26</b>	<b>3,26</b>	<b>4,14</b>	<b>18,0</b>	<b>29,0</b>	<b>37,0</b>	<b>0,0</b>	<b>4717</b>	<b>2,6</b>	<b>0,1</b>	<b>1,0</b>	<b>160</b>	<b>190</b>	<b>25,6</b>

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