

**CERTIFICADO DA QUALIDADE - FMN**

**ENSAIOS QUÍMICOS E FÍSICOS DO CIMENTO CP IV 32**

**Outubro-2024**

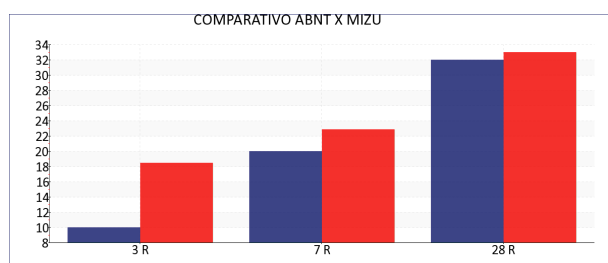
DATA	COMPOSIÇÃO QUÍMICA				RESISTÊNCIA A COMPRESSÃO			MASSA	FINURA			EXP.	PEGA		CONSIST.	
	Parâmetros	PF	RI	SO3	CaO L.	3 DIAS	7 DIAS	28 DIA	ESPEC.	BLAINE	#325	#200	QUENTE	INICIO	FIM	NORMAL
	Unidades	%	%	%	%	MPa	MPa	MPa	g/cm³	cm²/g	%	%	mm	min	min	%
01/10/2024	1.72	17.37	3.34	1.31	18.50	21.60	33.20	3.10	4690.00	3.80	0.16	0.00	135.00	230.00	32.70	
02/10/2024	1.36	17.86	2.96	1.43	17.80	22.00	32.20	3.10	4855.00	3.50	0.25	0.00	140.00	235.00	32.30	
03/10/2024	1.80	18.05	2.90	1.45	17.60	21.90	32.00	2.95	4822.00	3.60	0.21	0.00	130.00	230.00	32.60	
04/10/2024	1.75	17.69	2.68	1.36	17.00	22.10	32.50	2.95	4785.00	3.80	0.35	0.00	135.00	225.00	32.90	
05/10/2024	1.90	18.05	2.76	1.38	17.60	21.80	32.20	2.95	4822.00	3.30	0.22	0.00	130.00	230.00	32.10	
07/10/2024	1.85	17.80	2.86	1.41	18.80	22.50	32.00	2.95	4756.00	3.50	0.25	0.00	140.00	240.00	32.70	
08/10/2024	1.52	17.68	2.88	1.34	18.30	23.50	32.80	2.95	4910.00	3.70	0.19	0.00	135.00	245.00	32.60	
09/10/2024	1.60	17.10	2.70	1.45	19.00	24.50	34.00	2.95	4803.00	3.40	0.20	0.00	130.00	230.00	32.30	
10/10/2024	1.46	17.65	2.76	1.45	18.70	23.80	33.10	2.95	4922.00	3.10	0.22	0.00	135.00	240.00	32.50	
11/10/2024	1.63	19.73	2.69	1.44	18.60	22.60	34.40	2.95	4825.00	3.25	0.24	0.00	135.00	240.00	32.20	
14/10/2024	1.79	21.90	2.61	0.81	18.70	21.80	35.00	2.95	4812.00	3.70	0.18	0.00	140.00	210.00	31.50	
15/10/2024	1.23	19.50	2.64	0.87	17.90	21.90		2.95	5001.00	3.90	0.20	0.00	120.00	210.00	30.90	
16/10/2024	1.79	11.43	3.89	1.40	18.60	22.20		2.95	4873.00	3.60	0.19	0.00	130.00	205.00	31.00	
17/10/2024	2.05	16.35	3.28	1.32	18.00	22.50		2.95	5096.00	3.50	0.22	0.00	135.00	200.00	30.90	
18/10/2024	2.31	21.26	2.67	1.32	18.20	22.00		2.95	5100.00	3.55	0.25	0.00	130.00	210.00	30.80	
19/10/2024	2.60	15.75	3.06	1.23	19.00	22.60		2.95	5010.00	3.60	0.26	0.00	140.00	235.00	32.30	
21/10/2024	1.65	16.28	2.39	1.14	18.20	22.50		2.95	5110.00	4.20	0.20	0.00	130.00	230.00	32.60	
22/10/2024	2.45	20.14	2.53	1.87	16.50	22.00		2.95	5196.00	4.00	0.25	0.00	135.00	240.00	31.50	
23/10/2024	2.11	16.95	2.47	1.60	18.90	23.90		2.95	5220.00	4.40	0.26	0.00	140.00	245.00	30.90	
24/10/2024	1.75	13.73	2.75	48.96	19.00	22.60		2.95	5125.00	4.00	0.28	0.00	145.00	230.00	31.70	
25/10/2024	2.07	11.43	3.46	1.40	20.40	26.40		2.95	5001.00	3.80	0.20	0.00	125.00	235.00	31.50	
26/10/2024	2.10	12.85	2.96	1.42	19.20	24.00		2.95	5258.00	3.90	0.22	0.00	130.00	230.00	31.30	
28/10/2024	2.33	9.72	3.03	1.56	18.60	22.90		2.95	5114.00	4.00	0.21	0.00	140.00	240.00	32.70	
29/10/2024	2.33	9.72	3.03	1.56	19.60	24.60		2.95	5190.00	4.20	0.29	0.00	135.00	245.00	32.60	
30/10/2024	1.20	23.81	3.48	1.22	19.90	23.80		2.95	5112.00	3.80	0.30	0.00	130.00	230.00	32.30	
31/10/2024	1.20	1.16	3.13	1.26	19.60			2.95	4996.00	3.50	0.32	0.00	125.00	215.00	30.80	

**Controle Estatístico**

	R3	R7	R28													
Média	1.80	16.20	2.90	3.20	18.50	22.90	33.00	3.00	4977.10	3.70	0.20	0.00	133.70	229.00	31.90	
Desvio (P)	0.40	4.70	0.30	9.30	0.90	1.20	1.00	0.00	163.70	0.30	0.00	0.00	5.80	13.00	0.70	
NBR 16697:2018	<8,5	ND	<4,5	-	>10,0	>20,0	>32,0	-	>3000	-	<8,0	<5,0	>60	-	-	

**Comparativo ABNT x MIZU**

	ABNT	MIZU
R3	10	18.50
R7	20	22.90
R28	32	33.00



• ABNT • MIZU

**Responsável Técnico**  
**Gabriele Oliveira da Silva**  
**CRQ 14200571 - XIV Região**

**CERTIFICADO DA QUALIDADE - FMN**

**ENSAIOS QUÍMICOS E FÍSICOS DO CIMENTO CP IV 32**

**Novembro-2024**

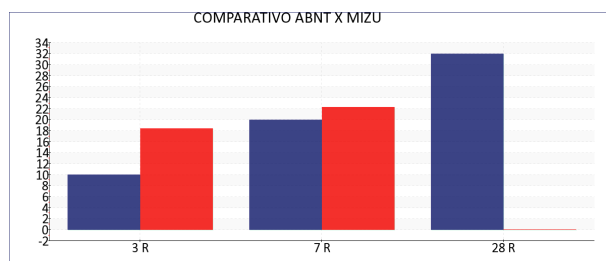
DATA	COMPOSIÇÃO QUÍMICA				RESISTÊNCIA A COMPRESSÃO			MASSA	FINURA			EXP.	PEGA		CONSIST.	
	Parâmetros	PF	RI	SO3	CaO L.	3 DIAS	7 DIAS	28 DIA	ESPEC.	BLAINE	#325	#200	QUENTE	INICIO	FIM	NORMAL
	Unidades	%	%	%	%	MPa	MPa	MPa	g/cm³	cm²/g	%	%	mm	min	min	%
01/11/2024	2.18	21.39	2.74	1.76	18.00	21.00		2.95	5122.00	3.10	0.20	0.00	145.00	240.00	29.90	
04/11/2024	2.08	15.32	2.90	1.26	17.90	21.80		2.95	4815.00	3.90	0.21	0.00	150.00	235.00	29.00	
05/11/2024	2.39	22.19	2.80	1.68	17.80	22.00		2.95	4930.00	3.50	0.22	0.00	135.00	245.00	29.00	
06/11/2024	2.21	23.90	2.90	1.03	18.30	22.90		2.95	5090.00	9.80	18.30	0.00	155.00	240.00	29.60	
07/11/2024	2.44	15.63	2.41	1.30	17.30	23.80		2.95	4850.00	3.70	0.22	0.00	145.00	250.00	29.70	
08/11/2024	2.56	24.10	2.74	1.20	20.20	22.20		2.95	5022.00	3.10	0.18	0.00	135.00	230.00	29.50	
09/11/2024	2.20	20.12	2.69	1.22	18.90			2.95	4878.00	3.50	0.20	0.00	130.00	235.00	29.00	
11/11/2024	2.15	18.96	2.70	1.25	18.30			2.95	4865.00	3.60	0.21	0.00	130.00	215.00	31.50	
12/11/2024	1.83	19.32	2.62	1.20	20.30			2.95	4815.00	3.80	0.25	0.00	125.00	210.00	30.90	
13/11/2024	2.12	19.31	2.49	1.62	17.10			2.95	4669.00	3.70	0.18	0.00	135.00	195.00	30.40	
14/11/2024	2.14	17.81	2.58	1.26				2.95	4912.00	3.60	0.13	0.00	130.00	210.00	30.90	
16/11/2024	2.20	18.87	2.52	1.31				2.95	4715.00	3.90	0.15	0.00	125.00	225.00	31.00	

**Controle Estatístico**

					R3	R7	R28									
Média	2.20	19.70	2.70	1.30	18.40	22.30		3.00	4890.30	4.10	1.70	0.00	136.70	227.50	30.00	
Desvio (P)	0.20	2.80	0.20	0.20	1.10	1.00		0.00	137.00	1.80	5.20	0.00	9.80	16.70	0.90	
NBR 16697:2018	<8,5	ND	<4,5	-	>10,0	>20,0	>32,0	-	>3000	-	<8,0	<5,0	>60	-	-	

**Comparativo ABNT x MIZU**

	ABNT	MIZU
R3	10	18.40
R7	20	22.30
R28	32	



• ABNT • MIZU

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