

CERTIFICADO DA QUALIDADE - FMN

ENSAIOS QUÍMICOS E FÍSICOS DO CIMENTO CP IV 32

Setembro-2024

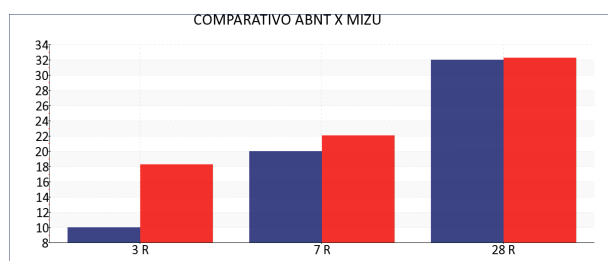
DATA	COMPOSIÇÃO QUÍMICA				RESISTÊNCIA A COMPRESSÃO			MASSA	FINURA			EXP.	PEGA		CONSIST.	
	Parâmetros	PF	RI	SO3	CaO L.	3 DIAS	7 DIAS	28 DIA	ESPEC.	BLAINE	#P325	#200	QUENTE	INICIO	FIM	NORMAL
	Unidades	%	%	%	%	MPa	MPa	MPa	g/cm³	cm²/g	%	%	mm	min	min	%
02/09/2024	2.40	24.83	2.52	1.54	19.00	23.00	32.10	2.95	4877.00	4.60	0.31	0.00	120.00	210.00	32.10	
03/09/2024	2.20	24.00	2.62	1.50	19.20	23.30	32.20	2.95	4910.00	4.40	0.29	0.00	125.00	215.00	32.70	
04/09/2024	2.22	24.20	2.70	1.31	18.90	22.60	32.60	2.95	4899.00	4.50	0.35	0.00	115.00	210.00	32.60	
05/09/2024	2.15	23.80	2.50	1.40	18.70	22.40	32.30	2.95	4970.00	4.40	0.22	0.00	120.00	215.00	32.50	
06/09/2024	2.10	23.50	2.50	1.47	18.70	22.30	32.00	2.95	4889.00	4.60	0.33	0.00	125.00	210.00	32.70	
07/09/2024	2.15	23.30	2.55	1.45	18.60	22.10	32.00	2.95	4900.00	4.30	0.29	0.00	120.00	205.00	32.80	
09/09/2024	2.26	22.54	2.61	1.45	18.00	22.60	32.20	2.95	4905.00	4.30	0.25	0.00	130.00	210.00	31.50	
10/09/2024	2.05	22.00	2.78	1.36	18.80	23.00	32.50	2.95	4824.00	5.00	0.29	0.00	125.00	200.00	31.20	
11/09/2024	2.01	21.50	2.82	2.82	18.30	22.40	32.60	2.95	5114.00	4.10	0.23	0.00	140.00	210.00	31.00	
12/09/2024	1.96	20.36	2.57	1.41	19.50	22.90	32.50	2.95	4950.00	3.80	0.20	0.00	120.00	210.00	32.10	
13/09/2024	2.06	22.68	2.50	1.36	18.60	22.60	32.40	2.95	5096.00	4.00	0.25	0.00	125.00	215.00	32.70	
14/09/2024	2.15	24.99	2.50	1.31	17.80	22.00	33.00	2.95	4996.00	3.80	0.26	0.00	120.00	205.00	32.80	
16/09/2024	2.25	23.00	2.50	1.28	17.90	21.80	32.10	2.95	4955.00	3.90	0.30	0.00	155.00	215.00	30.80	
17/09/2024	2.34	21.78	2.46	1.17	18.00	21.40	32.00	2.95	4822.00	3.50	0.25	0.00	130.00	205.00	31.20	
18/09/2024	1.85	20.27	2.62	1.12	18.30	21.60	32.00	2.95	4805.00	3.60	0.27	0.00	140.00	210.00	31.00	
19/09/2024	1.70	20.18	2.48	1.17	18.00	21.30	32.00	2.95	4900.00	3.60	0.26	0.00	130.00	215.00	31.50	
20/09/2024	2.15	14.99	3.19	1.42	17.70	21.00	32.30	2.95	4805.00	3.90	0.20	0.00	125.00	210.00	30.90	
21/09/2024	2.08	16.00	3.11	1.45	17.40	20.90	32.10	2.95	4955.00	3.20	0.19	0.00	135.00	195.00	30.40	
23/09/2024	2.02	16.20	3.00	1.50	17.60	21.90	32.00	2.95	4812.00	3.70	0.22	0.00	130.00	210.00	30.90	
24/09/2024	2.14	19.73	3.00	1.43	17.60	22.10	32.10	2.95	4912.00	3.30	0.23	0.00	125.00	225.00	31.00	
25/09/2024	2.07	22.88	3.66	1.45	17.80	21.60	32.00	2.95	4820.00	4.00	0.22	0.00	125.00	125.00	215.00	
26/09/2024	1.73	15.13	3.00	1.59	19.90	22.60	33.20	2.95	4705.00	3.10	0.20	0.00	125.00	200.00	31.20	
27/09/2024	1.61	16.53	2.56	1.40	17.60	21.10	32.50	2.95	4809.00	3.00	0.18	0.00	140.00	210.00	31.00	
28/09/2024	1.61	17.00	2.63	1.45	17.80	22.30		2.95	4822.00	3.30	0.21	0.00	120.00	210.00	30.90	
30/09/2024	1.60	17.24	2.77	1.47	17.50	22.00		2.95	4710.00	3.80	0.19	0.00	3.80	0.19	30.60	

Controle Estatístico

		R3	R7	R28												
Média	2.00	20.70	2.70	1.50	18.30	22.10	32.30	3.00	4886.50	3.90	0.20	0.00	122.80	197.80	38.90	
Desvio (P)	0.20	3.30	0.30	0.30	0.70	0.70	0.30	0.00	99.10	0.50	0.00	0.00	26.30	44.90	36.70	
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	18.30
R7	20	22.10
R28	32	32.30



• 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

Outubro-2024

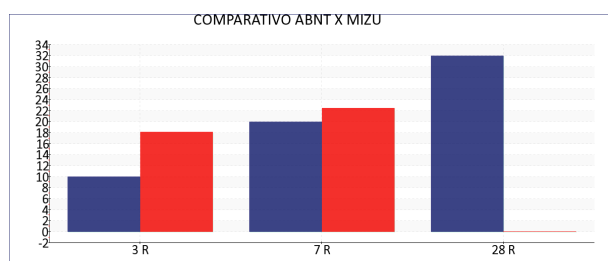
DATA	COMPOSIÇÃO QUÍMICA				RESISTÊNCIA A COMPRESSÃO			MASSA	FINURA			EXP.	PEGA		CONSIST.	
	Parâmetros	PF	RI	SO3	CaO L.	3 DIAS	7 DIAS	28 DIA	ESPEC.	BLAINE	#P325	#200	QUENTE	INICIO	FIM	NORMAL
	Unidades	%	%	%	%	MPa	MPa	MPa	g/cm³	cm²/g	%	%	mm	min	min	%
01/10/2024	1.72	17.37	3.34	1.31	18.50	21.60		3.10	4690.00	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		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		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		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		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		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		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		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		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		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		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			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			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			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				2.95	5125.00	4.00	0.28	0.00	145.00	230.00	31.70	

Controle Estatístico

	R3	R7	R28												
Média	1.80	17.60	2.80	3.70	18.20	22.50		3.00	4936.70	3.70	0.20	0.00	134.50	228.00	32.00
Desvio (P)	0.30	2.40	0.30	10.60	0.70	0.80		0.00	158.10	0.30	0.00	0.00	5.60	13.70	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	18.20
R7	20	22.50
R28	32	



• ABNT • MIZU

Responsável Técnico
Gabriele Oliveira da Silva
CRQ 14200571 - XIV Região