

CERTIFICADO DA QUALIDADE - FMN

ENSAIOS QUÍMICOS E FÍSICOS DO CIMENTO CP II Z 40

Abril-2024

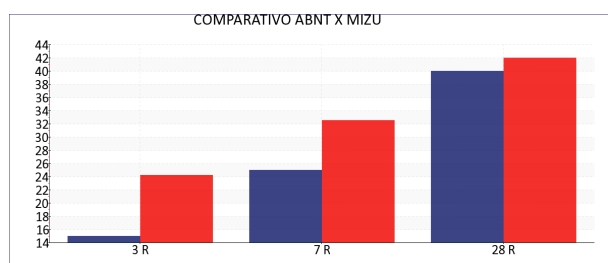
DATA	COMPOSIÇÃO QUÍMICA					RESISTÊNCIA A COMPRESSÃO			MASSA	FINURA			EXP.	PEGA		CONSIST.	
	Parâmetros	PF	RI	SO3	CO2	CaO L.	3 DIAS	7 DIA	28 DIAS	ESPEC.	BLAINE	#P325	#200	QUENTE	INICIO	FIM	NORMAL
	Unidades	%	%	%	%	%	MPa	MPa	MPa	g/cm³	cm²/g	%	%	mm	min	min	%
02/04/2024	2.24	8.96	3.26	0.00	1.59	24.40	32.60	41.60	3.10	4393.00	1.10	0.30	0.00	125.00	230.00	31.60	
03/04/2024	2.10	9.10	3.05	0.00	1.60	23.80	35.00	42.30	3.10	4581.00	1.35	0.34	0.00	135.00	225.00	31.70	
04/04/2024	2.17	8.64	3.46	0.00	1.85	23.80	32.80	41.00	3.10	4593.00	1.95	0.50	0.00	120.00	220.00	31.80	
05/04/2024	2.20	8.90	3.64	0.00	1.83	25.40	34.00	43.30	3.10	4632.00	2.00	0.54	0.00	130.00	225.00	32.20	
06/04/2024	2.43	8.43	3.70	0.00	1.71	24.30	33.00	41.90	3.10	4613.00	1.85	0.46	0.00	130.00	235.00	31.90	
08/04/2024	2.23	8.18	3.87	0.00	1.81	24.70	32.80	41.10	3.10	4960.00	1.80	0.13	0.00	130.00	225.00	32.00	
09/04/2024	2.62	8.22	3.59	0.00	1.81	23.12	33.00	42.50	3.10	4770.00	1.30	0.10	0.00	125.00	230.00	31.60	
10/04/2024	2.17	7.73	3.47	0.00	1.37	24.30	32.50		3.10	4548.00	1.50	0.14	0.00	135.00	225.00	31.70	
11/04/2024	2.20	8.89	3.45	0.00	60.25	24.00	32.80		3.10	4685.00	1.45	0.18	0.00	125.00	220.00	31.80	
16/04/2024	2.45	8.88	4.00	0.00	1.81	24.70	31.80		3.10	4627.00	1.40	0.19	0.00	130.00	225.00	32.00	
17/04/2024	2.42	11.01	4.43	0.00	1.78	24.10	32.70		3.10	4690.00	1.80	0.21	0.00	135.00	230.00	31.90	
18/04/2024	2.44	10.00	3.78	0.00	1.76	25.30	33.00		3.10	4720.00	1.90	0.23	0.00	125.00	235.00	32.30	
19/04/2024	2.35	9.27	4.11	0.00	1.74	24.60	32.80		3.10	4822.00	1.85	0.25	0.00	140.00	230.00	31.80	
20/04/2024	2.30	9.61	3.90	0.00	1.59	24.80	32.60		3.10	4771.00	1.86	0.21	0.00	135.00	240.00	31.90	
22/04/2024	2.25	9.45	3.83	0.00	1.69	24.10	32.00		3.10	4225.00	2.00	0.30	0.00	140.00	225.00	32.00	
23/04/2024	2.31	10.11	3.73	0.00	1.68	25.00	32.80		3.10	4490.00	1.90	0.28	0.00	140.00	230.00	32.10	
24/04/2024	2.70	10.83	3.91	0.00	1.69	24.50	32.60		3.10	4685.00	2.20	0.31		125.00	220.00	31.80	
25/04/2024	2.81	10.45	3.95	0.00	1.65	23.30	31.00		3.10	4796.00	1.92	0.22	0.00	130.00	225.00	32.20	
26/04/2024	2.61	9.96	4.05	0.00	1.70	23.70	33.10		3.10	4855.00	1.80	0.19	0.00	130.00	235.00	31.90	
27/04/2024	2.61	9.96	4.05	0.00	1.70	24.00	32.60		3.10	4855.00	1.80	0.19	0.00	130.00	235.00	31.90	
29/04/2024	2.54	8.81	4.27	0.00	1.72	24.30	31.30		3.10	4789.00	1.90	0.22	0.00	125.00	230.00	31.60	
30/04/2024	2.73	9.00	3.94	0.00	1.70	24.70	31.00		3.10	4911.00	1.85	0.25	0.00	130.00	230.00	31.80	

Controle Estatístico

	PF	RI	SO3	CO2	CaO L.	R3	R7	R28	ESPEC.	BLAINE	#P325	#200	QUENTE	INICIO	FIM	NORMAL
Média	2.40	9.30	3.80	0.00	4.40	24.30	32.60	42.00	3.10	4682.30	1.70	0.30	0.00	130.50	228.40	31.90
Desvio (P)	0.20	0.90	0.30	0.00	12.50	0.60	0.90	0.80	0.00	172.70	0.30	0.10	0.00	5.50	5.40	0.20
NBR 16697:2018	<8,5	<18,5	<4,5	<3,0	-	>15,0	>25,0	>40,0	-	>2800	-	<10,0	<5,0	<60	-	-

Comparativo ABNT x MIZU

	ABNT	MIZU
R3	15	24.30
R7	25	32.60
R28	40	42.00



• ABNT • MIZU

[Handwritten Signature]
Responsável Técnico

Gabriele Oliveira da Silva

CRQ 14200571 - XIV Região

CERTIFICADO DA QUALIDADE - FMN

ENSAIOS QUÍMICOS E FÍSICOS DO CIMENTO CP II Z 40

Maio-2024

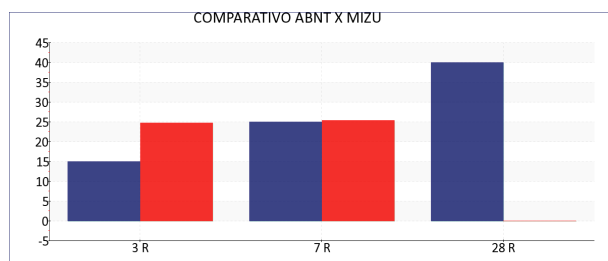
DATA	COMPOSIÇÃO QUÍMICA					RESISTÊNCIA A COMPRESSÃO			MASSA	FINURA			EXP.	PEGA		CONSIST.
	Parâmetros	PF	RI	SO3	CO2	CaO L.	3 DIAS	7 DIA	28 DIAS	ESPEC.	BLAINE	#P325	#200	QUENTE	INICIO	FIM
Unidades	%	%	%	%	%	MPa	MPa	MPa	g/cm³	cm²/g	%	%	mm	min	min	%
02/05/2024	2.33	10.08	3.85	0.00	1.65	25.70	26.00		3.10	4465.00	1.90	0.23	0.00	130.00	235.00	31.80
03/05/2024	2.45	10.25	3.91	0.00	1.71	24.00	24.90		3.10	4569.00	1.89	0.22	0.00	125.00	220.00	31.60
04/05/2024	2.36	10.25	3.90	0.00	1.68	25.30			3.10	4652.00	1.89	0.25	0.00	135.00	225.00	32.00
06/05/2024	2.50	10.96	3.85	0.00	1.55	24.10			3.10	4856.00	1.79	0.22	0.00	115.00	225.00	32.10
07/05/2024	2.25	11.32	3.35	0.00	1.65				3.10	4922.00	2.00	0.24	0.00	125.00	225.00	32.70
08/05/2024	2.15	11.40	3.46	0.00	1.62				3.10	4789.00	1.90	0.28	0.00	130.00	230.00	32.60

Controle Estatístico

						R3	R7	R28																		
	Média	Desvio (P)	NBR 16697:2018																							
	2.30	0.10	<8,5	10.70	0.60	<18,5	3.70	0.20	<4,5	0.00	1.60	-	>15,0	24.80	0.90	>25,0	>40,0	3.10	4708.80	1.90	0.20	0.00	126.70	226.70	32.10	

Comparativo ABNT x MIZU

	ABNT	MIZU
R3	15	24.80
R7	25	25.50
R28	40	



• ABNT • MIZU

Responsável Técnico
Gabriele Oliveira da Silva
CRQ 14200571 - XIV Região