

## CERTIFICADO DA QUALIDADE

### ENSAIOS QUÍMICOS E FÍSICOS DO CIMENTO CPV ARI

Nov/2024

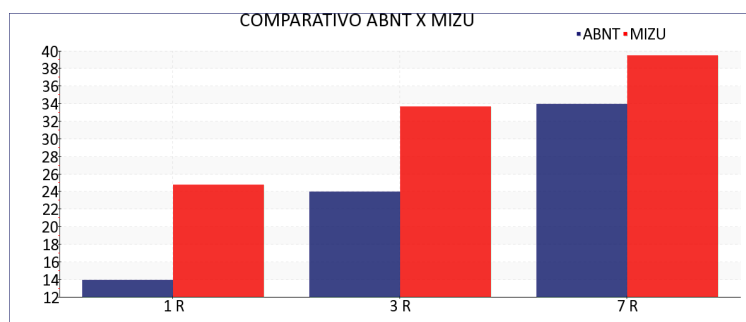
DATA	COMPOSIÇÃO QUÍMICA			RESISTÊNCIA A COMPRESSÃO				FINURA				EXP.	PEGA		CONSIST. NORMAL
	PF	RI	SO3	1 DIA	3 DIAS	7 DIA	28 DIAS	MASSA ESPECÍFICA	BLAINE	#P325	#200	QUENTE	INICIO	FIM	
	<6,5	<5,0	<4,5	>14,0	>24,0	>34,0		g/cm <sup>3</sup>	cm <sup>2</sup> /g	%	%	mm	>60	<600	
	%	%	%	MPa	MPa	MPa	MPa						min	min	%
01/11/2024	3.19	1.19	4.10	24.95	34.76	40.53	48.75	3.11	5078	0.65	0.06	0.00	113	144	31.90
04/11/2024	3.94	1.09	4.04	23.80	34.86	40.10	48.50	3.11	5078	0.37	0.04	0.00	118	150	31.64
05/11/2024	3.64	1.06	3.92	25.10	32.36	39.96	49.87	3.11	5201	0.68	0.07	0.00	116	151	31.50
05/11/2024	3.66	1.06	4.04	25.60	34.06	39.60	47.52	3.11	4767	0.75	0.10	0.00	108	141	31.58
06/11/2024	3.86	0.67	3.95	26.00	34.90	38.33	47.25	3.11	4842	0.63	0.06	0.00	112	143	31.50
07/11/2024	3.34	0.71	4.01	23.65	34.36	40.10	44.40	3.11	4897	0.56	0.07	0.00	126	163	31.60
11/11/2024	2.96	0.95	4.09	26.45	34.33	40.80	51.67	3.11	4970	0.68	0.09	0.00	106	138	31.90
12/11/2024	2.80	0.64	4.09	25.20	33.50	39.83	49.82	3.11	5042	0.70	0.06	0.00	112	147	32.08
19/11/2024	3.75		4.05	24.35	32.90	38.70	48.42	3.11	4860	0.73	0.08	0.00	113	144	31.76
21/11/2024	3.41	0.90	3.85	25.50	34.90	40.43	49.15	3.11	4879	0.69	0.10	0.00	124	159	32.14
22/11/2024	3.30	0.84	3.65	24.85	32.46	38.76	48.60	3.11	4952	0.50	0.05	0.00	116	147	31.82
26/11/2024	3.27	1.21	3.66	24.00	33.83	38.36	49.30	3.11	4897	0.63	0.09	0.00	136	177	32.96
27/11/2024	3.27	1.07	3.79	23.15	33.40	37.56	50.20	3.11	4860	0.55	0.10	0.00	139	183	32.14
29/11/2024	4.11	0.78	3.82	24.40	31.43	40.56	50.60	3.11	4652	0.67	0.09	0.00	123	158	31.82

Controle Estatístico

	PF	RI	SO3	R1	R3	R7	R28	MASSA ESPECÍFICA	BLAINE	#P325	#200	EXP.	INICIO	FIM	CONSIST.
Média	3.46	0.94	3.93	24.79	33.72	39.54	48.86	3.11	4927	0.63	0.08	0.00	119	153	31.88
Desvio	0.38	0.20	0.16	0.95	1.09	1.01	1.75	0.00	141	0.10	0.02	0.00	10	13	0.38
NBR 16697:2018	<6,5	<3,5	<4,5	>14,0	>24,0	>34,0	-	-	-	-	<6,0	<5,0	>60	<600	-

Comparativo ABNT x MIZU

	ABNT	MIZU
R1	14	24.79
R3	24	33.72
R7	34	39.54
R28	--	48.86



*Kênia gomes aires*

Responsável Técnico  
Kênia Gomes Aires  
CRQ: 21.3.00318

**CERTIFICADO DA QUALIDADE**

**ENSAIOS QUÍMICOS E FÍSICOS DO CIMENTO CPV ARI**

**Dez/2024**

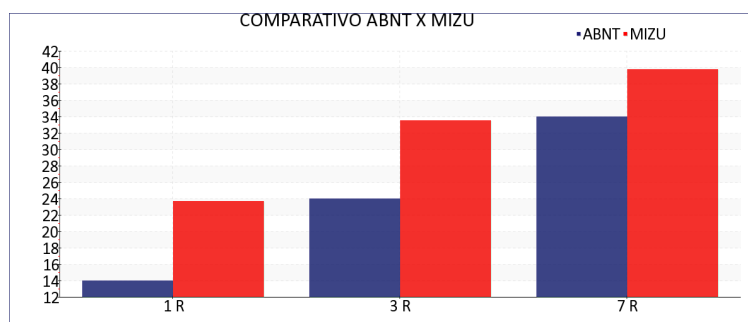
DATA	COMPOSIÇÃO QUÍMICA			RESISTÊNCIA A COMPRESSÃO				FINURA				EXP.	PEGA		CONSIST. NORMAL
	PF	RI	SO3	1 DIA	3 DIAS	7 DIA	28 DIAS	MASSA ESPECÍFICA	BLAINE	#P325	#200	QUENTE	INICIO	FIM	
	<6,5	<5,0	<4,5	>14,0	>24,0	>34,0		g/cm <sup>3</sup>	cm <sup>2</sup> /g	%	%	mm	>60	<600	
	%	%	%	MPa	MPa	MPa	MPa						min	min	%
02/12/2024	3.32	0.98	4.02	21.00	30.80	37.33	49.97	3.11	4842	0.53	0.06	0.00	130	165	31.94
03/12/2024	3.84	0.99	3.76	20.60	32.00	38.23	49.10	3.11	4823	0.58	0.04	0.00	137	173	31.74
04/12/2024	3.66	0.88	4.11	25.25	35.16	42.80	49.17	3.11	4970	0.49	0.06	0.00	118	151	31.92
05/12/2024	3.83	0.86	4.04	24.25	32.86	40.40	49.32	3.11	4952	0.54	0.07	0.00	108	140	32.04
09/12/2024	3.88	0.56	3.99	24.50	33.33	40.13	52.35	3.11	4804	0.57	0.08	0.00	121	154	31.94
10/12/2024	3.22	0.73	3.80	25.70	34.43	38.70	51.10	3.11	4842	0.59	0.06	0.00	113	146	31.88
11/12/2024	3.35	0.52	3.90	22.35	33.93	41.26		3.11	4860	0.76	0.07	0.00	113	143	31.86
11/12/2024	3.20	0.52	3.80	24.95	34.93	41.40		3.11	4748	1.07	0.11	0.00	115	148	31.68
13/12/2024	3.69	0.52	4.92	25.95	34.73	40.36		3.11	4860	0.57	0.06	0.00	118	151	32.20
17/12/2024	3.51	1.15	5.74	23.25	33.33	38.80		3.11	4934	0.48	0.05	0.00	120	155	32.44
18/12/2024	3.25	0.90	4.35	25.10	33.96	39.43		3.11	4767	0.60	0.05	0.00	131	166	32.44
19/12/2024	3.15	0.64	4.11	24.05	33.33	38.43		3.11	4860	0.43	0.07	0.00	128	164	31.66
20/12/2024	3.84	0.64	3.96	23.65	33.16	40.16		3.11	4842	0.65	0.10	0.00	118	153	31.26
23/12/2024	4.05	1.02	4.84	22.25	34.30	39.16		3.11	4842	0.43	0.04	0.00	126	163	32.42
27/12/2024	4.46	0.94	3.75	22.65	33.13	40.53		3.11	4879	0.62	0.05	0.00	110	143	31.10

**Controle Estatístico**

				R1	R3	R7	R28								
<b>Média</b>	3.62	0.79	4.21	23.70	33.56	39.81	50.17	3.11	4855	0.59	0.06	0.00	120	154	31.90
<b>Desvio</b>	0.38	0.21	0.55	1.65	1.15	1.42	1.31	0.00	62	0.16	0.02	0.00	8	10	0.39
<b>NBR 16697:2018</b>	<6,5	<3,5	<4,5	>14,0	>24,0	>34,0	-	-	-	-	<6,0	<5,0	>60	<600	-

**Comparativo ABNT x MIZU**

	ABNT	MIZU
R1	14	23.70
R3	24	33.56
R7	34	39.81
R28	--	50.17



*Kênia gomes aires*

**Responsável Técnico**

**Kênia Gomes Aires**

**CRQ: 21.3.00318**