

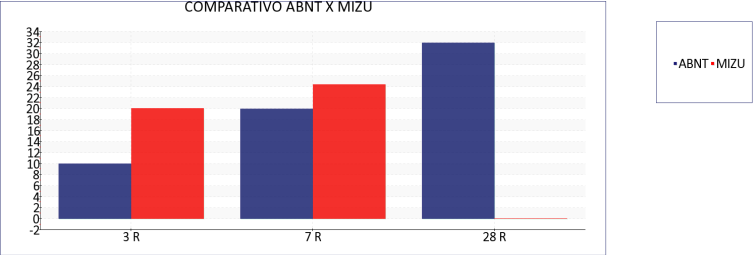
CERTIFICADO DA QUALIDADE - FMN

ENSAIOS QUÍMICOS E FÍSICOS DO CIMENTO CP IV 32

Abril-2025

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	%
01/04/2025	2.55	22.56	2.56	1.20	20.10	25.50		2.95	4944.00	4.60	0.38	0.00	135.00	240.00	29.80
02/04/2025	2.47	25.40	2.61	1.00	18.80	24.20		2.95	4996.00	4.30	0.33	0.00	140.00	230.00	29.90
03/04/2025	2.82	24.10	2.70	1.05	19.80	24.70		2.95	5005.00	4.50	0.32	0.00	135.00	235.00	30.10
04/04/2025	2.87	24.50	2.56	1.15	19.50	23.70		2.95	4992.00	4.70	0.38	0.00	140.00	240.00	30.50
05/04/2025	2.90	23.50	2.49	1.00	19.30	23.50		2.95	5096.00	4.30	0.33	0.00	145.00	230.00	29.80
07/04/2025	2.70	23.80	2.55	1.08	19.10	24.10		2.95	4989.00	4.60	0.38	0.00	160.00	250.00	30.00
08/04/2025	2.65	23.75	2.51	1.17	20.10	24.00		2.95	4996.00	4.20	0.37	0.00	150.00	240.00	30.20
09/04/2025	2.71	24.50	2.60	1.15	20.90	23.90		2.95	5005.00	3.90	0.32	0.00	145.00	230.00	30.50
10/04/2025	2.20	21.27	2.25	1.08	22.10	25.80		2.95	5022.00	3.50	0.30	0.00	140.00	230.00	29.80
11/04/2025	2.85	24.52	2.15	1.04	19.90	23.70		2.95	5196.00	3.20	0.32	0.00	140.00	235.00	30.90
12/04/2025	2.55	22.56	2.05	1.03	20.70	23.90		2.95	5038.00	3.60	0.35	0.00	145.00	240.00	30.50
14/04/2025	2.65	21.45	23.00	1.10	20.80	24.90		2.95	4939.00	3.90	0.33	0.00	135.00	235.00	30.80
15/04/2025	2.51	22.00	2.41	1.08	20.30	24.60		2.95	4874.00	4.10	0.32	0.00	140.00	240.00	30.50
16/04/2025	2.56	21.85	2.38	1.05	21.80	25.20		2.95	4996.00	3.90	0.33	0.00	135.00	235.00	30.10
17/04/2025	2.61	21.72	2.40	1.12	20.00	23.80		2.95	5125.00	4.00	0.35	0.00	140.00	240.00	30.50
19/04/2025	2.47	25.40	2.61	1.00	20.50			2.95	5096.00	3.60	0.37	0.00	145.00	230.00	29.80
22/04/2025	2.82	24.10	2.70	1.05	19.50			2.95	5075.00	3.70	0.36	0.00	150.00	240.00	29.80
23/04/2025	2.87	24.50	2.56	1.12	19.00			3.80	4996.00	3.80	0.40	0.00	145.00	235.00	30.20
24/04/2025	2.71	24.50	2.60	1.15				2.95	5005.00	3.55	0.41	0.00	155.00	230.00	30.00
26/04/2025	2.20	21.27	2.25	1.08				2.95	5196.00	3.80	0.37	0.00	140.00	240.00	30.30

Controle Estatístico												R3	R7	R28	
Média	2.60	23.40	3.50	1.10	20.10	24.40		3.00	5029.10	4.00	0.40	0.00	143.00	236.30	30.20
Desvio (P)	0.20	1.40	4.60	0.10	0.90	0.70		0.20	81.00	0.40	0.00	0.00	6.80	5.30	0.30
NBR 16697:2018	<8,5	ND	<4,5	-	>10,0	>20,0	>32,0	-	>3000	-	<8,0	<5,0	>60	-	-




Responsável Técnico
Gabriele Oliveira da Silva
CRQ 14200571 - XIV Região

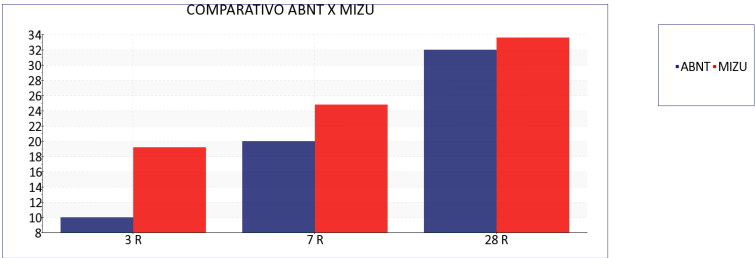
CERTIFICADO DA QUALIDADE - FMN

ENSAIOS QUÍMICOS E FÍSICOS DO CIMENTO CP IV 32

Março-2025

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	%
05/03/2025	2.50	18.05	2.89	1.80	21.20	28.50	34.90	2.95	4986.00	4.10	0.35	0.00	1.50	240.00	28.90
06/03/2025	2.64	16.74	2.81	1.97	19.90	26.90	33.40	2.95	4996.00	3.90	0.33	0.00	130.00	230.00	32.60
07/03/2025	2.70	16.96	2.75	10.90	20.50	29.70	34.80	2.95	5038.00	4.00	0.50	0.00	125.00	230.00	32.60
08/03/2025	2.75	17.55	2.81	1.88	19.20	24.30	33.90	2.95	4996.00	4.50	0.38	0.00	140.00	225.00	32.50
10/03/2025	2.48	19.16	2.82	1.81	19.80	24.60	35.00	2.95	4896.00	4.30	0.34	0.00	135.00	215.00	32.70
11/03/2025	2.28	18.69	2.57	1.77	20.20	25.60	34.80	2.95	5022.00	4.50	0.33	0.00	125.00	235.00	33.00
12/03/2025	2.45	18.56	2.65	1.80	19.00	23.50	33.10	2.95	4996.00	4.10	0.36	0.00	135.00	195.00	30.30
13/03/2025	2.61	18.57	2.62	1.83	17.80	22.80	32.80	2.95	4892.00	4.60	0.38	0.00	130.00	225.00	30.00
14/03/2025	2.72	21.14	2.71	1.90	18.50	23.80	33.00	2.95	5125.00	5.00	0.36	0.00	135.00	230.00	30.70
15/03/2025	2.67	19.87	2.70	1.88	18.00	24.80	32.10	2.95	5005.00	5.20	0.41	0.00	130.00	215.00	30.60
17/03/2025	2.55	19.05	2.65	1.91	18.60	25.00	33.60	2.95	5125.00	4.90	0.40	0.00	145.00	225.00	29.90
18/03/2025	2.61	18.90	2.59	1.78	19.30	23.70	34.10	2.95	5241.00	4.10	0.42	0.00	150.00	240.00	29.80
19/03/2025	2.59	18.86	2.55	1.87	19.60	24.00	33.30	2.95	5375.00	3.90	0.45	0.00	145.00	235.00	30.20
20/03/2025	2.45	19.21	2.70	18.65	19.90	24.80	33.00	2.95	5275.00	4.20	0.41	0.00	155.00	230.00	30.00
21/03/2025	2.65	18.96	2.63	1.85	18.60	24.00	33.20	2.95	5456.00	3.80	0.46	0.00	140.00	240.00	30.30
22/03/2025	2.60	18.78	2.68	1.78	18.90	24.50	33.70	2.95	5396.00	4.10	0.40	0.00	135.00	235.00	30.30
24/03/2025	2.60	18.90	2.71	1.91	19.10	23.90	34.50	2.95	5296.00	3.40	0.35	0.00	135.00	230.00	29.80
25/03/2025	2.58	19.10	2.56	1.89	19.30	23.70	32.90	2.95	5396.00	4.10	0.39	0.00	150.00	240.00	30.30
26/03/2025	2.85	19.50	2.49	1.89	19.20	24.50	33.10	2.95	5196.00	4.10	0.38	0.00	135.00	235.00	30.50
27/03/2025	2.80	19.25	2.70	1.86	18.00	23.80	32.90	2.95	5212.00	4.50	0.41	0.00	135.00	245.00	30.00
28/03/2025	2.91	18.50	2.55	1.99	19.00	24.00		2.95	5321.00	4.20	0.42	0.00	130.00	230.00	29.00
29/03/2025	2.75	18.90	2.56	1.90	19.60	24.50		2.95	5278.00	4.50	0.43	0.00	125.00	235.00	29.80
31/03/2025	2.70	21.50	2.54	0.78	19.30	24.80		2.95	5036.00	4.30	0.40	0.00	130.00	230.00	30.00

Controle Estatístico													R3	R7	R28
Média	2.60	18.90	2.70	2.90	19.20	24.80	33.60	3.00	5154.60	4.30	0.40	0.00	130.30	230.00	30.60
Desvio (P)	0.10	1.10	0.10	3.90	0.80	1.60	0.80	0.00	172.50	0.40	0.00	0.00	29.30	10.70	1.20
NBR 16697:2018	<8,5	ND	<4,5	-	>10,0	>20,0	>32,0	-	>3000	-	<8,0	<5,0	>60	-	-




Responsável Técnico
Gabriele Oliveira da Silva
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