

CERTIFICADO DA QUALIDADE

ENSAIOS QUÍMICOS E FÍSICOS DO CIMENTO CP II E 40 RS

Set/2024

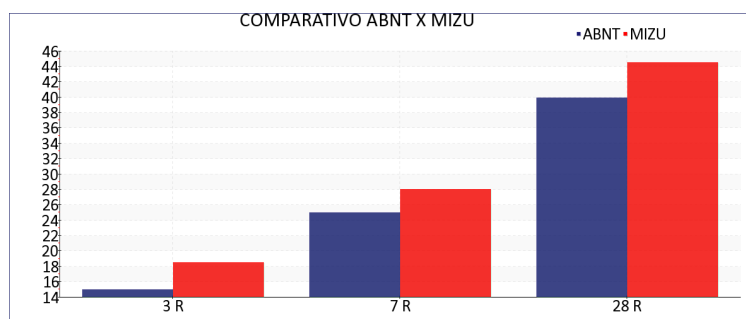
| DATA | COMPOSIÇÃO QUÍMICA | | | | RESISTÊNCIA A COMPRESSÃO | | | FINURA | | | | EXP. | PEGA | | CONSIST. NORMAL |
|------------|--------------------|------|------|-------|--------------------------|--------|--------|------------------|--------|-------|------|--------|--------|------|-----------------|
| | PF | RI | SO3 | CaO | 3 DIAS | 7 DIAS | 28 DIA | MASSA ESPECÍFICA | BLAINE | #P325 | #200 | QUENTE | INICIO | FIM | |
| | <8,5 | <5,0 | <4,5 | Livre | >15,0 | >25,0 | >40,0 | g/cm³ | cm²/g | % | % | mm | >60 | <600 | |
| | % | % | % | % | MPa | % | MPa | | | | | | min | min | % |
| 02/09/2024 | 1.08 | 0.73 | 1.58 | 1.20 | 18.03 | 28.43 | 43.95 | 2.98 | 4785 | 0.68 | 0.07 | 0.00 | 180 | 233 | 32.34 |
| 09/09/2024 | 1.09 | 0.82 | 1.64 | 1.33 | 16.73 | 27.43 | 44.35 | 2.98 | 4713 | 0.67 | 0.08 | 0.00 | 193 | 244 | 32.48 |
| 13/09/2024 | 1.19 | 1.13 | 1.74 | 1.25 | 19.70 | 29.30 | 46.35 | 2.98 | 4777 | 0.93 | 0.08 | 0.00 | 164 | 209 | 32.80 |
| 16/09/2024 | 1.26 | 0.74 | 1.64 | 1.25 | 18.63 | 28.56 | 45.45 | 2.99 | 4722 | 1.02 | 0.11 | 0.00 | 189 | 241 | 32.74 |
| 26/09/2024 | 0.10 | | 1.42 | | 18.20 | 26.20 | 43.45 | 2.98 | 4737 | 0.75 | 0.08 | 0.00 | 185 | 237 | 32.64 |
| 30/09/2024 | 0.10 | | 1.68 | | 20.06 | 28.53 | 43.97 | 2.98 | 4856 | 0.97 | 0.07 | 0.00 | 187 | 238 | 32.62 |

Controle Estatístico

| | | | | | R3 | R7 | R28 | | | | | | | | |
|----------------|------|------|------|------|-------|-------|-------|------|------|------|-------|------|-------|-----|-------|
| Média | 0.80 | 0.86 | 1.62 | 1.26 | 18.56 | 28.08 | 44.59 | 2.98 | 4765 | 0.84 | 0.08 | 0.00 | 183 | 234 | 32.60 |
| Desvio | 0.55 | 0.19 | 0.11 | 0.05 | 1.21 | 1.10 | 1.09 | 0.00 | 53 | 0.15 | 0.01 | 0.00 | 10 | 13 | 0.17 |
| NBR 16697:2018 | <8,5 | <5,0 | <4,5 | - | >15,0 | >25,0 | >40,0 | - | - | - | <10,0 | <5,0 | >60,0 | - | - |

Comparativo ABNT x MIZU

| | ABNT | MIZU |
|-----|------|-------|
| R3 | 15 | 18.56 |
| R7 | 25 | 28.08 |
| R28 | 40 | 44.59 |



Kênia gomes aires

Responsável Técnico

Kênia Gomes Aires

CRQ: 21.3.00318

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Out/2024

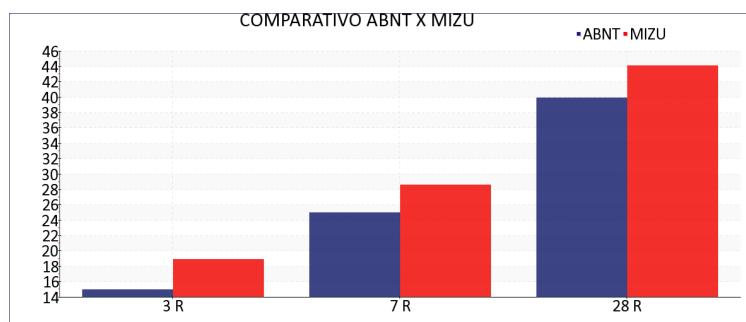
| DATA | COMPOSIÇÃO QUÍMICA | | | | RESISTÊNCIA A COMPRESSÃO | | | FINURA | | | | EXP. | PEGA | | CONSIST. NORMAL |
|------------|--------------------|------|------|-------|--------------------------|--------|--------|------------------|--------|-------|------|--------|--------|------|-----------------|
| | PF | RI | SO3 | CaO | 3 DIAS | 7 DIAS | 28 DIA | MASSA ESPECÍFICA | BLAINE | #P325 | #200 | QUENTE | INICIO | FIM | |
| | <8,5 | <5,0 | <4,5 | Livre | >15,0 | >25,0 | >40,0 | g/cm³ | cm²/g | % | % | mm | >60 | <600 | |
| 07/10/2024 | 0.10 | | 1.37 | | 18.43 | 28.36 | 44.97 | 2.98 | 4809 | 1.08 | 0.07 | 0.00 | 188 | 239 | 32.60 |
| 11/10/2024 | 0.70 | | 1.53 | | 17.83 | 27.70 | 43.40 | 2.98 | 4737 | 0.70 | 0.15 | 0.00 | 182 | 235 | 32.68 |
| 17/10/2024 | 0.77 | | 2.27 | | 23.66 | 32.60 | | 2.98 | 4856 | 0.66 | 0.05 | 0.00 | 164 | 214 | 32.68 |
| 23/10/2024 | 0.64 | | 1.61 | | 18.43 | 28.56 | | 2.98 | 4718 | 0.86 | 0.06 | 0.00 | 191 | 246 | 32.98 |
| 24/10/2024 | 0.32 | | 1.47 | | 17.83 | 27.96 | | 2.98 | 4732 | 0.60 | 0.06 | 0.00 | 191 | 246 | 32.92 |
| 25/10/2024 | 0.24 | | 1.45 | | 18.10 | 28.10 | | 2.98 | 4809 | 0.84 | 0.08 | 0.00 | 178 | 228 | 32.92 |
| 28/10/2024 | 0.48 | | 1.49 | | 18.33 | 27.33 | | 2.98 | 4856 | 0.54 | 0.10 | 0.00 | 189 | 239 | 32.98 |

Controle Estatístico

| | | | | | R3 | R7 | R28 | | | | | | | | |
|----------------|------|------|------|---|-------|-------|-------|------|------|------|-------|------|-------|-----|-------|
| Média | 0.46 | | 1.60 | | 18.94 | 28.66 | 44.19 | 2.98 | 4788 | 0.75 | 0.08 | 0.00 | 183 | 235 | 32.82 |
| Desvio | 0.25 | | 0.31 | | 2.10 | 1.79 | 1.11 | 0.00 | 59 | 0.19 | 0.03 | 0.00 | 10 | 11 | 0.16 |
| NBR 16697:2018 | <8,5 | <5,0 | <4,5 | - | >15,0 | >25,0 | >40,0 | - | - | - | <10,0 | <5,0 | >60,0 | - | - |

Comparativo ABNT x MIZU

| | ABNT | MIZU |
|-----|------|-------|
| R3 | 15 | 18.94 |
| R7 | 25 | 28.66 |
| R28 | 40 | 44.19 |



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