

Českomoravský cement, a.s.  
Mokrá 359  
664 04 Mokrá-Horákov

## Statistické hodnocení kvality cementu

dle EN 197-1

**Cement: CEM II/B-S 32,5 R**

Období: Od: **01.09.2022**

Závod: **Mokrá**

Do: **30.09.2022**

### Mechanické a fyzikální vlastnosti

| Datum         | Měrný povrch           | Normální konzistence | Počátek tuhnutí | Konec tuhnutí | Objemová stálost | Pevnost v tlaku |             | Pevnost v ohybu |            |
|---------------|------------------------|----------------------|-----------------|---------------|------------------|-----------------|-------------|-----------------|------------|
|               |                        |                      |                 |               |                  | 2 dny           | 28 dní      | 2 dny           | 28 dní     |
| Jednotka      | [ m <sup>2</sup> /kg ] | [ % ]                | [ min ]         | [ min ]       | [ mm ]           | [ MPa ]         | [ MPa ]     | [ MPa ]         | [ MPa ]    |
| 05.09.2022    | 414                    | 29.4                 | 242             | 314           | 1.0              | 18.3            | 49.8        | 4.5             | 9.0        |
| 07.09.2022    | 392                    | 29.2                 | 224             | 311           | 1.0              | 18.0            | 48.4        | 4.2             | 9.8        |
| 10.09.2022    | 396                    | 28.4                 | 240             | 342           | 0.0              | 17.5            | 48.6        | 3.8             | 9.3        |
| 12.09.2022    | 413                    | 28.8                 | 258             | 347           | 0.5              | 16.3            | 49.8        | 3.6             | 9.4        |
| 19.09.2022    | 417                    | 28.8                 | 237             | 320           | 1.0              | 18.5            | 51.0        | 3.9             | 9.2        |
| 20.09.2022    | 416                    | 29.0                 | 220             | 315           | 2.0              | 18.9            | 51.7        | 4.3             | 9.9        |
| 26.09.2022    | 412                    | 29.0                 | 265             | 334           | 0.5              | 17.9            | 50.9        | 4.3             | 9.6        |
| 28.09.2022    | 408                    | 29.0                 | 234             | 338           | 0.5              | 18.5            | 50.8        | 4.3             | 9.4        |
| ---           | ---                    | ---                  | ---             | ---           | ---              | ---             | ---         | ---             | ---        |
| ---           | ---                    | ---                  | ---             | ---           | ---              | ---             | ---         | ---             | ---        |
| <b>Průměr</b> | <b>409</b>             | <b>29.0</b>          | <b>240</b>      | <b>328</b>    | <b>0.8</b>       | <b>18.0</b>     | <b>50.1</b> | <b>4.1</b>      | <b>9.4</b> |
| Max           | 417                    | 29.4                 | 265             | 347           | 2.0              | 18.9            | 51.7        | 4.5             | 9.9        |
| Min           | 392                    | 28.4                 | 220             | 311           | 0.0              | 16.3            | 48.4        | 3.6             | 9.0        |
| Std           | 9                      | 0.3                  | 14              | 13            | 0.6              | 0.7             | 1.1         | 0.3             | 0.3        |
| Četnost       | 8                      | 8                    | 8               | 8             | 8                | 8               | 8           | 8               | 8          |
| Norma-min     |                        |                      | 75              |               |                  | 10.0            | 32.5        |                 |            |
| Norma-max     |                        |                      |                 |               | 10               |                 | 52.5        |                 |            |

### Chemické vlastnosti

| Datum         | SiO <sub>2</sub> | Al <sub>2</sub> O <sub>3</sub> | Fe <sub>2</sub> O <sub>3</sub> | CaO          | MgO         | K <sub>2</sub> O | Na <sub>2</sub> O | Obsah síranů (jako SO <sub>3</sub> ) | Na <sub>2</sub> O ekv. | Obsah Cl     | Ztráta ziháním | Nerozpuštěný zbytek | Vodorozpuštěný chrom (Cr <sup>6+</sup> ) | C <sub>3</sub> A ve slínku |
|---------------|------------------|--------------------------------|--------------------------------|--------------|-------------|------------------|-------------------|--------------------------------------|------------------------|--------------|----------------|---------------------|--|----------------------------|
| Jednotka      | [ % ]            | [ % ]                          | [ % ]                          | [ % ]        | [ % ]       | [ % ]            | [ % ]             | [ % ]                                | [ % ]                  | [ % ]        | [ % ]          | [ % ]               | [ ppm ]                                  | [ % ]                      |
| 05.09.2022    | 25.19            | 6.13                           | 2.43                           | 52.86        | 3.72        | 0.84             | 0.18              | 2.42                                 | 0.73                   | 0.073        | ---            | ---                 | ---                                      | 6.58                       |
| 07.09.2022    | 25.21            | 6.07                           | 2.49                           | 54.65        | 3.57        | 0.81             | 0.18              | 2.40                                 | 0.71                   | 0.063        | ---            | ---                 | ---                                      | 7.57                       |
| 10.09.2022    | 24.97            | 5.68                           | 2.54                           | 56.11        | 3.14        | 0.73             | 0.18              | 2.51                                 | 0.66                   | 0.064        | ---            | ---                 | ---                                      | 6.44                       |
| 12.09.2022    | 25.12            | 5.69                           | 2.54                           | 55.80        | 3.16        | 0.73             | 0.19              | 2.55                                 | 0.67                   | 0.060        | ---            | ---                 | ---                                      | 6.31                       |
| 19.09.2022    | 24.20            | 5.73                           | 2.62                           | 56.61        | 3.02        | 0.72             | 0.17              | 2.54                                 | 0.64                   | 0.064        | ---            | ---                 | ---                                      | 6.54                       |
| 20.09.2022    | 24.54            | 5.87                           | 2.57                           | 56.11        | 3.15        | 0.67             | 0.18              | 2.51                                 | 0.62                   | 0.056        | ---            | ---                 | ---                                      | 6.55                       |
| 26.09.2022    | 25.04            | 5.80                           | 2.49                           | 55.47        | 3.31        | 0.73             | 0.19              | 2.48                                 | 0.67                   | 0.063        | ---            | ---                 | ---                                      | 6.49                       |
| 28.09.2022    | 25.38            | 5.76                           | 2.46                           | 55.55        | 3.34        | 0.72             | 0.20              | 2.47                                 | 0.67                   | 0.063        | ---            | ---                 | ---                                      | 6.44                       |
| ---           | ---              | ---                            | ---                            | ---          | ---         | ---              | ---               | ---                                  | ---                    | ---          | ---            | ---                 | ---                                      | ---                        |
| ---           | ---              | ---                            | ---                            | ---          | ---         | ---              | ---               | ---                                  | ---                    | ---          | ---            | ---                 | ---                                      | ---                        |
| <b>Průměr</b> | <b>24.96</b>     | <b>5.84</b>                    | <b>2.52</b>                    | <b>55.40</b> | <b>3.30</b> | <b>0.74</b>      | <b>0.18</b>       | <b>2.48</b>                          | <b>0.67</b>            | <b>0.063</b> | <b>---</b>     | <b>---</b>          | <b>---</b>                               | <b>6.61</b>                |
| Max           | 25.38            | 6.13                           | 2.62                           | 56.61        | 3.72        | 0.84             | 0.20              | 2.55                                 | 0.73                   | 0.073        | ---            | ---                 | ---                                      | 7.57                       |
| Min           | 24.20            | 5.68                           | 2.43                           | 52.86        | 3.02        | 0.67             | 0.17              | 2.40                                 | 0.62                   | 0.056        | ---            | ---                 | ---                                      | 6.31                       |
| Std           | 0.37             | 0.16                           | 0.06                           | 1.10         | 0.22        | 0.05             | 0.01              | 0.05                                 | 0.03                   | 0.005        | ---            | ---                 | ---                                      | 0.37                       |
| Četnost       | 8                | 8                              | 8                              | 8            | 8           | 8                | 8                 | 8                                    | 8                      | 8            | 0              | 0                   | 0  | 8                          |
| Norma-min     |                  |                                |                                |              |             |                  |                   |                                      |                        |              |                |                     |  |                            |
| Norma-max     |                  |                                |                                |              |             |                  |                   | 3.5                                  |                        | 0.10         |                |                     |  |                            |

V Mokré dne : 08.11.2022

Ing. Vojtěch Smutný - vedoucí útvaru řízení jakosti

Technická podpora prodeje:  
e-mail: [technicka\\_podpora@cmcem.cz](mailto:technicka_podpora@cmcem.cz)  
tel: +420 544 122 544

 **Českomoravský cement, a.s.**  
Mokrá-Horákov, Mokrá 359, PSC 664 04  
závod Mokrá  
IČ: 262 09 578  
DIČ: CZ26209578