

## Quality Certificate of cement

Type of cement : **CEM I 42,5R**

Requirements acc. to: EN 197-1:2011

Values obtained for the period of: **July 2023**

|  | Unit | Results | Requirements acc. to:<br>EN 197-1:2011 |
|--|------|---------|----------------------------------------|
|--|------|---------|----------------------------------------|

### 1. Properties (by standards)

|                                                                   |     |       |                           |
|-------------------------------------------------------------------|-----|-------|---------------------------|
| Compressive strength                                              |     |       |                           |
| Early strength, after 2 days                                      | MPa | 26,1  | $\geq 20$                 |
| Standard strength, after 28 days<br>(results from previous month) | MPa | 56,8  | $\geq 42,5$ i $\leq 62,5$ |
| Initial setting time                                              | min | 205   | $\geq 60$                 |
| Expansion of cement                                               | mm  | 0,5   | $\leq 10$                 |
| Sulfate content (as SO <sub>3</sub> )                             | %   | 3,15  | $\leq 4,0$                |
| Chloride content Cl <sup>-</sup>                                  | %   | 0,082 | $\leq 0,10$               |
| Loss on ignition <sup>a)</sup>                                    | %   | 3,18  | $\leq 5,0$                |
| Insoluble residues <sup>a)</sup>                                  | %   | 0,49  | $\leq 5,0$                |

### 2. Additional information

|                                                        |   |       |   |
|--------------------------------------------------------|---|-------|---|
| Laser particle size distribution<br>passing 8 µm/32 µm | % | 29/73 | - |
|--------------------------------------------------------|---|-------|---|

a) only for CEM I and CEM III

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