



Conformity Certificate



**Regen Ground Granulated Blastfurnace Slag Produced at
Sample Period**

**Port Talbot
November 2023**

Certificate of Conformity of Regen GGBS

Spot samples of Regen GGBS were taken and tested to determine conformity to the autocontrol requirements of EN 15167-1 "Ground granulated blastfurnace slag for use in concrete, mortar and grout" following the methods given in that standard. The values reported are mean values for the monthly production period.

| | | Result | EN Limit |
|--|--|--------|----------|
| Regen GGBS Only | | | |
| Fineness m ² /kg | | 452 | min. 275 |
| Magnesia MgO % | | 7 | max. 18 |
| Sulfate SO ³ % | | 0.13 | max. 2.5 |
| Sulfide S ²⁻ % | | 1.19 | max. 2.0 |
| Chloride Content Cl % | | 0.00 | max. 0.1 |
| Moisture Content % | | 0.07 | max. 1.0 |
| Alumina Al ₂ O ₃ % | | 13 | |

Note: If the value is $\geq 14\%$ the '+SR' restriction will be exceeded if the C₃A of the CEM I is $> 10\%$.

| | | | |
|---|--|------------|--|
| Alkalis as Na₂O equ. (acid soluble) | | | |
| Certified Average Alkali (Last 25) % | | ≤ 1.0 | |
| Mean Alkali content (Last 25) % | | 0.71 | |
| Declared Mean : Mean last 25 + (SD last 25 x 1.64) % | | 0.82 | |

| | | | |
|---|---------|-----|------------------------|
| Combination of 50% Laboratory Stock CEM I Portland Cement and 50% Regen GGBS | | | |
| Initial Setting Time min. | | 205 | $> 2 \times \text{PC}$ |
| Activity Index % | 7 days | 69 | min. 45 |
| | 28 days | 89 | min. 70 |

| | | | |
|---|---------|------|--|
| Laboratory Stock CEM I Portland Cement Only | | | |
| <i>The laboratory stock CEM I Portland cement used in these tests was supplied by Hanson.</i> | | | |
| Initial Setting Time min | | 135 | |
| Compressive Strength N/mm ² | 7 days | 46.6 | |
| | 28 days | 58.6 | |

The Regen GGBS contained no additional materials other than those permitted. The above results and other tests demonstrate the conformity of the material sold during the month to the requirements of EN 15167-1.

Hanson Cement has used all reasonable care to ensure the information herein contained is accurate but to the extent permitted in law, no liability can be accepted by Hanson Cement for any loss, damage, cost or expense arising from any inaccuracy, whether due to negligence or otherwise.

Signed:

Dr Nina Cardinal, Dipl.Ing., CEng, MiMMM National Technical Manager



1333-CPR-00134