|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| TABLE S1. Analyses performed at different places of the sample |  |  |  |  |  |  |
|  |  | (%) atomic |   |   |
|  | Nº analyse | Mg | Al  | Si  | S  | K  | Ca  | Fe  | Ca/Si | Al/S | Mg/Si | Mineral agregates  |
| ref. low-pHC | 1 | 0.0 | 0.4 | 40.6 | 29.5 | 0.0 | 29.5 | 0.0 | 0.7 |   |   | cement matrix |
| 2 | 2.2 | 3.2 | 42.1 | 1.4 | 0.0 | 47.5 | 3.7 | 1.1 |   |   | cement matrix |
| 3 | 0.7 | 0.0 | 53.3 | 0.8 | 0.7 | 44.5 | 0.0 | 0.8 |   |   | cement matrix |
| 4 | 0.7 | 2.1 | 50.5 | 1.5 | 0.0 | 44.0 | 1.3 | 0.9 |   |   | cement matrix |
| 5 | 3.5 | 6.7 | 39.4 | 2.9 | 0.0 | 37.4 | 10.1 | 0.9 |   |   | cement matrix |
| 6 | 0.0 | 0.7 | 50.2 | 1.5 | 0.0 | 46.0 | 1.7 | 0.9 |   |   | cement matrix |
| 7 | 0.0 | 0.6 | 54.9 | 0.0 | 0.0 | 44.5 | 0.0 | 0.8 |   |   | cement matrix |
| 8 | 0.0 | 0.0 | 56.3 | 0.0 | 0.0 | 43.7 | 0.0 | 0.8 |   |   | cement matrix  |
| 9 | 0.0 | 2.0 | 52.0 | 3.4 | 0.0 | 41.1 | 1.5 | 0.8 |   |   | cement matrix |
| 10 | 1.0 | 3.0 | 51.6 | 2.4 | 2.1 | 38.7 | 1.2 | 0.7 |   |   | cement matrix |
| 11 | 1.3 | 2.5 | 53.7 | 0.9 | 0.0 | 40.2 | 1.8 | 0.7 |   |   | cement matrix  |
| 12 | 1.0 | 3.6 | 46.5 | 2.7 | 0.0 | 44.1 | 2.1 | 0.9 |   |   | cement matrix |
| 13 | 1.2 | 1.7 | 43.0 | 3.7 | 0.0 | 47.5 | 2.9 | 1.1 |   |   | cement matrix  |
| 14 | 0.9 | 1.3 | 52.3 | 1.3 | 0.0 | 42.8 | 1.3 | 0.8 |   |   | cement matrix |
| \*Ӯ±s |   |   |   |   |   |   |   | 0.9±0.1 |   |   |   |
| 15 | 1.2 | 4.4 | 34.0 | 5.7 | 0.0 | 50.8 | 3.7 | - | 0.8 |   | ettringite |
| C-W Interface | 16 | 3.7 | 2.3 | 47.5 | 1.1 | 0.0 | 42.9 | 2.5 | 0.9 |   |  | cement matrix  |
| 17 | 2.3 | 2.2 | 50.5 | 1.6 | 0.0 | 40.8 | 2.6 | 0.8 |   |  | cement matrix  |
| 18 | 2.3 | 4.2 | 49.9 | 2.0 | 0.3 | 36.6 | 4.7 | 0.7 |   |  | cement matrix  |
| 19 | 1.6 | 2.7 | 48.1 | 2.6 | 0.0 | 43.0 | 2.0 | 0.9 |   |  | cement matrix  |
| 20 | 0.0 | 1.7 | 60.9 | 0.5 | 0.0 | 39.1 | 1.7 | 0.6 |   |  | cement matrix  |
| 21 | 0.0 | 0.0 | 62.2 | 0.0 | 0.0 | 37.8 | 0.0 | 0.6 |   |  | cement matrix  |
| 22 | 1.2 | 2.5 | 52.5 | 2.5 | 0.0 | 41.3 | 0.0 | 0.8 |   |  | cement matrix  |
| 23 | 0.0 | 0.0 | 63.1 | 0.0 | 0.0 | 36.9 | 0.0 | 0.6 |   |  | cement matrix  |
| Ӯ±s |   |   |   |   |   |   |   | 0.7±0.1 |   |   |   |
| C-B Interface  | 24 | 0.8 | 2.8 | 56.0 | 0.0 | 0.4 | 38.4 | 1.5 | 0.7 |   |   | cement matrix |
| 25 | 2.1 | 1.4 | 49.1 | 0.0 | 0.0 | 45.6 | 1.8 | 0.9 |   |  | cement matrix  |
| 26 | 0.0 | 1.4 | 52.7 | 0.0 | 0.0 | 44.1 | 1.9 | 0.8 |   |  | cement matrix  |
| 27 | 1.2 | 2.2 | 49.3 | 1.0 | 0.0 | 44.1 | 2.1 | 0.9 |   |  | cement matrix  |
| 28 | 0.9 | 1.8 | 60.7 | 2.3 | 0.0 | 32.9 | 1.5 | 0.5 |   |  | cement matrix  |
| 29 | 3.3 | 3.3 | 50.4 | 0.6 | 0.0 | 39.1 | 3.3 | 0.8 |   |  | cement matrix  |
| 30 | 0.6 | 2.5 | 54.0 | 3.0 | 0.0 | 38.8 | 1.1 | 0.7 |   |  | cement matrix  |
| Ӯ±s |   |   |   |   |   |   |   | 0.8±0.1 |   |   |   |
| 31 | 5.2 | 1.5 | 58.4 | 0.0 | 0.0 | 34.2 | 0.6 | 0.6 |   |  | C-S-H |
| 32 | 2.8 | 8.1 | 25.6 | 12.7 | 0.0 | 43.5 | 7.3 | - | 0.6 |  | ettringite |
| 33 | 3.3 | 43.0 | 0.6 | 0.0 | 46.6 | 3.3 | 0.0 | - |  |  | calcite |
| Surface Bentonite | 34 | 25.5 | 15.6 | 54.1 | 0.0 | 1.2 | 1.1 | 2.4 |   |   | 0.5 | \*\*Mnt-Mg  |
| 35 | 29.4 | 10.7 | 54.9 | 4.9 | 0.0 | 0.0 | 0.0 |   |   | 0.5 | Mnt-Mg  |
| 36 | 29.7 | 6.8 | 60.5 | 0.0 | 0.7 | 0.6 | 1.6 |   |   | 0.5 | Mnt-Mg  |
| 37 | 37.2 | 10.1 | 49.0 | 0.0 | 1.0 | 0.8 | 1.9 |   |   | 0.8 | Mnt-Mg  |
| 38 | 23.7 | 16.9 | 52.5 | 0.0 | 1.4 | 1.6 | 1.4 |   |   | 0.5 | Mnt-Mg  |
| 39 | 28.1 | 16.1 | 52.8 | 0.0 | 0.6 | 0.8 | 1.5 |   |   | 0.5 | Mnt-Mg  |
| 40 | 32.7 | 13.6 | 50.3 | 0.0 | 0.8 | 0.8 | 1.8 |   |   | 0.7 | Mnt-Mg  |
| 41 | 19.9 | 18.7 | 54.8 | 0.0 | 1.4 | 1.1 | 2.8 |   |   | 0.4 | Mnt-Mg  |
| Ӯ±s |   |   |   |   |   |   |   |   |   | 0.5±0.1 |   |
| \*Ӯ±s: arithmetic mean ± standar deviation |  |  |  |  |  |  |  |  |
| \*\*Mnt-Mg: Montmorillonite rich in magnesium |  |  |  |  |  |  |  |  |