

### Port Talbot - July 2022

Combinations of Regen GGBS supplied from Hanson Cement in combination with the CEM I Portland Cements and CEM II Portland Limestone Cements (PLC) listed below conform with the requirements of BS 8500-2:2015 over the indicated range of proportions. The compressive strength results are for tests carried out in accordance with BS EN 197-1 with 50% Regen GGBS in combination with the indicated CEM I Portland Cement and 20% Regen GGBS in combination with the indicated CEM II Portland Limestone Cements (PLC)

| Portland Cement Source | Compressive Strength<br>N/mm <sup>2</sup> |        | Regen GGBS Percentage Range |     |       |     |      |     |
|------------------------|---|--------|-----------------------------|-----|-------|-----|------|-----|
|                        |   |        | 42.5L                       |     | 32.5L |     | 22.5 |     |
|                        | 7 day                                     | 28 day | Min                         | Max | Min   | Max | Min  | Max |
| PADESWOOD PLC          | 44.0                                      | 61.6   | 1                           | 30  | n/a   | n/a | n/a  | n/a |
| ABERTHAW               | 34.3                                      | 55.0   | 17                          | 67  | 52    | 80  | 76   | 80  |
| METAPORQUERA PLC       | 39.8                                      | 51.5   | 1                           | 30  | n/a   | n/a | n/a  | n/a |
| ABERTHAW PLC           | 41.8                                      | 57.3   | 1                           | 30  | n/a   | n/a | n/a  | n/a |
| KETTON                 | 34.2                                      | 53.9   | 6                           | 64  | 46    | 78  | 72   | 80  |
| CAULDON 52.5N          | 33.7                                      | 54.8   | 6                           | 62  | 52    | 76  | 70   | 80  |
| PADESWOOD              | 35.6                                      | 55.3   | 6                           | 64  | 46    | 79  | 73   | 80  |
| TUNSTEAD               | 30.8                                      | 54.9   | 25                          | 68  | 55    | 80  | 75   | 80  |
| RIBBLESDALE            | 34.2                                      | 56.7   | 30                          | 68  | 54    | 80  | 76   | 80  |
| RUGBY                  | 33.2                                      | 57.0   | 6                           | 66  | 55    | 79  | 73   | 80  |
| LEMONA                 | No  | Sample | n/a                         | n/a | n/a   | n/a | n/a  | n/a |
| DUNBAR                 | 27.4                                      | 54.6   | 17                          | 50  | 46    | 79  | 70   | 80  |
| CHATHAM LAGERDORF      | 38.5                                      | 59.1   | 6                           | 73  | 65    | 80  | 79   | 80  |
| PLATIN                 | 31.5                                      | 53.8   | 6                           | 66  | 46    | 80  | 75   | 80  |
| COOKSTOWN              | No  | Sample | n/a                         | n/a | n/a   | n/a | n/a  | n/a |
| ALHANDRA 52.5R         | 31.0                                      | 52.2   | 33                          | 64  | 53    | 80  | 74   | 80  |
| HOPE                   | 33.9                                      | 54.4   | 6                           | 65  | 52    | 79  | 73   | 80  |
| LIMERICK               | 32.5                                      | 54.6   | 6                           | 62  | 51    | 79  | 72   | 80  |
| MONJOS                 | 36.6                                      | 60.2   | 6                           | 72  | 52    | 80  | 78   | 80  |
| METAPORQUERA           | 36.0                                      | 55.8   | 6                           | 63  | 48    | 78  | 71   | 80  |
| ST. EGREVE             | 19.3                                      | 48.9   | 6                           | 40  | 37    | 55  | 55   | 80  |
| ALCANAR                | 34.1                                      | 58.4   | 26                          | 67  | 55    | 80  | 77   | 80  |
| LAGAN                  | 32.2                                      | 53.2   | 6                           | 68  | 54    | 80  | 75   | 80  |
| OUTAO                  | 32.8                                      | 54.0   | 6                           | 69  | 54    | 80  | 76   | 80  |
| KETTON PLC             | 40.5                                      | 57.3   | 1                           | 30  | n/a   | n/a | n/a  | n/a |
| CEMENTOS MOLINS        | No  | Sample | n/a                         | n/a | n/a   | n/a | n/a  | n/a |
| HOPE PLC               | 40.1                                      | 55.9   | 1                           | 30  | n/a   | n/a | n/a  | n/a |
| OGGAZ                  | 32.6                                      | 55.2   | 28                          | 66  | 55    | 80  | 75   | 80  |
|                        |   |        |                             |     |       |     |      |     |
|                        |   |        |                             |     |       |     |      |     |

| Combination Designation<br>(Table 1 BS 8500-2) | Percentage Regen GGBS                  |               |
|--|--|---------------|
|  | Not Less Than                          | Not More Than |
| CIIA (With CEM I)                              | 6                                      | 20            |
| CIIA (With PLC)                                | Depends on limestone content in cement |               |
| CIIB-M   | Depends on limestone content in cement |               |
| CIIB-S   | 21                                     | 35            |
| CIIIA  | 36                                     | 65            |
| CIIBB  | 66                                     | 80            |

The Regen GGBS contained no additional materials others than those permitted according to BS 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