



# CERTIFICATE OF QUALITY

EcoFast® Type HE Cement

NZS 3122:2009

EcoFast

Issued to: National Sales Manager

Test Report No: 23#155

info@goldenbay.co.nz

| Code                       | Week Ending | Specific Surface Area | Normal Consistency | Initial Set | Final Set | Sound-ness | Compressive Strength |          |          |         |       |          |        |        |         |     | Free Lime | Sodium Equivalent (NaEq) | Sulphur Trioxide (SO3) |
|----------------------------|-------------|-----------------------|--------------------|-------------|-----------|------------|----------------------|----------|----------|---------|-------|----------|--------|--------|---------|-----|-----------|--------------------------|------------------------|
|                            |             |                       |                    |             |           |            | ISO-CEN              |          |          |         |       | Concrete |        |        |         |     |           |                          |                        |
|                            |             |                       |                    |             |           |            | 1 day                | 3 days   | 7 days   | 28 days | Slump | 1 day    | 3 days | 7 days | 28 days |     |           |                          |                        |
| Mean                       |             | 514                   | 33.5               | 117         | 3:01      | 1          | 23.6                 | 41.5     | 52.3     | 67.9    | 84.2  | 14.3     | 35.6   | 44.2   | 55.2    | 1.5 | 0.56      | 2.37                     |                        |
| Standard Deviation         |             | 13                    | 0.5                | 15          | 0:19      | 0.4        | 1.6                  | 2.2      | 1.9      | 1.6     | 10.6  | 2.2      | 3.7    | 3.4    | 3.2     | 0.3 | 0.02      | 0.06                     |                        |
| Min                        |             | 470                   | 31.9               | 90          | 2:30      | 0          | 21.2                 | 38.0     | 48.7     | 65.3    | 70.0  | 10.0     | 30.0   | 38.5   | 50.5    | 1.0 | 0.52      | 2.28                     |                        |
| Max                        |             | 535                   | 34.2               | 150         | 3:45      | 2          | 27.4                 | 45.3     | 56.1     | 71.2    | 110.0 | 18.5     | 45.0   | 51.0   | 60.5    | 1.9 | 0.60      | 2.53                     |                        |
| NZS 3122:2009 Requirements |             |                       |                    | 45 min      | 6:00 max  | 5 max      |                      | 25.0 min | 40.0 min |         |       |          |        |        |         |     | 0.6 max   | 3.5 max                  |                        |
| Units                      |             | m2/kg                 | %                  | minutes     | hrs:mins  | mm         | Mpa                  | MPa      | MPa      | MPa     | mm    | Mpa      | MPa    | MPa    | MPa     | %   | %         | %                        |                        |
| 231221-463-HE              | 21/12/23    | 530                   | 33.0               | 135         | 3:15      |            | 27.4                 |          |          |         |       |          |        |        |         | 1.1 | 0.56      | 2.33                     |                        |
| 231202-748-HE              | 02/12/23    | 520                   | 31.9               | 105         | 3:00      | 1          | 24.3                 | 42.9     | 53.1     |         | 80    | 14.0     | 31.5   | 40.0   |         | 1.9 | 0.60      | 2.32                     |                        |
| 231123-052-HE              | 23/11/23    | 525                   | 32.5               | 135         | 3:15      | 0          | 24.0                 | 38.6     | 53.3     | 68.4    | 90    | 15.0     | 36.5   | 42.5   | 54.5    | 1.8 | 0.58      | 2.31                     |                        |
| 231109-562-HE              | 09/11/23    | 505                   | 33.3               | 120         | 3:00      | 1          | 23.8                 | 42.7     | 55.7     | 66.8    | 80    | 15.5     | 36.5   | 46.0   | 56.5    | 1.3 | 0.58      | 2.34                     |                        |
| 231024-980-HE              | 24/10/23    | 525                   | 33.6               | 105         | 2:30      | 1          | 25.6                 | 41.8     | 51.8     | 67.0    | 100   | 14.5     | 35.5   | 42.0   | 50.5    | 1.7 | 0.54      | 2.43                     |                        |
| 231011-416-HE              | 11/10/23    | 515                   | 33.6               | 120         | 2:45      | 1          | 25.0                 | 43.8     | 53.5     | 71.2    | 90    | 12.0     | 34.0   | 41.0   | 52.5    | 1.7 | 0.52      | 2.44                     |                        |
| 230928-726-HE              | 28/09/23    | 520                   | 33.7               | 120         | 3:00      | 0          | 24.9                 | 43.8     | 53.8     | 68.2    | 80    | 13.0     | 32.5   | 42.0   | 50.5    | 1.5 | 0.58      | 2.42                     |                        |
| 230915-076-HE              | 15/09/23    | 515                   | 33.7               | 90          | 3:15      | 1          | 26.4                 | 45.3     | 56.1     | 69.3    | 80    | 18.5     | 45.0   | 51.0   | 59.5    | 1.1 | 0.55      | 2.35                     |                        |
| 230829-365-HE              | 29/08/23    | 500                   | 33.5               | 105         | 2:45      | 1          | 24.6                 | 41.9     | 48.7     | 68.7    | 90    | 17.0     | 34.5   | 46.0   | 58.0    | 1.2 | 0.54      | 2.39                     |                        |
| 230818-643-HE              | 18/08/23    | 535                   | 33.5               | 105         | 2:45      | 1          | 25.1                 | 42.0     | 52.2     | 66.8    | 80    | 14.0     | 36.5   | 45.5   | 56.0    | 1.3 | 0.57      | 2.35                     |                        |
| 230731-091-HE              | 31/07/23    | 505                   | 33.6               | 105         | 2:30      | 1          | 24.1                 | 42.6     | 52.3     | 68.7    | 80    | 14.5     | 35.0   | 42.0   | 51.5    | 1.4 | 0.57      | 2.45                     |                        |
| 230719-439-HE              | 19/07/23    | 510                   | 33.8               | 105         | 2:45      | 1          | 25.3                 | 44.7     | 54.7     | 67.1    | 70    | 14.0     | 41.0   | 49.0   | 57.5    | 1.5 | 0.56      | 2.35                     |                        |
| 230704-729-HE              | 04/07/23    | 520                   | 33.6               | 105         | 2:30      | 0          | 22.9                 | 43.8     | 53.1     | 68.5    | 70    | 16.0     | 35.0   | 45.0   | 60.5    | 1.7 | 0.58      | 2.38                     |                        |
| 230617-001-HE              | 17/06/23    | 510                   | 33.6               | 105         | 3:00      | 1          | 22.0                 | 38.5     | 52.7     | 70.4    | 90    | 15.5     | 38.0   | 47.0   | 54.5    | 1.9 | 0.56      | 2.33                     |                        |
| 230515-608-HE              | 15/05/23    | 510                   | 34.1               | 135         | 3:30      | 1          | 22.2                 | 40.9     | 51.7     | 70.7    | 100   | 11.5     | 33.0   | 42.5   | 57.5    | 1.3 | 0.57      | 2.36                     |                        |
| 230502-180-HE              | 02/05/23    | 505                   | 33.8               | 105         | 3:00      | 1          | 21.2                 | 39.1     | 52.3     | 65.7    | 110   | 18.5     | 40.0   | 48.5   | 59.5    | 1.6 | 0.54      | 2.32                     |                        |
| 230421-499-HE              | 21/04/23    | 520                   | 33.7               | 120         | 3:30      | 0          | 21.4                 | 39.2     | 49.9     | 66.8    | 90    | 12.5     | 33.5   | 39.5   | 53.5    | 1.4 | 0.60      | 2.32                     |                        |
| 230402-983-HE              | 02/04/23    | 505                   | 33.6               | 135         | 3:15      | 1          | 22.4                 | 40.8     | 50.6     | 65.6    | 70    | 13.0     | 39.5   | 44.0   | 56.5    | 1.0 | 0.58      | 2.31                     |                        |
| 230323-333-HE              | 23/03/23    | 510                   | 34.0               | 120         | 3:00      | 1          | 24.2                 | 43.1     | 51.1     | 66.6    | 70    | 17.0     | 41.0   | 49.5   | 59.0    | 1.5 | 0.58      | 2.49                     |                        |
| 230309-656-HE              | 09/03/23    | 505                   | 33.7               | 135         | 3:00      | 2          | 22.7                 | 42.9     | 52.7     | 68.0    | 80    | 12.5     | 33.5   | 44.5   | 54.5    | 1.4 | 0.56      | 2.35                     |                        |
| 230217-807-HE              | 17/02/23    | 530                   | 34.0               | 120         | 3:00      | 1          | 22.9                 | 40.8     | 49.9     | 65.3    | 80    | 12.0     | 32.5   | 40.0   | 54.0    | 1.8 | 0.59      | 2.43                     |                        |
| 230203-221-HE              | 03/02/23    | 520                   | 34.2               | 105         | 3:15      | 1          | 21.8                 | 38.8     | 49.1     | 67.2    | 100   | 13.0     | 30.0   | 42.5   | 50.5    | 1.2 | 0.55      | 2.28                     |                        |
| 221231-210-HE              | 31/12/22    | 520                   | 33.3               | 105         | 3:00      | 1          | 22.3                 | 39.1     | 52.7     | 67.7    | 80    | 15.5     | 34.5   | 45.0   |         | 1.5 | 0.56      | 2.53                     |                        |
| 221223-708-HE              | 23/12/22    | 470                   | 33.2               | 150         | 3:45      | 1          | 22.5                 | 38.0     | 52.2     | 68.9    | 80    | 10.0     | 30.0   | 38.5   | 51.5    | 1.6 | 0.53      | 2.44                     |                        |
| 221202-581-HE              | 02/12/22    | 520                   | 33.3               | 135         | 3:15      | 1          | 21.9                 | 40.1     | 51.1     | 68.3    | 80    | 13.0     | 36.5   | 46.5   | 55.0    | 1.6 | 0.55      | 2.35                     |                        |

The above samples were tested as received in accordance with the current terms of accreditation and methods stated in NZS 3122:2009 with the exception of:

Chemical Analysis to ASTM C114-18

All concrete testing conducted in accordance with NZS 3112:1986.

Data reported as per requirements of NZS 3112:1986 & ASTM C114-18

Testing Error-Result Not Available

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*V. Lane*

Vincent Lane  
Works Chemist



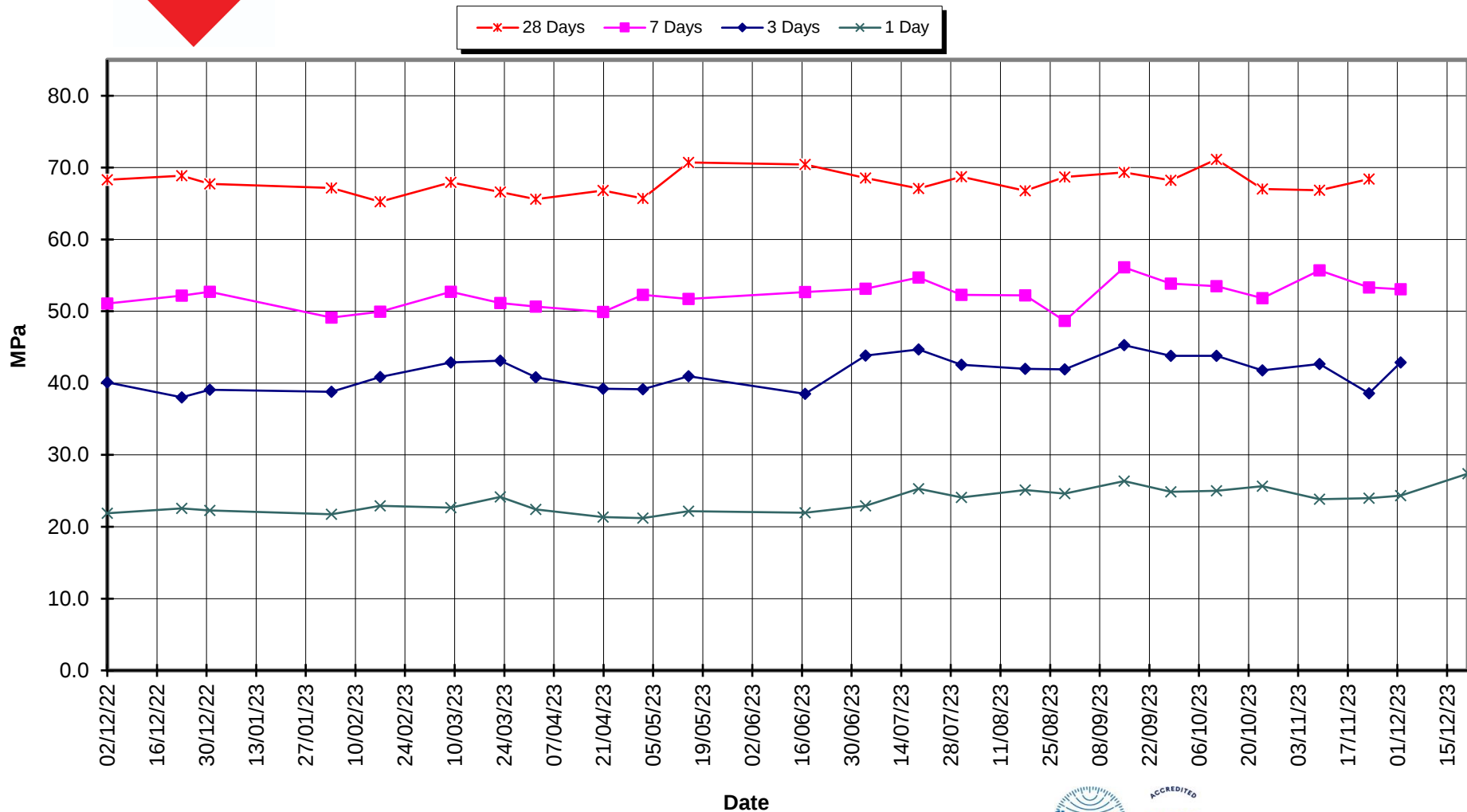
Portland Works, Portland, Whangarei 0178

Date issued: 29/12/23

Page 1 of 3



**EcoFast®**  
**Type HE Cement**  
**Compressive Strength ISO-CEN Mortar**





EcoFast®  
Type HE Cement



Compressive Strength Concrete

—x— 28 Days —■— 7 Days —◆— 3 Days —x— 1 Day —x— Slump

