Table 1. Variable inputs for 84 laboratory scale, 48 pilot scale and 36 commercial scale sample runs.

| **Variable Inputs** | | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Run** | **TCP (%)** | **SSG (%)** | **Screen size (mm)** | **Screen shape** | | **Water (%)** | **Particle size (%)** | | | | **Compaction pressure (MPa)** |
| **square** | **round** | **> 500 µm** | **250 - 500 µm** | **150 - 250 µm** | **0 - 150 µm** |
| 1 L | 12.5 | 12.25 | 0.85 | 1 | 0 | 26.5 | 30.9 | 22.8 | 15.6 | 35.8 | 69.39 |
| 2 L | 12.5 | 12.25 | 0.85 | 1 | 0 | 26.5 | 30.9 | 22.8 | 15.6 | 35.8 | 104.09 |
| 3 L | 12.5 | 12.25 | 0.85 | 1 | 0 | 26.5 | 30.9 | 22.8 | 15.6 | 35.8 | 138.78 |
| 4 L | 12.5 | 12.25 | 0.85 | 1 | 0 | 26.5 | 30.9 | 22.8 | 15.6 | 35.8 | 173.48 |
| 5 L | 17.5 | 8.75 | 0.85 | 1 | 0 | 26.5 | 23.8 | 19.0 | 20.3 | 35.9 | 69.39 |
| 6 L | 17.5 | 8.75 | 0.85 | 1 | 0 | 26.5 | 23.8 | 19.0 | 20.3 | 35.9 | 104.09 |
| 7 L | 17.5 | 8.75 | 0.85 | 1 | 0 | 26.5 | 23.8 | 19.0 | 20.3 | 35.9 | 138.78 |
| 8 L | 17.5 | 8.75 | 0.85 | 1 | 0 | 26.5 | 23.8 | 19.0 | 20.3 | 35.9 | 173.48 |
| 9 L | 15 | 14 | 0.85 | 1 | 0 | 17.4 | 26.3 | 22.4 | 15.4 | 36.6 | 69.39 |
| 10 L | 15 | 14 | 0.85 | 1 | 0 | 17.4 | 26.3 | 22.4 | 15.4 | 36.6 | 104.09 |
| 11 L | 15 | 14 | 0.85 | 1 | 0 | 17.4 | 26.3 | 22.4 | 15.4 | 36.6 | 138.78 |
| 12 L | 15 | 14 | 0.85 | 1 | 0 | 17.4 | 26.3 | 22.4 | 15.4 | 36.6 | 173.48 |
| 13 L | 15 | 10.5 | 0.85 | 1 | 0 | 20.5 | 21.9 | 21.2 | 12.7 | 43.6 | 69.39 |
| 14 L | 15 | 10.5 | 0.85 | 1 | 0 | 20.5 | 21.9 | 21.2 | 12.7 | 43.6 | 104.09 |
| 15 L | 15 | 10.5 | 0.85 | 1 | 0 | 20.5 | 21.9 | 21.2 | 12.7 | 43.6 | 138.78 |
| 16 L | 15 | 10.5 | 0.85 | 1 | 0 | 20.5 | 21.9 | 21.2 | 12.7 | 43.6 | 173.48 |
| 17 L | 20 | 14 | 0.85 | 1 | 0 | 14.6 | 26.3 | 20.4 | 10.8 | 42.6 | 69.39 |
| 18 L | 20 | 14 | 0.85 | 1 | 0 | 14.6 | 26.3 | 20.4 | 10.8 | 42.6 | 104.09 |
| 19 L | 20 | 14 | 0.85 | 1 | 0 | 14.6 | 26.3 | 20.4 | 10.8 | 42.6 | 138.78 |
| 20 L | 20 | 14 | 0.85 | 1 | 0 | 14.6 | 26.3 | 20.4 | 10.8 | 42.6 | 173.48 |
| 21 L | 20 | 7 | 0.85 | 1 | 0 | 26.5 | 23.4 | 20.6 | 13.8 | 41.7 | 69.39 |
| 22 L | 20 | 7 | 0.85 | 1 | 0 | 26.5 | 23.4 | 20.6 | 13.8 | 41.7 | 104.09 |
| 23 L | 20 | 7 | 0.85 | 1 | 0 | 26.5 | 23.4 | 20.6 | 13.8 | 41.7 | 138.78 |
| 24 L | 20 | 7 | 0.85 | 1 | 0 | 26.5 | 23.4 | 20.6 | 13.8 | 41.7 | 173.48 |
| 25 L | 15 | 10.5 | 0.85 | 1 | 0 | 19.8 | 23.8 | 19.4 | 12.7 | 44.8 | 69.39 |
| 26 L | 15 | 10.5 | 0.85 | 1 | 0 | 19.8 | 23.8 | 19.4 | 12.7 | 44.8 | 104.09 |
| 27 L | 15 | 10.5 | 0.85 | 1 | 0 | 19.8 | 23.8 | 19.4 | 12.7 | 44.8 | 138.78 |
| 28 L | 15 | 10.5 | 0.85 | 1 | 0 | 19.8 | 23.8 | 19.4 | 12.7 | 44.8 | 173.48 |
| 29 L | 12.5 | 8.75 | 0.85 | 1 | 0 | 26.5 | 22.2 | 23.6 | 14.2 | 39.7 | 69.39 |
| 30 L | 12.5 | 8.75 | 0.85 | 1 | 0 | 26.5 | 22.2 | 23.6 | 14.2 | 39.7 | 104.09 |
| 31 L | 12.5 | 8.75 | 0.85 | 1 | 0 | 26.5 | 22.2 | 23.6 | 14.2 | 39.7 | 138.78 |
| 32 L | 12.5 | 8.75 | 0.85 | 1 | 0 | 26.5 | 22.2 | 23.6 | 14.2 | 39.7 | 173.48 |
| 33 L | 15 | 14 | 0.85 | 1 | 0 | 17.4 | 29.0 | 20.3 | 17.4 | 32.6 | 69.39 |
| 34 L | 15 | 14 | 0.85 | 1 | 0 | 17.4 | 29.0 | 20.3 | 17.4 | 32.6 | 104.09 |
| 35 L | 15 | 14 | 0.85 | 1 | 0 | 17.4 | 29.0 | 20.3 | 17.4 | 32.6 | 138.78 |
| 36 L | 15 | 14 | 0.85 | 1 | 0 | 17.4 | 29.0 | 20.3 | 17.4 | 32.6 | 173.48 |
| 37 L | 10 | 10.5 | 0.85 | 1 | 0 | 26.5 | 24.5 | 18.9 | 13.7 | 42.8 | 69.39 |
| 38 L | 10 | 10.5 | 0.85 | 1 | 0 | 26.5 | 24.5 | 18.9 | 13.7 | 42.8 | 104.09 |
| 39 L | 10 | 10.5 | 0.85 | 1 | 0 | 26.5 | 24.5 | 18.9 | 13.7 | 42.8 | 138.78 |
| 40 L | 10 | 10.5 | 0.85 | 1 | 0 | 26.5 | 24.5 | 18.9 | 13.7 | 42.8 | 173.48 |
| 41 L | 10 | 7 | 0.85 | 1 | 0 | 24.0 | 20.3 | 24.8 | 13.6 | 41.3 | 69.39 |
| 42 L | 10 | 7 | 0.85 | 1 | 0 | 24.0 | 20.3 | 24.8 | 13.6 | 41.3 | 104.09 |
| 43 L | 10 | 7 | 0.85 | 1 | 0 | 24.0 | 20.3 | 24.8 | 13.6 | 41.3 | 138.78 |
| 44 L | 10 | 7 | 0.85 | 1 | 0 | 24.0 | 20.3 | 24.8 | 13.6 | 41.3 | 173.48 |
| 45 L | 20 | 10.5 | 0.85 | 1 | 0 | 16.6 | 22.3 | 23.1 | 15.0 | 39.3 | 69.39 |
| 46 L | 20 | 10.5 | 0.85 | 1 | 0 | 16.6 | 22.3 | 23.1 | 15.0 | 39.3 | 104.09 |
| 47 L | 20 | 10.5 | 0.85 | 1 | 0 | 16.6 | 22.3 | 23.1 | 15.0 | 39.3 | 138.78 |
| 48 L | 20 | 10.5 | 0.85 | 1 | 0 | 16.6 | 22.3 | 23.1 | 15.0 | 39.3 | 173.48 |
| 49 L | 20 | 10.5 | 0.85 | 1 | 0 | 17.2 | 28.0 | 21.3 | 10.4 | 40.2 | 69.39 |
| 50 L | 20 | 10.5 | 0.85 | 1 | 0 | 17.2 | 28.0 | 21.3 | 10.4 | 40.2 | 104.09 |
| 51 L | 20 | 10.5 | 0.85 | 1 | 0 | 17.2 | 28.0 | 21.3 | 10.4 | 40.2 | 138.78 |
| 52 L | 20 | 10.5 | 0.85 | 1 | 0 | 17.2 | 28.0 | 21.3 | 10.4 | 40.2 | 173.48 |
| 53 L | 10 | 14 | 0.85 | 1 | 0 | 26.5 | 28.4 | 17.1 | 11.9 | 41.9 | 69.39 |
| 54 L | 10 | 14 | 0.85 | 1 | 0 | 26.5 | 28.4 | 17.1 | 11.9 | 41.9 | 104.09 |
| 55 L | 10 | 14 | 0.85 | 1 | 0 | 26.5 | 28.4 | 17.1 | 11.9 | 41.9 | 138.78 |
| 56 L | 10 | 14 | 0.85 | 1 | 0 | 26.5 | 28.4 | 17.1 | 11.9 | 41.9 | 173.48 |
| 57 L | 20 | 14 | 1.04 | 0 | 1 | 17.2 | 29.1 | 25.5 | 8.2 | 36.7 | 69.39 |
| 58 L | 20 | 14 | 1.04 | 0 | 1 | 17.2 | 29.1 | 25.5 | 8.2 | 36.7 | 104.09 |
| 59 L | 20 | 14 | 1.04 | 0 | 1 | 17.2 | 29.1 | 25.5 | 8.2 | 36.7 | 138.78 |
| 60 L | 20 | 14 | 1.04 | 0 | 1 | 17.2 | 29.1 | 25.5 | 8.2 | 36.7 | 173.48 |
| 61 L | 20 | 14 | 0.85 | 1 | 0 | 17.8 | 33.9 | 22.5 | 6.7 | 36.4 | 69.39 |
| 62 L | 20 | 14 | 0.85 | 1 | 0 | 17.8 | 33.9 | 22.5 | 6.7 | 36.4 | 104.09 |
| 63 L | 20 | 14 | 0.85 | 1 | 0 | 17.8 | 33.9 | 22.5 | 6.7 | 36.4 | 138.78 |
| 64 L | 20 | 14 | 0.85 | 1 | 0 | 17.8 | 33.9 | 22.5 | 6.7 | 36.4 | 173.48 |
| 65 L | 20 | 14 | 0.85 | 1 | 0 | 26.4 | 21.1 | 22.9 | 11.8 | 44.1 | 69.39 |
| 66 L | 20 | 14 | 0.85 | 1 | 0 | 26.4 | 21.1 | 22.9 | 11.8 | 44.1 | 104.09 |
| 67 L | 20 | 14 | 0.85 | 1 | 0 | 26.4 | 21.1 | 22.9 | 11.8 | 44.1 | 138.78 |
| 68 L | 20 | 14 | 0.85 | 1 | 0 | 26.4 | 21.1 | 22.9 | 11.8 | 44.1 | 173.48 |
| 69 L | 20 | 14 | 0.85 | 1 | 0 | 25.2 | 22.4 | 23.7 | 11.0 | 42.5 | 69.39 |
| 70 L | 20 | 14 | 0.85 | 1 | 0 | 25.2 | 22.4 | 23.7 | 11.0 | 42.5 | 104.09 |
| 71 L | 20 | 14 | 0.85 | 1 | 0 | 25.2 | 22.4 | 23.7 | 11.0 | 42.5 | 138.78 |
| 72 L | 20 | 14 | 0.85 | 1 | 0 | 25.2 | 22.4 | 23.7 | 11.0 | 42.5 | 173.48 |
| 73 L | 20 | 14 | 1.04 | 0 | 1 | 24.4 | 24.5 | 19.6 | 10.9 | 44.5 | 69.39 |
| 74 L | 20 | 14 | 1.04 | 0 | 1 | 24.4 | 24.5 | 19.6 | 10.9 | 44.5 | 104.09 |
| 75 L | 20 | 14 | 1.04 | 0 | 1 | 24.4 | 24.5 | 19.6 | 10.9 | 44.5 | 138.78 |
| 76 L | 20 | 14 | 1.04 | 0 | 1 | 24.4 | 24.5 | 19.6 | 10.9 | 44.5 | 173.48 |
| 77 L | 20 | 14 | 0.69 | 0 | 1 | 24.1 | 5.3 | 28.2 | 20.5 | 45.2 | 69.39 |
| 78 L | 20 | 14 | 0.69 | 0 | 1 | 24.1 | 5.3 | 28.2 | 20.5 | 45.2 | 104.09 |
| 79 L | 20 | 14 | 0.69 | 0 | 1 | 24.1 | 5.3 | 28.2 | 20.5 | 45.2 | 138.78 |
| 80 L | 20 | 14 | 0.69 | 0 | 1 | 24.1 | 5.3 | 28.2 | 20.5 | 45.2 | 173.48 |
| 81 L | 20 | 14 | 0.69 | 0 | 1 | 18.3 | 9.3 | 34.1 | 12.0 | 44.5 | 69.39 |
| 82 L | 20 | 14 | 0.69 | 0 | 1 | 18.3 | 9.3 | 34.1 | 12.0 | 44.5 | 104.09 |
| 83 L | 20 | 14 | 0.69 | 0 | 1 | 18.3 | 9.3 | 34.1 | 12.0 | 44.5 | 138.78 |
| 84 L | 20 | 14 | 0.69 | 0 | 1 | 18.3 | 9.3 | 34.1 | 12.0 | 44.5 | 173.48 |
| 1 P | 23 | 14 | 0.81 | 0 | 1 | 16.5 | 34.1 | 31.4 | 8.1 | 26.2 | 69.39 |
| 2 P | 23 | 14 | 0.81 | 0 | 1 | 16.5 | 34.1 | 31.4 | 8.1 | 26.2 | 104.09 |
| 3 P | 23 | 14 | 0.81 | 0 | 1 | 16.5 | 34.1 | 31.4 | 8.1 | 26.2 | 138.78 |
| 4 P | 23 | 14 | 0.81 | 0 | 1 | 16.5 | 34.1 | 31.4 | 8.1 | 26.2 | 173.48 |
| 5 P | 23 | 14 | 0.81 | 0 | 1 | 16.5 | 33.9 | 23.7 | 10.0 | 31.7 | 69.39 |
| 6 P | 23 | 14 | 0.81 | 0 | 1 | 16.5 | 33.9 | 23.7 | 10.0 | 31.7 | 104.09 |
| 7 P | 23 | 14 | 0.81 | 0 | 1 | 16.5 | 33.9 | 23.7 | 10.0 | 31.7 | 138.78 |
| 8 P | 23 | 14 | 0.81 | 0 | 1 | 16.5 | 33.9 | 23.7 | 10.0 | 31.7 | 173.48 |
| 9 P | 23 | 14 | 0.81 | 0 | 1 | 16.5 | 36.7 | 24.4 | 8.4 | 30.3 | 69.39 |
| 10 P | 23 | 14 | 0.81 | 0 | 1 | 16.5 | 36.7 | 24.4 | 8.4 | 30.3 | 104.09 |
| 11 P | 23 | 14 | 0.81 | 0 | 1 | 16.5 | 36.7 | 24.4 | 8.4 | 30.3 | 138.78 |
| 12 P | 23 | 14 | 0.81 | 0 | 1 | 16.5 | 36.7 | 24.4 | 8.4 | 30.3 | 173.48 |
| 13 P | 23 | 14 | 0.81 | 0 | 1 | 16.5 | 25.8 | 34.2 | 11.5 | 28.2 | 69.39 |
| 14 P | 23 | 14 | 0.81 | 0 | 1 | 16.5 | 25.8 | 34.2 | 11.5 | 28.2 | 104.09 |
| 15 P | 23 | 14 | 0.81 | 0 | 1 | 16.5 | 25.8 | 34.2 | 11.5 | 28.2 | 138.78 |
| 16 P | 23 | 14 | 0.81 | 0 | 1 | 16.5 | 25.8 | 34.2 | 11.5 | 28.2 | 173.48 |
| 17 P | 23 | 14 | 0.81 | 0 | 1 | 16.5 | 21.2 | 30.6 | 12.2 | 35.3 | 69.39 |
| 18 P | 23 | 14 | 0.81 | 0 | 1 | 16.5 | 21.2 | 30.6 | 12.2 | 35.3 | 104.09 |
| 19 P | 23 | 14 | 0.81 | 0 | 1 | 16.5 | 21.2 | 30.6 | 12.2 | 35.3 | 138.78 |
| 20 P | 23 | 14 | 0.81 | 0 | 1 | 16.5 | 21.2 | 30.6 | 12.2 | 35.3 | 173.48 |
| 21 P | 23 | 14 | 0.81 | 0 | 1 | 16.5 | 29.8 | 28.0 | 10.0 | 32.0 | 69.39 |
| 22 P | 23 | 14 | 0.81 | 0 | 1 | 16.5 | 29.8 | 28.0 | 10.0 | 32.0 | 104.09 |
| 23 P | 23 | 14 | 0.81 | 0 | 1 | 16.5 | 29.8 | 28.0 | 10.0 | 32.0 | 138.78 |
| 24 P | 23 | 14 | 0.81 | 0 | 1 | 16.5 | 29.8 | 28.0 | 10.0 | 32.0 | 173.48 |
| 25 P | 23 | 14 | 0.81 | 0 | 1 | 16.5 | 19.1 | 30.4 | 13.4 | 36.7 | 69.39 |
| 26 P | 23 | 14 | 0.81 | 0 | 1 | 16.5 | 19.1 | 30.4 | 13.4 | 36.7 | 104.09 |
| 27 P | 23 | 14 | 0.81 | 0 | 1 | 16.5 | 19.1 | 30.4 | 13.4 | 36.7 | 138.78 |
| 28 P | 23 | 14 | 0.81 | 0 | 1 | 16.5 | 19.1 | 30.4 | 13.4 | 36.7 | 173.48 |
| 29 P | 23 | 14 | 0.81 | 0 | 1 | 16.5 | 26.9 | 28.3 | 10.7 | 33.0 | 69.39 |
| 30 P | 23 | 14 | 0.81 | 0 | 1 | 16.5 | 26.9 | 28.3 | 10.7 | 33.0 | 104.09 |
| 31 P | 23 | 14 | 0.81 | 0 | 1 | 16.5 | 26.9 | 28.3 | 10.7 | 33.0 | 138.78 |
| 32 P | 23 | 14 | 0.81 | 0 | 1 | 16.5 | 26.9 | 28.3 | 10.7 | 33.0 | 173.48 |
| 33 P | 23 | 14 | 1.04 | 0 | 1 | 16.5 | 29.8 | 26.6 | 11.1 | 32.1 | 69.39 |
| 34 P | 23 | 14 | 1.04 | 0 | 1 | 16.5 | 29.8 | 26.6 | 11.1 | 32.1 | 104.09 |
| 35 P | 23 | 14 | 1.04 | 0 | 1 | 16.5 | 29.8 | 26.6 | 11.1 | 32.1 | 138.78 |
| 36 P | 23 | 14 | 1.04 | 0 | 1 | 16.5 | 29.8 | 26.6 | 11.1 | 32.1 | 173.48 |
| 37 P | 23 | 14 | 1.04 | 0 | 1 | 16.5 | 15.8 | 30.2 | 14.3 | 39.2 | 69.39 |
| 38 P | 23 | 14 | 1.04 | 0 | 1 | 16.5 | 15.8 | 30.2 | 14.3 | 39.2 | 104.09 |
| 39 P | 23 | 14 | 1.04 | 0 | 1 | 16.5 | 15.8 | 30.2 | 14.3 | 39.2 | 138.78 |
| 40 P | 23 | 14 | 1.04 | 0 | 1 | 16.5 | 15.8 | 30.2 | 14.3 | 39.2 | 173.48 |
| 41 P | 23 | 14 | 0.69 | 0 | 1 | 16.5 | 22.2 | 35.6 | 10.6 | 31.1 | 69.39 |
| 42 P | 23 | 14 | 0.69 | 0 | 1 | 16.5 | 22.2 | 35.6 | 10.6 | 31.1 | 104.09 |
| 43 P | 23 | 14 | 0.69 | 0 | 1 | 16.5 | 22.2 | 35.6 | 10.6 | 31.1 | 138.78 |
| 44 P | 23 | 14 | 0.69 | 0 | 1 | 16.5 | 22.2 | 35.6 | 10.6 | 31.1 | 173.48 |
| 45 P | 23 | 14 | 0.69 | 0 | 1 | 16.5 | 9.3 | 33.7 | 14.8 | 41.9 | 69.39 |
| 46 P | 23 | 14 | 0.69 | 0 | 1 | 16.5 | 9.3 | 33.7 | 14.8 | 41.9 | 104.09 |
| 47 P | 23 | 14 | 0.69 | 0 | 1 | 16.5 | 9.3 | 33.7 | 14.8 | 41.9 | 138.78 |
| 48 P | 23 | 14 | 0.69 | 0 | 1 | 16.5 | 9.3 | 33.7 | 14.8 | 41.9 | 173.48 |
| 1 C | 23 | 14 | 0.69 | 0 | 1 | 16.5 | 12.4 | 32.1 | 14.3 | 40.6 | 69.39 |
| 2 C | 23 | 14 | 0.69 | 0 | 1 | 16.5 | 12.4 | 32.1 | 14.3 | 40.6 | 104.09 |
| 3 C | 23 | 14 | 0.69 | 0 | 1 | 16.5 | 12.4 | 32.1 | 14.3 | 40.6 | 138.78 |
| 4 C | 23 | 14 | 0.69 | 0 | 1 | 16.5 | 12.4 | 32.1 | 14.3 | 40.6 | 173.48 |
| 5 C | 23 | 14 | 0.69 | 0 | 1 | 16.5 | 14.2 | 23.7 | 14.7 | 47.1 | 69.39 |
| 6 C | 23 | 14 | 0.69 | 0 | 1 | 16.5 | 14.2 | 23.7 | 14.7 | 47.1 | 104.09 |
| 7 C | 23 | 14 | 0.69 | 0 | 1 | 16.5 | 14.2 | 23.7 | 14.7 | 47.1 | 138.78 |
| 8 C | 23 | 14 | 0.69 | 0 | 1 | 16.5 | 14.2 | 23.7 | 14.7 | 47.1 | 173.48 |
| 9 C | 23 | 14 | 0.69 | 0 | 1 | 16.5 | 9.1 | 29.4 | 14.9 | 46.3 | 69.39 |
| 10 C | 23 | 14 | 0.69 | 0 | 1 | 16.5 | 9.1 | 29.4 | 14.9 | 46.3 | 104.09 |
| 11 C | 23 | 14 | 0.69 | 0 | 1 | 16.5 | 9.1 | 29.4 | 14.9 | 46.3 | 138.78 |
| 12 C | 23 | 14 | 0.69 | 0 | 1 | 16.5 | 9.1 | 29.4 | 14.9 | 46.3 | 173.48 |
| 13 C | 23 | 14 | 0.69 | 0 | 1 | 16.5 | 2.6 | 22.1 | 20.1 | 54.8 | 69.39 |
| 14 C | 23 | 14 | 0.69 | 0 | 1 | 16.5 | 2.6 | 22.1 | 20.1 | 54.8 | 104.09 |
| 15 C | 23 | 14 | 0.69 | 0 | 1 | 16.5 | 2.6 | 22.1 | 20.1 | 54.8 | 138.78 |
| 16 C | 23 | 14 | 0.69 | 0 | 1 | 16.5 | 2.6 | 22.1 | 20.1 | 54.8 | 173.48 |
| 17 C | 23 | 14 | 1.04 | 0 | 1 | 16.5 | 20.0 | 28.7 | 15.4 | 35.7 | 69.39 |
| 18 C | 23 | 14 | 1.04 | 0 | 1 | 16.5 | 20.0 | 28.7 | 15.4 | 35.7 | 104.09 |
| 19 C | 23 | 14 | 1.04 | 0 | 1 | 16.5 | 20.0 | 28.7 | 15.4 | 35.7 | 138.78 |
| 20 C | 23 | 14 | 1.04 | 0 | 1 | 16.5 | 20.0 | 28.7 | 15.4 | 35.7 | 173.48 |
| 21 C | 23 | 14 | 0.84 | 0 | 1 | 16.5 | 19.0 | 28.5 | 13.0 | 38.9 | 69.39 |
| 22 C | 23 | 14 | 0.84 | 0 | 1 | 16.5 | 19.0 | 28.5 | 13.0 | 38.9 | 104.09 |
| 23 C | 23 | 14 | 0.84 | 0 | 1 | 16.5 | 19.0 | 28.5 | 13.0 | 38.9 | 138.78 |
| 24 C | 23 | 14 | 0.84 | 0 | 1 | 16.5 | 19.0 | 28.5 | 13.0 | 38.9 | 173.48 |
| 25 C | 23 | 14 | 0.69 | 0 | 1 | 15.8 | 8.9 | 34.7 | 21.9 | 34.6 | 69.39 |
| 26 C | 23 | 14 | 0.69 | 0 | 1 | 15.8 | 8.9 | 34.7 | 21.9 | 34.6 | 104.09 |
| 27 C | 23 | 14 | 0.69 | 0 | 1 | 15.8 | 8.9 | 34.7 | 21.9 | 34.6 | 138.78 |
| 28 C | 23 | 14 | 0.69 | 0 | 1 | 15.8 | 8.9 | 34.7 | 21.9 | 34.6 | 173.48 |
| 29 C | 23 | 14 | 0.69 | 0 | 1 | 15.8 | 5.9 | 33.4 | 20.5 | 40.2 | 69.39 |
| 30 C | 23 | 14 | 0.69 | 0 | 1 | 15.8 | 5.9 | 33.4 | 20.5 | 40.2 | 104.09 |
| 31 C | 23 | 14 | 0.69 | 0 | 1 | 15.8 | 5.9 | 33.4 | 20.5 | 40.2 | 138.78 |
| 32 C | 23 | 14 | 0.69 | 0 | 1 | 15.8 | 5.9 | 33.4 | 20.5 | 40.2 | 173.48 |
| 33 C | 23 | 14 | 0.69 | 0 | 1 | 15.8 | 11.1 | 41.7 | 15.8 | 31.4 | 69.39 |
| 34 C | 23 | 14 | 0.69 | 0 | 1 | 15.8 | 11.1 | 41.7 | 15.8 | 31.4 | 104.09 |
| 35 C | 23 | 14 | 0.69 | 0 | 1 | 15.8 | 11.1 | 41.7 | 15.8 | 31.4 | 138.78 |
| 36 C | 23 | 14 | 0.69 | 0 | 1 | 15.8 | 11.1 | 41.7 | 15.8 | 31.4 | 173.48 |

L Laboratory scale sample runs

P Pilot scale sample runs

C Commercial scale sample runs

TCP – tricalcium phosphate

SSG – sodium starch glycollate

Table 2. Analyzed responses for for 84 laboratory scale, 48 pilot scale and 36 commercial scale sample runs.

| **Responses** | | | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Run** | **Ha (mm)** | **Hb (mm)** | **Hc (mm)** | **Dout (mm)** | **σin (N/mm2)** | **σout (N/mm2)** | **Wc (Nm)** | **Wd (Nm)** | **Wn (Nm)** | **IAR (%)** | **CAR (%)** | **VSR (%)** |
| 1 L | 3.49 | 3.80 | 3.23 | 5.99 | 0.84 | 0.82 | 1.13 | -0.11 | 1.02 | 12.29 | 14.94 | 15.45 |
| 2 L | 2.55 | 2.87 | 2.93 | 6.01 | 1.51 | 1.47 | 1.43 | -0.20 | 1.22 | 14.27 | 16.94 | 17.72 |
| 3 L | 2.47 | 2.82 | 2.88 | 6.02 | 2.12 | 2.07 | 1.94 | -0.34 | 1.60 | 16.11 | 16.79 | 16.66 |
| 4 L | 2.47 | 2.87 | 2.88 | 6.00 | 2.56 | 2.54 | 2.51 | -0.50 | 2.01 | 9.68 | 11.02 | 11.39 |
| 5 L | 2.86 | 3.14 | 3.18 | 6.01 | 0.71 | 0.70 | 0.88 | -0.11 | 0.77 | 11.68 | 12.26 | 12.89 |
| 6 L | 2.64 | 2.95 | 2.97 | 6.02 | 1.31 | 1.30 | 1.36 | -0.21 | 1.15 | 14.12 | 14.40 | 15.16 |
| 7 L | 2.43 | 2.78 | 2.78 | 6.02 | 1.64 | 1.63 | 1.79 | -0.34 | 1.45 | 16.98 | 17.47 | 18.00 |
| 8 L | 2.31 | 2.70 | 2.72 | 6.01 | 2.37 | 2.35 | 2.22 | -0.50 | 1.72 | 9.44 | 9.13 | 10.10 |
| 9 L | 3.04 | 3.32 | 3.32 | 6.03 | 0.72 | 0.71 | 0.92 | -0.11 | 0.81 | 11.91 | 13.06 | 13.94 |
| 10 L | 2.61 | 2.92 | 2.95 | 6.02 | 1.34 | 1.33 | 1.36 | -0.21 | 1.15 | 13.88 | 13.58 | 13.96 |
| 11 L | 2.47 | 2.81 | 2.80 | 6.01 | 1.81 | 1.85 | 1.83 | -0.34 | 1.49 | 13.59 | 17.36 | 18.01 |
| 12 L | 2.53 | 2.87 | 2.97 | 6.02 | 1.91 | 1.84 | 1.84 | -0.34 | 1.50 | 8.96 | 9.10 | 9.95 |
| 13 L | 2.98 | 3.25 | 3.25 | 6.02 | 0.82 | 0.81 | 0.93 | -0.11 | 0.82 | 11.28 | 11.96 | 12.20 |
| 14 L | 2.65 | 2.95 | 2.97 | 6.01 | 1.33 | 1.32 | 1.40 | -0.21 | 1.19 | 13.62 | 13.14 | 13.14 |
| 15 L | 2.53 | 2.88 | 2.87 | 6.00 | 2.00 | 2.01 | 1.88 | -0.33 | 1.55 | 13.44 | 14.04 | 14.04 |
| 16 L | 2.48 | 2.82 | 2.83 | 6.00 | 2.02 | 2.01 | 1.86 | -0.34 | 1.52 | 9.62 | 10.09 | 9.97 |
| 17 L | 2.79 | 3.05 | 3.07 | 6.00 | 0.47 | 0.47 | 0.77 | -0.11 | 0.66 | 11.74 | 13.88 | 14.01 |
| 18 L | 2.59 | 2.89 | 2.95 | 6.00 | 0.87 | 0.85 | 1.23 | -0.21 | 1.02 | 13.85 | 13.69 | 14.07 |
| 19 L | 2.45 | 2.79 | 2.78 | 6.01 | 1.32 | 1.32 | 1.67 | -0.34 | 1.34 | 15.96 | 17.01 | 17.92 |
| 20 L | 2.31 | 2.68 | 2.70 | 6.02 | 1.80 | 1.77 | 2.11 | -0.50 | 1.61 | 9.75 | 8.54 | 8.42 |
| 21 L | 2.79 | 3.07 | 3.03 | 6.00 | 0.47 | 0.48 | 0.83 | -0.11 | 0.72 | 11.97 | 12.89 | 13.01 |
| 22 L | 2.57 | 2.88 | 2.90 | 6.00 | 0.87 | 0.87 | 1.32 | -0.21 | 1.10 | 13.91 | 16.34 | 16.73 |
| 23 L | 2.42 | 2.76 | 2.82 | 6.01 | 1.33 | 1.30 | 1.80 | -0.34 | 1.46 | 16.06 | 15.95 | 16.86 |
| 24 L | 2.34 | 2.72 | 2.72 | 6.02 | 1.77 | 1.76 | 2.27 | -0.50 | 1.77 | 9.55 | 10.68 | 10.56 |
| 25 L | 2.83 | 3.10 | 3.13 | 6.00 | 0.68 | 0.68 | 0.88 | -0.11 | 0.76 | 11.65 | 11.93 | 12.05 |
| 26 L | 2.58 | 2.88 | 2.88 | 6.00 | 1.27 | 1.26 | 1.36 | -0.21 | 1.15 | 13.77 | 13.86 | 14.24 |
| 27 L | 2.46 | 2.80 | 2.80 | 6.01 | 1.81 | 1.80 | 1.87 | -0.34 | 1.53 | 15.79 | 16.52 | 17.43 |
| 28 L | 2.36 | 2.73 | 2.75 | 6.02 | 2.47 | 2.45 | 2.35 | -0.50 | 1.85 | 9.56 | 10.26 | 9.28 |
| 29 L | 2.84 | 3.11 | 3.13 | 5.97 | 0.84 | 0.84 | 0.95 | -0.11 | 0.84 | 11.60 | 12.18 | 11.81 |
| 30 L | 2.63 | 2.93 | 2.95 | 5.99 | 1.55 | 1.55 | 1.51 | -0.21 | 1.30 | 13.70 | 14.45 | 14.07 |
| 31 L | 2.49 | 2.83 | 2.85 | 5.99 | 2.09 | 2.08 | 2.02 | -0.34 | 1.68 | 15.96 | 17.70 | 17.05 |
| 32 L | 2.36 | 2.74 | 2.78 | 5.98 | 2.64 | 2.61 | 2.49 | -0.50 | 1.98 | 12.49 | 11.12 | 11.37 |
| 33 L | 2.77 | 3.12 | 3.08 | 6.01 | 0.61 | 0.62 | 0.84 | -0.11 | 0.72 | 12.01 | 12.70 | 12.83 |
| 34 L | 2.53 | 2.83 | 2.85 | 6.00 | 1.10 | 1.09 | 1.27 | -0.21 | 1.06 | 14.07 | 16.20 | 16.72 |
| 35 L | 2.41 | 2.75 | 2.80 | 6.01 | 1.56 | 1.53 | 1.76 | -0.34 | 1.42 | 16.15 | 17.17 | 17.56 |
| 36 L | 2.32 | 2.69 | 2.72 | 6.01 | 2.10 | 2.08 | 2.21 | -0.50 | 1.71 | 9.86 | 10.81 | 10.93 |
| 37 L | 2.81 | 3.09 | 3.12 | 6.00 | 0.89 | 0.88 | 0.97 | -0.11 | 0.86 | 11.97 | 16.37 | 16.37 |
| 38 L | 2.56 | 2.87 | 2.98 | 6.00 | 1.64 | 1.58 | 1.49 | -0.21 | 1.29 | 16.25 | 16.05 | 16.05 |
| 39 L | 2.44 | 2.79 | 2.80 | 4.02 | 2.37 | 2.36 | 2.00 | -0.34 | 1.66 | 10.04 | 9.34 | 9.46 |
| 40 L | 2.34 | 2.72 | 2.72 | 6.00 | 3.08 | 3.09 | 2.46 | -0.50 | 1.96 | 12.00 | 12.54 | 12.42 |
| 41 L | 2.87 | 3.15 | 3.13 | 6.00 | 1.00 | 1.00 | 1.08 | -0.11 | 0.97 | 14.26 | 15.45 | 16.35 |
| 42 L | 2.61 | 2.92 | 2.93 | 6.00 | 1.93 | 1.92 | 1.65 | -0.21 | 1.44 | 16.12 | 16.09 | 16.86 |
| 43 L | 2.44 | 2.79 | 2.82 | 6.02 | 2.71 | 2.68 | 2.19 | -0.34 | 1.85 | 9.86 | 10.67 | 10.79 |
| 44 L | 2.38 | 2.77 | 2.77 | 6.02 | 3.08 | 3.07 | 2.68 | -0.51 | 2.18 | 12.22 | 13.63 | 14.01 |
| 45 L | 2.74 | 3.01 | 3.03 | 6.00 | 0.63 | 0.63 | 0.77 | -0.11 | 0.66 | 14.38 | 13.85 | 14.36 |
| 46 L | 2.52 | 2.83 | 2.87 | 6.01 | 0.97 | 0.96 | 1.23 | -0.21 | 1.02 | 16.52 | 16.60 | 16.86 |
| 47 L | 2.40 | 2.75 | 2.73 | 6.01 | 1.55 | 1.55 | 1.72 | -0.34 | 1.39 | 10.27 | 10.76 | 10.39 |
| 48 L | 2.30 | 2.68 | 2.68 | 6.01 | 1.87 | 1.87 | 2.17 | -0.50 | 1.67 | 11.68 | 13.15 | 12.40 |
| 49 L | 2.72 | 3.00 | 3.02 | 5.99 | 0.58 | 0.58 | 0.76 | -0.11 | 0.65 | 13.90 | 15.01 | 14.25 |
| 50 L | 2.56 | 2.86 | 2.90 | 5.98 | 1.01 | 1.00 | 1.23 | -0.21 | 1.02 | 17.12 | 17.19 | 16.41 |
| 51 L | 2.42 | 2.76 | 2.78 | 5.98 | 1.42 | 1.42 | 1.70 | -0.34 | 1.36 | 9.86 | 10.84 | 10.59 |
| 52 L | 2.26 | 2.65 | 2.65 | 5.98 | 1.91 | 1.92 | 2.18 | -0.54 | 1.64 | 12.18 | 13.40 | 13.40 |
| 53 L | 2.75 | 3.02 | 3.05 | 5.99 | 0.81 | 0.80 | 0.87 | -0.11 | 0.76 | 14.62 | 14.94 | 14.30 |
| 54 L | 2.50 | 2.80 | 2.83 | 6.00 | 1.50 | 1.49 | 1.38 | -0.21 | 1.17 | 16.44 | 16.67 | 16.03 |
| 55 L | 2.39 | 2.74 | 2.75 | 5.98 | 2.01 | 2.01 | 1.87 | -0.34 | 1.53 | 10.51 | 10.81 | 11.06 |
| 56 L | 2.34 | 2.73 | 2.73 | 5.98 | 2.70 | 2.70 | 2.36 | -0.51 | 1.86 | 12.96 | 13.91 | 14.29 |
| 57 L | 2.56 | 2.83 | 2.83 | 6.01 | 1.23 | 1.22 | 0.86 | -0.10 | 0.76 | 15.24 | 14.55 | 14.29 |
| 58 L | 2.37 | 2.68 | 2.70 | 6.01 | 2.42 | 2.39 | 1.39 | -0.19 | 1.20 | 17.90 | 16.59 | 16.33 |
| 59 L | 2.21 | 2.55 | 2.53 | 5.99 | 3.68 | 3.70 | 1.90 | -0.32 | 1.58 | 10.11 | 9.42 | 8.69 |
| 60 L | 2.09 | 2.46 | 2.43 | 5.99 | 4.53 | 4.58 | 2.27 | -0.48 | 1.79 | 12.36 | 12.11 | 11.49 |
| 61 L | 2.59 | 2.85 | 2.83 | 5.98 | 1.38 | 1.39 | 0.90 | -0.10 | 0.80 | 14.59 | 14.84 | 13.70 |
| 62 L | 2.36 | 2.66 | 2.65 | 5.98 | 2.48 | 2.49 | 1.38 | -0.19 | 1.18 | 17.04 | 15.62 | 14.46 |
| 63 L | 2.23 | 2.56 | 2.57 | 5.97 | 3.70 | 3.71 | 1.91 | -0.32 | 1.59 | 10.09 | 9.84 | 10.09 |
| 64 L | 2.15 | 2.51 | 2.48 | 5.97 | 4.57 | 4.65 | 2.32 | -0.48 | 1.84 | 12.40 | 11.66 | 11.66 |
| 65 L | 2.63 | 2.89 | 2.88 | 6.01 | 1.57 | 1.57 | 0.94 | -0.10 | 0.84 | 14.63 | 14.30 | 14.56 |
| 66 L | 2.37 | 2.67 | 2.65 | 6.00 | 2.80 | 2.82 | 1.47 | -0.19 | 1.28 | 16.43 | 16.55 | 16.68 |
| 67 L | 2.25 | 2.57 | 2.57 | 6.01 | 4.11 | 4.12 | 1.99 | -0.32 | 1.67 | 10.10 | 9.00 | 9.12 |
| 68 L | 2.23 | 2.60 | 2.60 | 6.00 | 5.50 | 5.49 | 2.53 | -0.48 | 2.05 | 12.49 | 11.35 | 11.60 |
| 69 L | 2.66 | 2.93 | 2.90 | 6.00 | 1.51 | 1.52 | 0.95 | -0.11 | 0.84 | 14.56 | 13.81 | 13.81 |
| 70 L | 2.34 | 2.63 | 2.60 | 6.01 | 2.75 | 2.77 | 1.47 | -0.19 | 1.28 | 17.07 | 17.07 | 17.07 |
| 71 L | 2.24 | 2.57 | 2.55 | 6.00 | 4.01 | 4.04 | 1.97 | -0.32 | 1.66 | 9.96 | 9.32 | 10.17 |
| 72 L | 2.12 | 2.48 | 2.48 | 6.00 | 5.11 | 5.12 | 2.44 | -0.48 | 1.96 | 12.26 | 11.53 | 12.28 |
| 73 L | 2.59 | 2.85 | 2.83 | 6.02 | 1.50 | 1.51 | 0.89 | -0.10 | 0.79 | 14.64 | 14.47 | 14.47 |
| 74 L | 2.38 | 2.67 | 2.65 | 6.02 | 2.82 | 2.83 | 1.44 | -0.19 | 1.25 | 18.08 | 17.36 | 17.36 |
| 75 L | 2.24 | 2.57 | 2.57 | 6.00 | 3.94 | 3.94 | 1.94 | -0.32 | 1.62 | 10.02 | 9.41 | 10.14 |
| 76 L | 2.10 | 2.48 | 2.47 | 6.00 | 4.95 | 4.97 | 2.41 | -0.52 | 1.89 | 12.46 | 11.76 | 11.88 |
| 77 L | 2.57 | 2.83 | 2.82 | 6.02 | 1.59 | 1.59 | 0.88 | -0.10 | 0.78 | 14.70 | 13.59 | 14.98 |
| 78 L | 2.36 | 2.65 | 2.63 | 6.00 | 2.92 | 2.94 | 1.42 | -0.19 | 1.22 | 17.12 | 16.82 | 17.60 |
| 79 L | 2.25 | 2.57 | 2.55 | 6.04 | 4.30 | 4.32 | 1.94 | -0.32 | 1.62 | 10.82 | 10.19 | 9.46 |
| 80 L | 2.14 | 2.51 | 2.50 | 6.02 | 5.53 | 5.53 | 2.40 | -0.48 | 1.92 | 15.64 | 11.58 | 10.84 |
| 81 L | 2.54 | 2.82 | 2.80 | 5.98 | 1.51 | 1.52 | 0.87 | -0.10 | 0.76 | 15.16 | 14.70 | 13.94 |
| 82 L | 2.36 | 2.73 | 2.63 | 5.98 | 2.67 | 2.78 | 1.40 | -0.20 | 1.20 | 18.89 | 18.11 | 16.93 |
| 83 L | 2.25 | 2.59 | 2.58 | 5.98 | 3.97 | 4.00 | 1.92 | -0.32 | 1.60 | 9.55 | 7.76 | 6.81 |
| 84 L | 2.06 | 2.45 | 2.43 | 5.97 | 5.27 | 5.33 | 2.37 | -0.52 | 1.84 | 11.60 | 12.53 | 11.91 |
| 1 P | 2.64 | 2.90 | 2.85 | 5.97 | 2.04 | 2.08 | 1.16 | -0.10 | 1.05 | 13.25 | 11.92 | 13.30 |
| 2 P | 2.38 | 2.66 | 2.68 | 5.98 | 3.13 | 3.12 | 1.74 | -0.19 | 1.56 | 16.33 | 15.20 | 14.24 |
| 3 P | 2.31 | 2.61 | 2.58 | 6.04 | 3.96 | 3.99 | 2.34 | -0.30 | 2.04 | 8.84 | 7.45 | 6.86 |
| 4 P | 2.15 | 2.50 | 2.48 | 5.98 | 4.90 | 4.97 | 2.96 | -0.46 | 2.50 | 11.25 | 12.38 | 14.01 |
| 5 P | 2.73 | 2.97 | 2.93 | 5.98 | 1.53 | 1.56 | 1.03 | -0.10 | 0.93 | 13.37 | 11.98 | 11.23 |
| 6 P | 2.43 | 2.71 | 2.73 | 6.04 | 2.68 | 2.63 | 1.63 | -0.18 | 1.45 | 15.56 | 14.33 | 14.07 |
| 7 P | 2.29 | 2.59 | 2.56 | 5.98 | 3.60 | 3.66 | 2.22 | -0.29 | 1.92 | 8.88 | 7.78 | 8.50 |
| 8 P | 2.19 | 2.53 | 2.50 | 5.99 | 4.69 | 4.74 | 2.74 | -0.43 | 2.31 | 11.24 | 9.92 | 11.02 |
| 9 P | 2.74 | 2.98 | 2.95 | 6.02 | 1.45 | 1.46 | 1.05 | -0.10 | 0.95 | 13.63 | 12.53 | 13.28 |
| 10 P | 2.46 | 2.73 | 2.70 | 6.03 | 2.60 | 2.62 | 1.66 | -0.18 | 1.48 | 15.58 | 14.25 | 14.88 |
| 11 P | 2.25 | 2.56 | 2.53 | 6.02 | 3.60 | 3.62 | 2.16 | -0.30 | 1.86 | 8.78 | 7.76 | 8.24 |
| 12 P | 2.19 | 2.53 | 2.50 | 6.02 | 4.53 | 4.57 | 2.75 | -0.44 | 2.32 | 11.29 | 10.23 | 10.72 |
| 13 P | 2.80 | 3.05 | 3.02 | 6.01 | 1.63 | 1.64 | 1.18 | -0.10 | 1.08 | 13.54 | 11.63 | 12.00 |
| 14 P | 2.45 | 2.73 | 2.70 | 6.01 | 2.68 | 2.70 | 1.78 | -0.18 | 1.60 | 15.35 | 15.02 | 16.04 |
| 15 P | 2.30 | 2.61 | 2.57 | 6.01 | 3.81 | 3.86 | 2.47 | -0.29 | 2.17 | 8.96 | 8.41 | 8.41 |
| 16 P | 2.22 | 2.56 | 2.55 | 6.03 | 4.81 | 4.81 | 3.02 | -0.43 | 2.60 | 11.07 | 9.83 | 10.07 |
| 17 P | 2.72 | 2.96 | 2.95 | 6.00 | 1.62 | 1.63 | 1.03 | -0.10 | 0.94 | 13.88 | 11.99 | 11.99 |
| 18 P | 2.50 | 2.78 | 2.75 | 6.01 | 2.68 | 2.71 | 1.60 | -0.18 | 1.42 | 15.66 | 13.59 | 14.86 |
| 19 P | 2.23 | 2.54 | 2.50 | 6.00 | 3.87 | 3.93 | 2.16 | -0.29 | 1.87 | 9.07 | 9.61 | 8.40 |
| 20 P | 2.17 | 2.51 | 2.47 | 6.03 | 4.98 | 5.05 | 2.70 | -0.43 | 2.27 | 11.53 | 10.08 | 9.53 |
| 21 P | 2.71 | 2.95 | 2.97 | 5.97 | 1.62 | 1.62 | 1.04 | -0.10 | 0.94 | 13.90 | 11.94 | 11.29 |
| 22 P | 2.42 | 2.70 | 2.66 | 5.99 | 2.70 | 2.75 | 1.62 | -0.18 | 1.44 | 16.20 | 16.20 | 15.14 |
| 23 P | 2.24 | 2.56 | 2.51 | 5.98 | 3.89 | 3.97 | 2.15 | -0.29 | 1.86 | 10.96 | 8.07 | 8.43 |
| 24 P | 2.12 | 2.46 | 2.46 | 5.97 | 4.78 | 4.80 | 2.73 | -0.43 | 2.30 | 11.84 | 10.23 | 10.96 |
| 25 P | 2.62 | 2.91 | 2.83 | 6.01 | 1.61 | 1.65 | 0.95 | -0.09 | 0.86 | 13.68 | 12.47 | 15.24 |
| 26 P | 2.42 | 2.71 | 2.67 | 6.02 | 2.50 | 2.52 | 1.52 | -0.18 | 1.33 | 16.13 | 15.51 | 16.42 |
| 27 P | 2.28 | 2.59 | 2.57 | 6.07 | 3.53 | 3.53 | 2.09 | -0.29 | 1.79 | 9.24 | 8.12 | 8.00 |
| 28 P | 2.14 | 2.48 | 2.47 | 6.02 | 4.82 | 4.83 | 2.61 | -0.43 | 2.18 | 11.74 | 10.02 | 10.39 |
| 29 P | 2.70 | 2.95 | 2.92 | 6.00 | 1.62 | 1.64 | 1.01 | -0.09 | 0.92 | 13.71 | 12.42 | 12.05 |
| 30 P | 2.39 | 2.67 | 2.63 | 6.01 | 2.59 | 2.63 | 1.53 | -0.18 | 1.35 | 16.50 | 15.35 | 14.78 |
| 31 P | 2.27 | 2.58 | 2.55 | 5.99 | 3.88 | 3.93 | 2.15 | -0.29 | 1.86 | 9.46 | 9.07 | 8.83 |
| 32 P | 2.11 | 2.46 | 2.44 | 5.99 | 5.14 | 5.20 | 2.68 | -0.43 | 2.24 | 11.78 | 9.52 | 9.52 |
| 33 P | 2.64 | 2.89 | 2.88 | 5.99 | 1.74 | 1.74 | 1.09 | -0.09 | 0.99 | 13.57 | 11.78 | 11.40 |
| 34 P | 2.42 | 2.70 | 2.65 | 6.00 | 2.66 | 2.71 | 1.65 | -0.18 | 1.47 | 16.33 | 14.38 | 13.62 |
| 35 P | 2.33 | 2.64 | 2.60 | 5.99 | 3.75 | 3.82 | 2.28 | -0.29 | 1.99 | 9.33 | 8.24 | 6.33 |
| 36 P | 2.11 | 2.46 | 2.42 | 5.98 | 4.89 | 4.99 | 2.79 | -0.43 | 2.36 | 11.89 | 10.52 | 8.92 |
| 37 P | 2.65 | 2.90 | 2.87 | 5.95 | 1.59 | 1.62 | 1.02 | -0.09 | 0.93 | 14.05 | 13.04 | 12.17 |
| 38 P | 2.44 | 2.73 | 2.70 | 5.96 | 2.63 | 2.68 | 1.61 | -0.18 | 1.43 | 16.47 | 15.23 | 13.82 |
| 39 P | 2.27 | 2.59 | 2.57 | 5.98 | 3.91 | 3.96 | 2.15 | -0.30 | 1.85 | 9.59 | 10.08 | 9.47 |
| 40 P | 2.13 | 2.48 | 2.45 | 5.96 | 5.10 | 5.19 | 2.71 | -0.43 | 2.28 | 12.08 | 9.16 | 8.67 |
| 41 P | 2.60 | 2.85 | 2.87 | 5.98 | 1.66 | 1.66 | 1.04 | -0.09 | 0.95 | 14.35 | 13.32 | 13.07 |
| 42 P | 2.37 | 2.65 | 2.58 | 5.99 | 2.77 | 2.85 | 1.58 | -0.18 | 1.40 | 16.56 | 15.09 | 14.58 |
| 43 P | 2.21 | 2.52 | 2.50 | 5.99 | 3.90 | 3.94 | 2.11 | -0.29 | 1.81 | 12.14 | 9.90 | 9.78 |
| 44 P | 2.13 | 2.48 | 2.45 | 5.99 | 5.02 | 5.09 | 2.69 | -0.43 | 2.26 | 12.63 | 11.04 | 11.29 |
| 45 P | 2.59 | 2.91 | 2.85 | 6.00 | 1.55 | 1.58 | 0.94 | -0.09 | 0.84 | 15.02 | 12.97 | 12.97 |
| 46 P | 2.37 | 2.67 | 2.63 | 6.01 | 2.70 | 2.74 | 1.52 | -0.19 | 1.32 | 16.62 | 15.09 | 15.34 |
| 47 P | 2.20 | 2.53 | 2.48 | 6.00 | 3.93 | 4.00 | 2.01 | -0.29 | 1.72 | 16.04 | 13.80 | 13.17 |
| 48 P | 2.16 | 2.52 | 2.48 | 6.01 | 5.13 | 5.19 | 2.66 | -0.43 | 2.23 | 15.21 | 15.07 | 14.94 |
| 1 C | 2.46 | 2.86 | 2.80 | 5.98 | 0.57 | 0.58 | 0.82 | -0.10 | 0.71 | 17.73 | 17.08 | 16.95 |
| 2 C | 2.26 | 2.60 | 2.60 | 6.00 | 1.26 | 1.27 | 1.31 | -0.20 | 1.11 | 20.54 | 19.68 | 19.15 |
| 3 C | 2.12 | 2.50 | 2.48 | 6.00 | 1.87 | 1.88 | 1.72 | -0.32 | 1.40 | 19.56 | 9.96 | 8.87 |
| 4 C | 2.02 | 2.43 | 2.42 | 5.99 | 2.47 | 2.49 | 2.11 | -0.48 | 1.63 | 16.06 | 11.73 | 10.86 |
| 5 C | 2.55 | 3.04 | 2.80 | 5.97 | 2.13 | 2.32 | 0.97 | -0.10 | 0.87 | 19.03 | 12.90 | 12.64 |
| 6 C | 2.34 | 2.72 | 2.62 | 5.98 | 3.41 | 3.56 | 1.53 | -0.18 | 1.35 | 17.51 | 16.23 | 15.84 |
| 7 C | 2.23 | 2.65 | 2.52 | 5.99 | 4.24 | 4.47 | 2.06 | -0.29 | 1.77 | 15.80 | 11.30 | 11.18 |
| 8 C | 2.09 | 2.46 | 2.43 | 5.99 | 5.52 | 5.59 | 2.57 | -0.43 | 2.15 | 16.82 | 12.48 | 12.11 |
| 9 C | 2.59 | 3.00 | 2.88 | 6.00 | 1.87 | 1.94 | 0.93 | -0.10 | 0.84 | 15.20 | 13.83 | 12.94 |
| 10 C | 2.39 | 2.79 | 2.68 | 5.99 | 2.92 | 3.04 | 1.45 | -0.18 | 1.27 | 17.39 | 15.33 | 15.08 |
| 11 C | 2.18 | 2.51 | 2.48 | 5.98 | 4.10 | 4.16 | 2.01 | -0.29 | 1.72 | 9.94 | 9.45 | 8.96 |
| 12 C | 2.12 | 2.49 | 2.45 | 5.99 | 5.41 | 5.51 | 2.60 | -0.43 | 2.18 | 12.29 | 10.32 | 9.58 |
| 13 C | 2.63 | 2.90 | 2.88 | 5.99 | 1.81 | 1.82 | 0.98 | -0.09 | 0.88 | 14.50 | 13.87 | 13.12 |
| 14 C | 2.39 | 2.68 | 2.63 | 5.98 | 2.96 | 3.02 | 1.56 | -0.18 | 1.38 | 16.93 | 15.49 | 14.72 |
| 15 C | 2.24 | 2.56 | 2.55 | 5.98 | 4.28 | 4.31 | 2.11 | -0.29 | 1.83 | 15.97 | 12.14 | 10.90 |
| 16 C | 2.11 | 2.46 | 2.43 | 5.98 | 5.66 | 5.75 | 2.65 | -0.42 | 2.23 | 21.37 | 14.20 | 13.44 |
| 17 C | 2.40 | 2.82 | 2.65 | 5.96 | 0.29 | 0.32 | 0.78 | -0.10 | 0.68 | 18.13 | 16.09 | 15.44 |
| 18 C | 2.21 | 2.65 | 2.53 | 5.98 | 1.00 | 1.05 | 1.26 | -0.20 | 1.06 | 22.18 | 18.95 | 18.55 |
| 19 C | 2.09 | 2.47 | 2.43 | 5.99 | 1.42 | 1.44 | 1.67 | -0.32 | 1.35 | 20.40 | 11.27 | 11.64 |
| 20 C | 2.00 | 2.44 | 2.40 | 5.97 | 1.74 | 1.78 | 2.10 | -0.49 | 1.62 | 22.44 | 13.53 | 14.03 |
| 21 C | 2.44 | 2.94 | 2.72 | 6.01 | 0.16 | 0.51 | 0.77 | -0.10 | 0.66 | 19.39 | 15.95 | 16.73 |
| 22 C | 2.22 | 2.71 | 2.52 | 6.01 | 0.98 | 1.05 | 1.22 | -0.21 | 1.01 | 20.67 | 19.28 | 19.82 |
| 23 C | 2.11 | 2.52 | 2.45 | 6.02 | 1.40 | 1.44 | 1.61 | -0.32 | 1.29 | 17.59 | 12.13 | 11.88 |
| 24 C | 2.01 | 2.43 | 2.40 | 6.01 | 1.86 | 1.88 | 2.08 | -0.49 | 1.59 | 17.17 | 13.58 | 13.20 |
| 25 C | 2.47 | 2.90 | 2.77 | 5.99 | 0.52 | 0.55 | 0.82 | -0.10 | 0.72 | 21.49 | 16.01 | 15.24 |
| 26 C | 2.26 | 2.65 | 2.57 | 5.99 | 1.24 | 1.28 | 1.38 | -0.19 | 1.19 | 22.07 | 20.47 | 20.74 |
| 27 C | 2.13 | 2.58 | 2.47 | 5.98 | 1.81 | 1.90 | 1.80 | -0.32 | 1.49 | 17.01 | 12.61 | 12.36 |
| 28 C | 1.98 | 2.42 | 2.38 | 6.01 | 2.47 | 2.50 | 2.22 | -0.48 | 1.74 | 14.63 | 12.99 | 12.61 |
| 29 C | 2.46 | 2.87 | 2.77 | 5.99 | 0.68 | 0.70 | 0.89 | -0.10 | 0.78 | 17.33 | 16.74 | 15.96 |
| 30 C | 2.27 | 2.60 | 2.57 | 5.99 | 1.53 | 1.56 | 1.37 | -0.19 | 1.17 | 19.18 | 18.98 | 19.25 |
| 31 C | 2.17 | 2.55 | 2.53 | 5.98 | 2.25 | 2.27 | 1.84 | -0.32 | 1.52 | 10.65 | 10.02 | 9.65 |
| 32 C | 2.07 | 2.47 | 2.47 | 6.01 | 2.81 | 2.81 | 2.29 | -0.49 | 1.80 | 13.48 | 12.80 | 12.93 |
| 33 C | 2.61 | 2.88 | 2.87 | 5.99 | 1.83 | 1.84 | 1.05 | -0.10 | 0.95 | 15.09 | 13.16 | 25.81 |
| 34 C | 2.36 | 2.68 | 2.67 | 6.00 | 2.94 | 2.96 | 1.61 | -0.19 | 1.42 | 17.02 | 16.60 | 15.95 |
| 35 C | 2.22 | 2.56 | 2.52 | 6.33 | 4.06 | 3.95 | 2.17 | -0.30 | 1.87 | 12.29 | 14.94 | 15.45 |
| 36 C | 2.13 | 2.49 | 2.48 | 5.98 | 4.67 | 4.70 | 2.66 | -0.44 | 2.23 | 14.27 | 16.94 | 17.72 |

L Laboratory scale sample runs

P Pilot scale sample runs

C Commercial scale sample runs

TCP – tricalcium phosphate

SSG – sodium starch glycollate

Ha – minimum tablet height in the die under the maximum compaction pressure

Hb – tablet height at the end of decompaction phase

Hc – out-of-die tablet height after

Dout – out-of-die tablet diameter

σin – tablet in-die tensile strength

σout – tablet out-of-die tensile strength

Wc – compaction work

Wd – decompaction work

Wn – net work

IAR – immediate axial recovery

CAR – cumulative axial recovery

VSR – volumetric strain recovery