

# COST ANALYSIS OF VARIOUS TYPES OF NANO CEMENT

|                                | Classes of Nanocement |       |       |        |       |       |       |       |       |       |
|--------------------------------|-----------------------|-------|-------|--------|-------|-------|-------|-------|-------|-------|
| Raw material, Kg/ton           | OPC                   | N30   | N35   | N40    | N50   | N55   | N60   | N70   | N80   | N90   |
| CLINKER                        | 950                   | 300   | 357   | 450    | 500   | 550   | 600   | 700   | 800   | 900   |
| SAND                           | 0                     | 688   | 582   | 532    | 480   | 424   | 376   | 272   | 168   | 64    |
| GYPSUM                         | 50                    | 9     | 53    | 13.5   | 15    | 16    | 18    | 21    | 24    | 27    |
| ADDITIVE                       | 0                     | 10    | 10    | 10     | 10    | 10    | 10    | 10    | 8     | 9     |
| Total, Kg                      | 1000                  | 1007  | 1002  | 1005.5 | 1005  | 1000  | 1004  | 1003  | 1000  | 1000  |
| Constituent costs per ton, USD |                       |       |       |        |       |       |       |       |       |       |
| CLINKER                        | 47.5                  | 15    | 17.85 | 22.5   | 25    | 27.5  | 30    | 35    | 40    | 45    |
| SAND                           | 0                     | 2.064 | 1.746 | 1.596  | 1.44  | 1.272 | 1.128 | 0.816 | 0.504 | 0.192 |
| GYPSUM                         | 0.9                   | 0.162 | 0.954 | 0.243  | 0.27  | 0.288 | 0.324 | 0.378 | 0.432 | 0.486 |
| ADDITIVE                       | 0                     | 7.55  | 7.55  | 7.55   | 7.55  | 7.55  | 7.55  | 7.55  | 6.04  | 6.795 |
| Raw Material Costs Total       | 48.40                 | 24.78 | 28.10 | 31.89  | 34.26 | 36.61 | 39.00 | 43.74 | 46.98 | 52.47 |
| Production cost, USD           | 10                    | 10    | 10    | 10     | 10    | 10    | 10    | 10    | 10    | 10    |
| Total cost per ton, USD        | 58.40                 | 34.78 | 38.10 | 41.89  | 44.26 | 46.61 | 49.00 | 53.74 | 56.98 | 62.47 |
| Selling price per ton, USD     | 71                    | 71    | 71    | 71     | 71    | 67    | 67    | 75    | 100   | 100   |
| Profit per ton, USD            | 12.60                 | 36.22 | 32.90 | 29.11  | 26.74 | 20.39 | 18.00 | 21.26 | 43.02 | 37.53 |

| Input Data        |         |       |        |          |             |
|-------------------|---------|-------|--------|----------|-------------|
| Raw material      | clinker | sand  | gypsum | modifier | electricity |
| Price per ton,USD | 50      | 3     | 18     | 755      | 0.041       |
| Price per Kg, USD | 0.05    | 0.003 | 0.018  | 0.755    | 0.041       |

| Classes of Nano cement                             | N30  | N35  | N40  | N50 | N55  | N60 | N70  | N80 | N90  |
|--|------|------|------|-----|------|-----|------|-----|------|
| Compressive strength @ 28 days (no less, than) MPa | 32.5 | 42.5 | 52.5 |     | 62.5 |     | 77.8 |     | 82.5 |