



### TRI C TRADING

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## Purpose of TRI C TRADING:

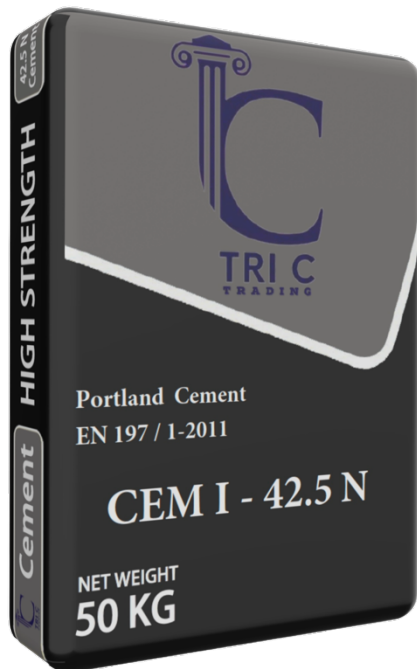
TRI C TRADING Company Provides all kinds of Cement products according to the highest European and American standards.

- **Portland Cement CEM I 52.5 N**
- **Portland Cement CEM I 42.5 N**
- **Portland Cement CEM II/B-L 32.5 N**
- **Portland Cement Type I - ASTM C 150**
- **Portland Cement Type II - ASTM C 150**

# TRI C TRADING CEMENT PRODUCTS

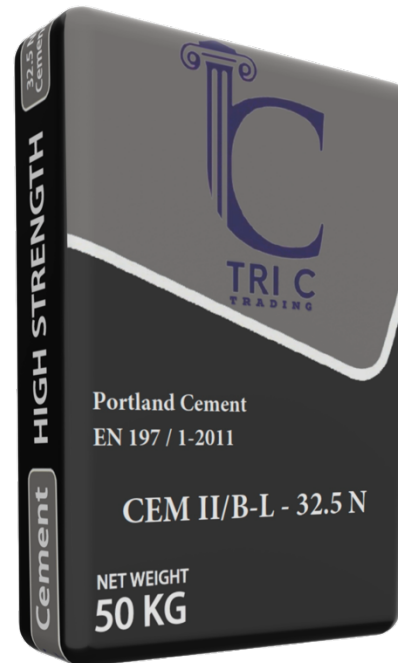
## Portland Cement

- CEM I 42.5 N



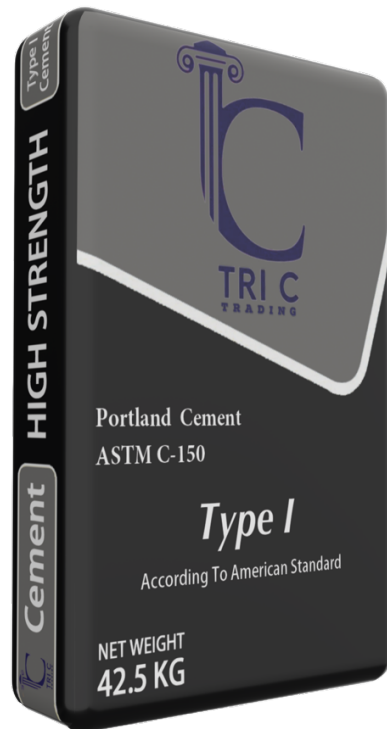
## Portland Cement

- CEM II/B-L 32.5N



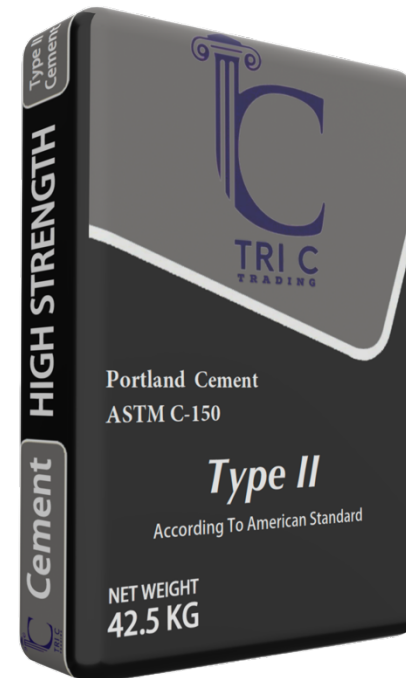
## Portland Cement

- Type I - ASTM C 150



## Portland Cement

- Type II - ASTM C 150





# **CERTIFICATES OF ANALYSIS**

# CEM I 52.5 N

| Standard specification | Result                  | specifics                      |
|------------------------|-------------------------|--------------------------------|
| chemical composition   |                         |                                |
|                        | 20.40%                  | SiO <sub>2</sub>               |
|                        | 4.72%                   | Al <sub>2</sub> O <sub>3</sub> |
|                        | 3.74%                   | Fe <sub>2</sub> O <sub>3</sub> |
|                        | 62.89%                  | CaO                            |
| Max 5                  | 1.26%                   | MgO                            |
| Max 4.0                | 2.57%                   | SO <sub>3</sub>                |
|                        | 0.26%                   | K <sub>2</sub> O               |
|                        | 0.44%                   | Na <sub>2</sub> O              |
| < 0.10                 | 0.051%                  | CL                             |
| < 2 ppm                | 1.84 ppm                | Cr+6                           |
| Max 5.0                | 0.51%                   | Insoluble residue              |
| Max 5.0                | 1.87%                   | Loss on ignition               |
|                        | 53.80%                  | C <sub>3</sub> S               |
|                        | 18.85%                  | C <sub>2</sub> S               |
|                        | 6.19%                   | C <sub>3</sub> A               |
|                        | 11.36%                  | C <sub>4</sub> AF              |
| Physical properties    |                         |                                |
|                        | 3496 cm <sup>2</sup> /g | Fineness (Blaine)              |
| Max 10                 | 0.50 mm                 | Expansion                      |
| Compressive strength   |                         |                                |
| Min 20                 | 25.70 Mpa               | 2 Days                         |
| Min 52.5               | 56.80 Mpa               | 28 Days                        |
| Min 45                 | 175 Minutes             | Initial Setting Time           |
|                        | 235 Minutes             | Final Setting Time             |
|                        | 0.65%                   | Free Lime                      |

*Chemical composition and physical properties of cement - CEM I 42.5N*

# CEM I 42.5N

| <u>Chemical Composition</u>         | Unit               | Results | Requirements of BS EN 197-1 / 2011  |
|-------------------------------------|--------------------|---------|-------------------------------------|
| SiO <sub>2</sub>                    | %                  | 20.67   |                                     |
| Al <sub>2</sub> O <sub>3</sub>      | %                  | 4.52    |                                     |
| Fe <sub>2</sub> O <sub>3</sub>      | %                  | 3.9     |                                     |
| CaO                                 | %                  | 60.39   |                                     |
| MgO                                 | %                  | 1.23    |                                     |
| SO <sub>3</sub>                     | %                  | 2.7     | ≤ 3.50                              |
| Na <sub>2</sub> O                   | %                  | 0.37    |                                     |
| K <sub>2</sub> O                    | %                  | 0.23    |                                     |
| CL                                  | %                  | 0.04    | ≤ 0.10                              |
| Cr <sup>+6</sup>                    | ppm                | 1.89    | ≤ 2.00                              |
| Insoluble residue                   | %                  | 1.65    | ≤ 5.0                               |
| Loss on ignition                    | %                  | 3.71    | ≤ 5.0                               |
| Free Lime                           | %                  | 0.76    |                                     |
| <u>Physical Properties</u>          |                    |         |                                     |
| Fineness, specific surface (Blaine) | cm <sup>2</sup> /g | 3308    |                                     |
| Expansion                           | mm                 | 0.5     | ≤ 10                                |
| <u>Compressive Strength</u>         |                    |         |                                     |
| 2 Days                              | MPa                | 20      | ≥ 10                                |
| 28 Days                             | MPa                | 46.35   | ≥ 42.5 and equal or less than 62.50 |
| Initial Setting Time                | Minutes            | 195     | ≥ 60                                |
| Final Setting Time                  | Minutes            | 245     |                                     |

***Chemical Composition and Physical Properties of Limestone cement***  
**[CEM II/B-L 32.5 N]**

| NO                   | DESCRIPTION (EN 197-1 CEM II/B-L 32.5N) |                                | UNIT               | VALUE | RANGE       |
|----------------------|-----------------------------------------|--------------------------------|--------------------|-------|-------------|
| CHEMICAL COMPOSITION |                                         |                                |                    |       |             |
| 1                    | Silicon Dioxide                         | SiO <sub>2</sub>               | %                  | 15.45 | 12.5-16.0   |
| 2                    | Aluminum Oxide                          | Al <sub>2</sub> O <sub>3</sub> | %                  | 4.42  | 4.3-5.0     |
| 3                    | Ferric Oxide                            | Fe <sub>2</sub> O <sub>3</sub> | %                  | 3.11  | 3.0-4       |
| 4                    | Calcium Oxide                           | CaO                            | %                  | 61.76 | 60.5-64     |
| 5                    | Magnesium Oxide (Max 5.0)               | MgO                            | %                  | 0.90  | 0.6-2.0     |
| 6                    | Sulfur Trioxide (Max 3.5)               | SO <sub>3</sub> <3.5           | %                  | 2.15  | 2.0-3.0     |
| 7                    | Chloride < 0.10                         | Cl <sup>-</sup> <0.1           | %                  | 0.04  | 0.02-0.08   |
| 8                    | Insoluble residue (Max 5.0)             | I.R< 5                         | %                  | 0.55  | 0.3-2.5     |
| 9                    | Loss On ignition                        |                                | %                  | 12.22 | 10.0-14.5   |
| 10                   | Free-Lime < 2                           | F-CaO< 2                       | %                  | 1.1   | 0.8-1.8     |
| 11                   | Chromium Hexavalent (Max 2.0)           | Cr VI< 2                       | ppm                | 0.8   | 0.7 - 1.8   |
| 12                   | Alkali Equivalent                       | Na <sub>2</sub> O equivalent   | %                  | 0.65  | 0.50 - 0.75 |
| 13                   | Sieve 45                                |                                | %                  | 12    | 9.0-14.0    |
| 14                   | Sieve 90                                |                                | %                  | 0.2   | 0.00- 0.8   |
| PHYSICS TEST         |                                         |                                |                    |       |             |
| 1                    | Fineness (Blaine)                       |                                | Cm <sup>2</sup> /g | 4275  | 4100-4800   |
| 2                    | Water consistency                       |                                | %                  | 25.2  | 24.5-27.0   |
| 3                    | Initial setting time                    | Min 75                         | Minutes            | 117   | 110- 170    |
| 4                    | Final setting time                      |                                | Minutes            | 177   | 160-200     |
| 5                    | 7Day (Compressive Strength)             | Min 16                         | MPa                | 28.1  | 16-30       |
| 6                    | 28Day (Compressive Strength))           | 32.5-52.5                      | MPa                | 38.9  | 34.0-45.0   |
| 7                    | Soundness                               | Max 10mm                       | mm                 | 1     | 0.6 – 4.0   |

# Type I - ASTM C 150

| Standard specification | Result                  | specifics                      |
|------------------------|-------------------------|--------------------------------|
| chemical composition   |                         |                                |
|                        | 20.43%                  | SiO <sub>2</sub>               |
|                        | 4.82%                   | Al <sub>2</sub> O <sub>3</sub> |
|                        | 3.89%                   | Fe <sub>2</sub> O <sub>3</sub> |
|                        | 62.39%                  | CaO                            |
| Max 6.0                | 1.28%                   | MgO                            |
| Max 3.0                | 2.57%                   | SO <sub>3</sub>                |
|                        | 0.23%                   | K <sub>2</sub> O               |
|                        | 0.40%                   | Na <sub>2</sub> O              |
| < 0.10                 | 0.03%                   | CL                             |
|                        | 1.82 ppm                | Cr+6                           |
| Max 0.75               | 0.58%                   | Insoluble residue              |
| Max 3.0                | 2.49%                   | Loss on ignition               |
|                        | 50.03%                  | C <sub>3</sub> S               |
|                        | 20.83%                  | C <sub>2</sub> S               |
|                        | 6.19%                   | C <sub>3</sub> A               |
|                        | 11.84%                  | C <sub>4</sub> AF              |
| Physical properties    |                         |                                |
| 2800                   | 3250 cm <sup>2</sup> /g | Fineness (Blaine)              |
| Compressive strength   |                         |                                |
| Min 12                 | 22.2 Mpa                | 3 Days                         |
| Min 19                 | 32.6 Mpa                | 7 Days                         |
| Min 45                 | 175 Minutes             | Initial Setting Time           |
| Min 375                | 285 Minutes             | Final Setting Time             |
|                        | 0.51%                   | Free Lime                      |



# Type II - ASTM C 150

| Standard specification | Result                  | specifics                      |
|------------------------|-------------------------|--------------------------------|
| chemical composition   |                         |                                |
|                        | 20.43%                  | SiO <sub>2</sub>               |
| Max 6.0                | 4.82%                   | Al <sub>2</sub> O <sub>3</sub> |
| Max 6.0                | 3.75%                   | Fe <sub>2</sub> O <sub>3</sub> |
|                        | 62.20%                  | CaO                            |
| Max 6.0                | 1.27%                   | MgO                            |
| Max 3.0                | 2.47%                   | SO <sub>3</sub>                |
|                        | 0.23%                   | K <sub>2</sub> O               |
|                        | 0.40%                   | Na <sub>2</sub> O              |
| < 0.10                 | 0.03%                   | CL                             |
|                        | 1.75 ppm                | Cr+6                           |
| Max 0.75               | 0.58%                   | Insoluble residue              |
| Max 3.0                | 2.49%                   | Loss on ignition               |
|                        | 48.35%                  | C <sub>3</sub> S               |
|                        | 23.04%                  | C <sub>2</sub> S               |
| Max 8                  | 6.43%                   | C <sub>3</sub> A               |
|                        | 11.41%                  | C <sub>4</sub> AF              |
| Physical properties    |                         |                                |
| 2800                   | 3250 cm <sup>2</sup> /g | Fineness (Blaine)              |
| Compressive strength   |                         |                                |
| Min 10                 | 22.6 Mpa                | 3 Days                         |
| Min 17                 | 32.5 Mpa                | 7 Days                         |
| Min 45                 | 185 Minutes             | Initial Setting Time           |
| Min 375                | 285 Minutes             | Final Setting Time             |
|                        | 0.51%                   | Free Lime                      |

# Contact Us



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