

QUALITY CERTIFICATE

|          |                                     |
|----------|-------------------------------------|
| Product  | Portland Cement Type 1-525 ( M 500) |
| Standard | ISIRI 389,EN197-1,GOST 10178        |
| Ship     |                                     |
| Date     |                                     |

|          |   |
|----------|---|
| Producer | Peyvand Golestan Cement Co<br>First Floor, Nr. 1, Secand Alley, Pakistan St., Beheshti St., Tehran<br>Tel : 021 88175135 , 88174029 Fax : 02188174081<br><a href="http://www.Pgcement.ir">www.Pgcement.ir</a> |
| Email:   | <a href="mailto:pgcement@pgcement.ir">pgcement@pgcement.ir</a>  |

| Physical Properties            | Factory test result | Standard (ISIRI-389) | GOST 10178 | Unit   |
|--------------------------------|---------------------|----------------------|------------|--------|
| Setting Time (Vicat ,Initial)  | 180                 | Min 45               | Min 45     | Minute |
| Setting Time (Vicat ,Final)    | 3.7                 | Max 6:00             | Max 10:00  | hr     |
| Expansion (Autoclave)          | 0.12                | Max 0.8              | Max 0.8    | %      |
| Specific Surface Area (Blaine) | 3150                | Min 2800             | Min 2800   | cm2/gr |
| Residue on 90m Sieve           | 1                   |                      | 80m.Max15  | %      |
| Compressive Strength (1 day)   |                     |                      |            | kg/cm2 |
| Compressive Strength (2 days)  | 220                 | Min 200              |            | kg/cm2 |
| Compressive Strength (3 days)  |                     |                      |            | kg/cm2 |
| Compressive Strength (7 days)  |                     |                      |            | kg/cm2 |
| Compressive Strength (28 days) | 550                 | Min 525              | Min500     | kg/cm2 |

| Chemical Analysis | Factory test result | Standard (ISIRI - 389) | GOST 10178 | Unit |
|-------------------|---------------------|------------------------|------------|------|
| SiO2              | 20.85               |                        |            | %    |
| Al2O3             | 5.15                |                        |            | %    |
| Fe2O3             | 3.40                |                        |            | %    |
| CaO               | 63.7                |                        |            | %    |
| MgO               | 1.7                 | Max 5.00               | Max 5.00   | %    |
| SO3               | 2.55                | Max 3.00               | Max 3.50   | %    |
| Insoluble Residue | 0.35                | Max 0.75               |            | %    |
| Loss On Ignation  | 1.5                 | Max 3.00               |            | %    |
| Free CaO          | 1.3                 |                        |            | %    |
| K2O               | 0.55                |                        |            | %    |
| Na2O              | 0.35                |                        |            | %    |

| Modulus                      | Factory test result | Standard ( ISIRI - 389) | GOST 10178 | Unit |
|------------------------------|---------------------|-------------------------|------------|------|
| Lime Saturation Factor (LSF) | 92.87               |                         |            | %    |
| Silica Modulus (SM)          | 2.44                |                         |            |      |
| Alomina Modulus (AM)         | 1.51                |                         |            |      |

| Mineralogical Composition | Factory test result | Standard ( ISIRI - 389) | GOST 10178 | Unit |
|---------------------------|---------------------|-------------------------|------------|------|
| C3S                       | 54.2                |                         |            | %    |
| C2S                       | 19.19               |                         |            | %    |
| C3A                       | 7.9                 |                         |            | %    |
| C4AF                      | 10.34               |                         |            | %    |

Factory Management

Lab &QC Manager



