



UNION CEMENT

BUILDING STRONG STRUCTURE





Corporate Office:

UNION CEMENT BD

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Factory: Ramanandapur, Bypass Road, Radhanagar, Pabna, Bangladesh.

www.unioncementbd.com

Ensured Competitive Advantage On Marketing Mix



SOURCES BEST QUALITY CLINKER



Quality Control

Quality control is maintained at all stages of production by:

- Chemical composition test by hourly
- Residue testing by sieve analysis
- Controlling clinker, Gypsum by weighing feeder
- Measuring weighing feeder using tachometer

Chemical Composition

- Calcium Oxide (CaO) is the main component of clinker which imparts strength by producing active silicate. Standard combination of Calcium Oxide (CaO) of Union Cement is > 65 .
- Silica is important component helps to create Calcium Silicate Hydration gel. Standard combination of Silica of Union Cement is > 21 .
- Alumina should remain in a controlled amount. Standard combination of Silica of Union Cement is < 6 .
- Magesium Oxide should remain in a controlled amount. Otherwise concrete becomes unsound. Standard combination of Magesium Oxide of Union Cement is < 2 .
- Sulphate is sensitive component, controlled amount keeps concrete stable. Standard combination of Magesium Oxide of Union Cement is < 2 .

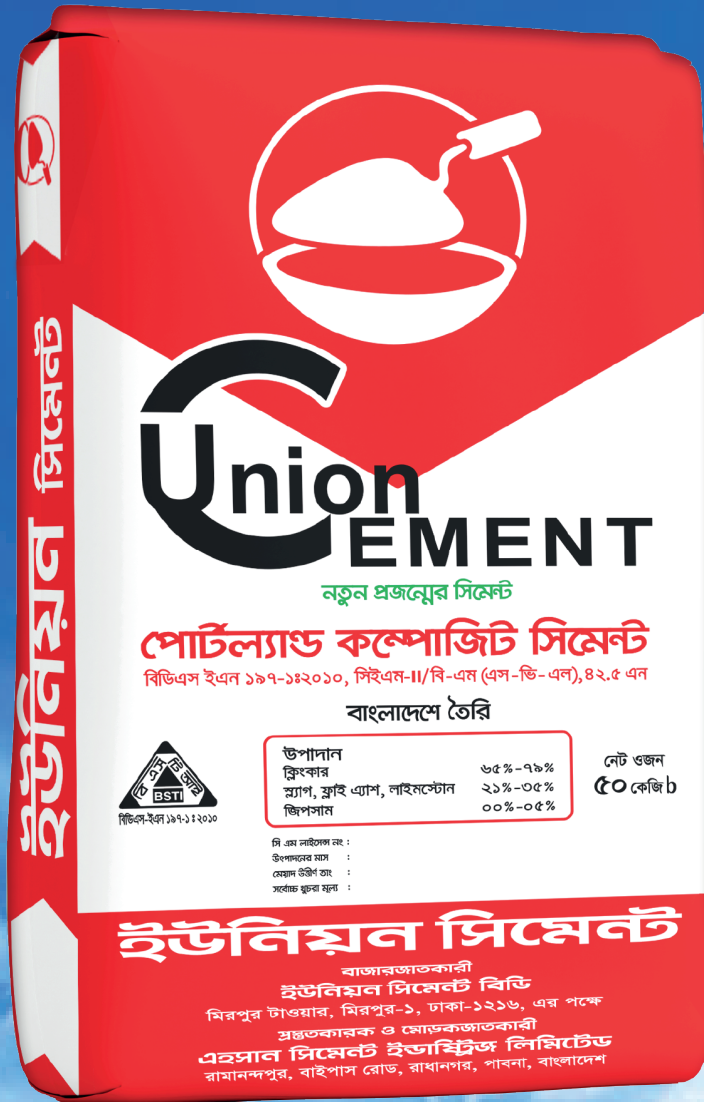
Highest Fineness Cement

“ଅତ୍ୟନ୍ତ ବିଶିଷ୍ଟ
ପରିଷ୍କାରଣ କରା ଲାଗୁ ଥାଏ”



Portland Composite Cement

CEM II/ B-M



(PCC) CEM II/ B-M

✓ Ingredients:

- Clinker: 65-79%
- Fly Ash, Slag & Limestone: 21-35%
- Gypsum: 0-5%
- Strength class 42.5 N

✓ Features :

- Cement is always fresh and dry.
- Strength of cement increases over time.
- Possesses heat reflection.
- Can be easily preserved.
- Concrete with High resistance to chemical Attack.

ADVANTAGES OF PCC IN CONCRETE

Improved pumpability Improved fresh concrete properties
Lower heat of hydration Higher long term strength Low permeability, dense structure Optimum early strength Low effective alkali content High chemical resistance (Sea water, chloride diffusion, sulphate attack) Compactability.



INTRODUCING UNION PORTLAND COMPOSITE CEMENT (CEM II/ B-M)

Union Portland Composite Cement is CEM-II/B-M which is a cement consisting of Clinker, Gypsum, Pulverized Fuel Ash (PFA), Blast Furnance Slag and Limestone designated by the specifications of BDS EN 197-1: 2010; CEM -II/B-M (S-V-L), 42.5 N. PCC is the most suitable cement for constructions in Bangladesh. CEM - II /B-M contains 65-79% Clinker.

Both slag & fly ash (PFA) are used in PCC. Percentage of SiO₂ in PFA is higher than slag which is advantageous to gain more long-term strength and ensure durable concrete. This type of cement is used for large constructions all around the world and it has been used during the last few decades.

PROPERTIES

FINENESS

Union Cement is tested for fineness by O-Sepa Syclon Technology. The specific surface of cement is 300-380 m²/kg.

SOUNDNESS

Union Cement is tested for soundness by the Le-Chatelier method and autoclave test. The unareated cement shall have an expansion of less than 2.00 mm (Le-Chatelier method) & 0.08% (Autoclave Method) respectively.

SETTING TIME

The setting time of cement is tested by Vicat apparatus method. Initial setting time is not less than 45 minutes. Final setting time is not more than 420 minutes.

COMPRESSIVE STRENGTH

The compressive strength of Union Cement is tested in compression machine. In 2 days it is ≥ 18-20 MPa. In 28 days it is ≥ 42.5 MPa.

CHEMICAL

Insoluble residue (by mass) 5.0% max
Total Chloride Content 0.10% max
Alkali as Na₂O 0.60% max

QUALITY CONTROL

We ensure consistent quality control at every stage of production. Our plant is well supported by a in-house modern laboratory with the latest state-of-the-art equipment for quality control and continuous improvement in the products. In addition to the well equipped and furnished chemical and physical laboratory, we have highly qualified trained chemists and technicians with long experience in the field of cement who are absolutely dedicated to their work.

LAB TEST

Raw materials are tested in this lab before they are imported and sample of cement are also tested each and every hour during production. For quality assurance cement is tested on various parameters. For this, the chemists of Union Cement conduct the compressive strength test making concrete/mortal cubes of different test age-3 days, 7 days and 28 days, as per ASTM C-150, and 2 days & 28 days as per EN (European Standard) at its laboratory. Therefore we can deliver the highest quality cement to our customers.

TECHNICAL SPECIFICATIONS

CEM-II/B-M , 42.5 N

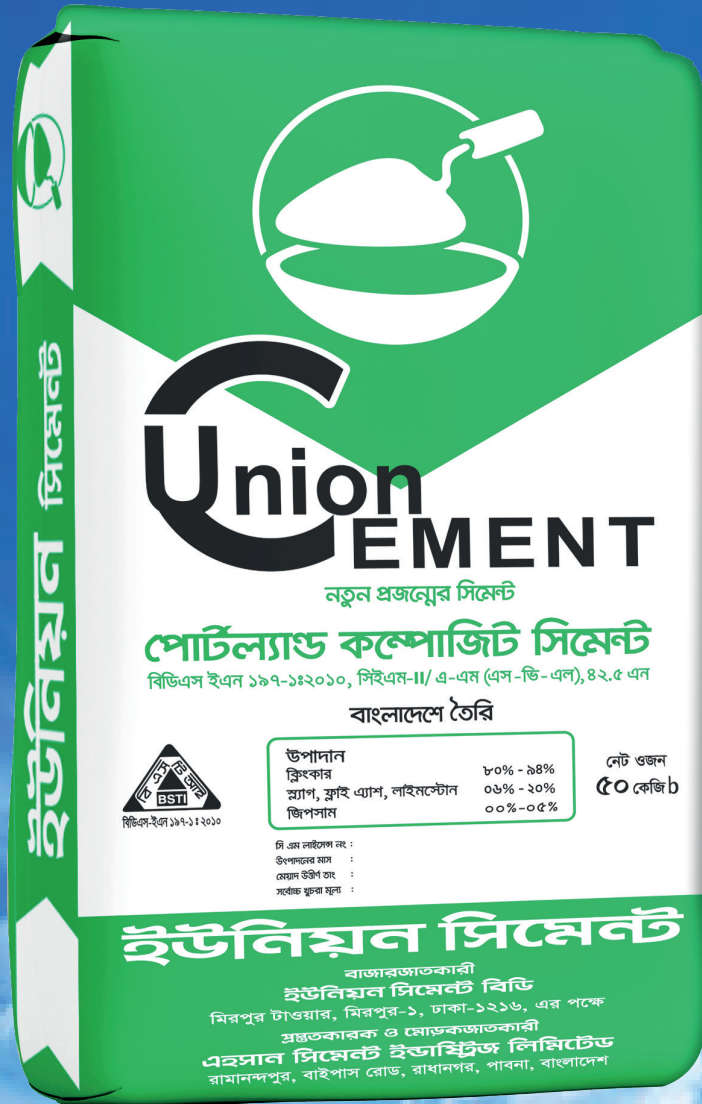
Composition: Clinker 65-79 %, Fly Ash, Slag & Limestone: 21-35%, Gypsum 0-5%

Benefits of UNION PCC:

Can gain high early strength. Ensures durability. Resists cracking. Makes construction faster. Effective in producing high strength concrete. Used in construction of tall buildings or high-rise buildings & housing developments, Industrial buildings, factory buildings, and all type of construction works. Exclusively used in bridge, culvert, flyover, runway, pre-stressed concrete, pre-stressed prefabricated applications, tunnel mold systems & in the construction of mass housing Frequently used in reinforced concrete elements & other pre-fabricated productions, particularly for pretension prefabricated applications. Mostly used in concrete classes of high compressive strength required applications.

Portland Composite Cement

CEM II/ A-M



(PCC) CEM II/ A-M

✓ Ingredients:

- Clinker: 80-94%
- Fly Ash, Slag & Limestone: 6-20%
- Gypsum: 0-5%
- Strength class 42.5 N

✓ Features :

- Cement is always fresh and dry.
- Strength of cement increases over time.
- Possesses heat reflection
- Can be easily preserved
- Concrete with High resistance to chemical Attack

ADVANTAGES OF PCC IN CONCRETE

Improved pumpability Improved fresh concrete properties
Lower heat of hydration Higher long term strength Low permeability, dense structure Optimum early strength Low effective alkali content High chemical resistance (Sea water, chloride diffusion, sulphate attack) Compactability.



INTRODUCING UNION PORTLAND COMPOSITE CEMENT (CEM II/ A-M)

Union Portland Composite Cement is CEM-II/A-M which is a cement consisting of Clinker, Gypsum, Pulverized Fuel Ash (PFA), Blast Furnance Slag and Limestone designated by the specifications of BDS EN 197-1: 2010; CEM -II/A-M (V-S-L), 42.5 N. PCC is the most suitable cement for constructions in Bangladesh. CEM – II /A-M contains 80-94% Clinker, which is substantially higher than CEM – II/B-M containing 80-94% Clinker that provide us extra advantage in strength development and increase concrete performance. Both slag & fly ash (PFA) are used in PCC. Percentage of SiO₂ in PFA is higher than slag which is advantageous to gain more long-term strength and ensure durable concrete. This type of cement is used for large constructions all around the world and it has been used during the last few decades.

PROPERTIES

FINENESS

Union Cement is tested for fineness by O-Sepa Syclon Technology. The specific surface of cement is 300-380 m²/kg.

SOUNDNESS

Union Cement is tested for soundness by the Le-Chatelier method and autoclave test. The unreacted cement shall have an expansion of less than 2.00 mm (Le-Chatelier method) & 0.08% (Autoclave Method) respectively.

SETTING TIME

The setting time of cement is tested by Vicat apparatus method. Initial setting time is not less than 45 minutes. Final setting time is not more than 420 minutes.

COMPRESSIVE STRENGTH

The compressive strength of Union Cement is tested in compression machine. In 2 days it is ≥ 18-20 MPa. In 28 days it is ≥ 42.5 MPa.

CHEMICAL

Insoluble residue (by mass) 5.0% max
Total Chloride Content 0.10% max
Alkali as Na₂O 0.60% max

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TECHNICAL SPECIFICATIONS

CEM-II/A-M , 42.5 N

Composition: Clinker: 80-94%, Fly Ash, Slag & , Limestone: 6-20%, Gypsum: 0-5%

Benefits of UNION PCC: (PCC) CEM II/ A-M

Can gain high early strength. Ensures durability. Resists cracking. Makes construction faster. Effective in producing high strength concrete. Used in construction of tall buildings or high-rise buildings & housing developments, Industrial buildings, factory buildings, and all type of construction works. Exclusively used in bridge, culvert, flyover, runway, pre-stressed concrete, pre-stressed prefabricated applications, tunnel mold systems & in the construction of mass housing Frequently used in reinforced concrete elements & other pre-fabricated productions, particularly for pretension prefabricated applications. Mostly used in concrete classes of high compressive strength required applications.

Portland Cement

CEM I



CEM I

✓ Ingredients:

- Clinker: 95-100%
 - Gypsum: 0-5%
- Strength class 52.5 N

✓ Features :

- Cement is always fresh and dry.
- Strength of cement increases over time.
- Possesses heat reflection
- Can be easily preserved
- Concrete with High resistance to chemical Attack



INTRODUCING UNION PORTLAND CEMENT (CEM I)

As per specification of BDS EN 197-1:2010, CEM-1, 52.5 N, ASTM C150-Type 1 Union Portland Cement is a cement prepared by mixing clinker 95-100% and gypsum 0-5%. This cement is also called Portland Cement (PC). This is obtained by intimately mixing together calcareous and argillaceous materials, burning them at clinker temperature up to about 1450 degree celsius and grinding the resulting clinker (calcined product) at required fineness and finally mixed with gypsum to obtain cement. This cement is a finely ground mixture of calcium aluminates and silicates capable of setting and hardening by chemical reaction with water. It is a binding material, which is used in engineering constructions.

PROPERTIES

FINENESS

Union Cement is tested for fineness by O-Sepa Syclon Technology. The specific surface of cement is 300-380 m²/kg.

SOUNDNESS

Union Cement is tested for soundness by the Le-Chatelier method and autoclave test. The unreacted cement shall have an expansion of less than 2.00 mm (Le-Chatelier method) & 0.08% (Autoclave Method) respectively.

SETTING TIME

The setting time of cement is tested by Vicat apparatus method. Initial setting time is not less than 45 minutes. Final setting time is not more than 420 minutes.

COMPRESSIVE STRENGTH

The compressive strength of Union Cement is tested in compression machine. In 3 Days It is ≥ 20 Mpa. In 28 Days It is ≥ 52.5 Mpa.

CHEMICAL

Ratio Of Percentage Of Lime To Percentages Of Silica, Alumina And Iron Oxide When Calculated The Lsf Becomes 0.90-0.94. Insoluble Residue (By Mass) 0.75% Max 0.26 Total Chloride Content 0.01% Max.

QUALITY CONTROL

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LAB TEST

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TECHNICAL SPECIFICATIONS

CEM-I, 52.5 N

Composition: Clinker 95-100%, Gypsum 0-5%

Benefits of Crown PC:

Can gain high early strength. Ensures durability. Resists cracking. Makes construction faster. Effective in producing high strength concrete. Used in construction of tall buildings or high-rise buildings & housing developments, Industrial buildings, factory buildings, and all type of construction works. Exclusively used in bridge, culvert, flyover, runway, pre-stressed concrete, pre-stressed prefabricated applications, tunnel mold systems & in the construction of mass housing Frequently used in reinforced concrete elements & other pre-fabricated productions, particularly for pretension prefabricated applications. Mostly used in concrete classes of high compressive strength required applications.

Corporate Social Responsibility (CSR)



House Owner Program

“আমার বাড়ি
আমি গড়ি”



Mason Program

রাজ সন্মিলন



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