

Adprufe[®] PR5

Waterproof admixture for the production of concrete with reduced water penetration

Product Description

Adprufe[®] PR5 is a balanced aqueous mixture of highly purified dispersants and catalysts formulated for use in waterproofing all Portland cement concrete, cement mortar and cement plaster mixes. Adprufe PR5 contains no added chlorides.

Adprufe PR5 complies with the requirements of the following admixture specifications: BS 5075: Part 1: 1982; SS 320: 1987. One litre weighs approximately 1.15kg ± 0.02kg.

Applications

To produce less permeable, denser concrete with lower water content (typically 20% reduction), greater plasticity, and higher strengths at all ages, with significant benefits in the following applications:

- Water tanks, reservoirs, basements, sewage treatment plants, swimming pools, and other water containment concrete structures.
- Ready mixed concrete production
- Pumped concrete

Product Advantages

- Reduced permeability of concrete matrix
- Controlled hydration through moderate retardation of set
- Approved for use in concrete for drinking water reservoirs
- Increased compressive and flexural strengths at all ages
- Reduced bleeding, improved surface finish of concrete
- Improved workability and placing characteristics
- Economical use cost
- Extended durability
- Effective over a wide range of cement contents and mix designs, including PFA and Blast Furnace Slag blended mixes

The carefully selected ingredients of Adprufe PR5 will also isolate these pores and thus provide significantly reduced permeability via capillary channels. Furthermore, the inclusion of Adprufe PR5 will permit approximately 20% water reduction and give greater plasticity and workability to the fresh concrete. The compressive and flexural strengths of the hardened concrete are measurably improved, whilst drying shrinkage is minimised. Adprufe PR5 will delay the normal setting time of concrete by 1 to 3 hours at normal dosage rate.

Addition Rates

Adprufe PR5 can be added at between 300 and 800mL / 100kg cementitious materials. Optimum addition rate depends on the desired performance characteristics according to project specification. The quantity of water added to the concrete must be reduced by 20% when Adprufe PR5 is used.

Dispensing Equipment

Please contact your local GCP representative for further information regarding the dispensing equipment for this product.

Health and Safety

See Adprufe PR5 Material Safety Data Sheet or consult GCP Applied Technologies.



Chemical Action

Architects, engineers, concrete technologists and other authorities agree that high quality concrete with low water-cement ratio for highest strength and with good workability for easy placing and compaction will be watertight in most applications, when properly cured. However, such concrete may still absorb moisture by capillary action, and therefore, a waterproofing admixture should be used to prevent the passage of moisture.

The addition of Adprufe PR5 provides two main benefits in the objective of achieving reduced permeability, high quality concrete:

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- Its powerful, water-reducing capability permits a significant reduction in water-cement ratio without loss in consistency (slump) of the concrete.
- By altering the morphology of the hydration process of the cement, Adprufe PR5 creates reduced pore diameter after curing.

Compatibility with Other Admixtures

Adprufe PR5 is compatible in concrete with all commercial air-entraining admixtures such as Darex[®] AEA[®], and with all

non-retarding type superplasticisers. Due to the air-entraining property of Adprufe PR5 itself, the addition rate of Darex AEA may be reduced by about 25-50% to avoid excessive air contents in the concrete. Each admixture must be added separately to the mix. For additional information on areas of doubt, please consult your local GCP representative.

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