

Adprufe™ 100

Advanced admixture for integrally waterproof concrete structures.

Description

Adprufe™ 100 is an innovative liquid admixture that significantly reduces both the permeability and drying shrinkage of concrete. This enhanced concrete performance is achieved by:

- Reduced water absorption and penetration.
- A significant reduction in drying shrinkage which produces fewer and thinner cracks.
- A low water/cement ratio, which reduces capillary paths in the cured concrete.
- High slump, workable concrete mix for ease of placement.
- Enhanced compressive and tensile strengths at all ages.

When Adprufe 100 is used with ADVA® high performance concrete admixtures, highly effective integrally waterproof concrete is achieved.

System components:

- Adprufe™ 100 - liquid waterproof concrete admixture.
- ADVA® Flow 410 - high performance concrete admixture.
- Adcor® 500S - hydro-expansive waterstop system for construction joints & penetrations.
- Serviseal® AT - PVC/hydrophilic co-extruded waterstop for designed movement joints.
- BETEC® 350 - cementitious compound for sealing tie-bar holes.

Advantages

- Reduces drying shrinkage and permeability of concrete.
- Improved workability resulting in easier, more complete compaction.
- Can be used in all types of concrete, with all types of cementitious binders.
- Concentrated, liquid formulation - considerably less than other liquid systems and more easily dispersed than a powder.
- No expansive agents.
- Improves early strength.
- Can be combined with Grace membranes or cavity drain systems for enhanced protection in critical applications.

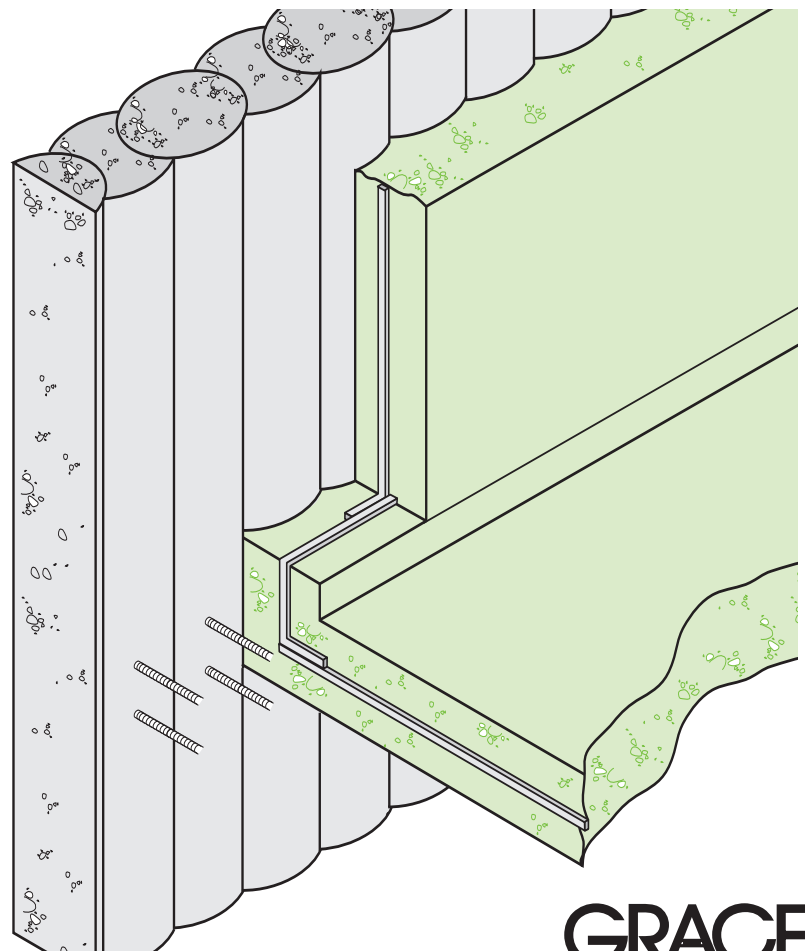
Applications

- Adprufe provides structurally integral waterproofing (Type B construction) as defined in BS 8102 1990 and is suitable for Basement grades 1 to 4.
- Water retaining structures.
- Swimming pools.
- Lift pits.
- Tunnels.

Note:

Adprufe is not recommended for elevated concrete decks.

Adprufe is not intended or recommended for use in areas where concrete is expected to be exposed to repetitive freeze/thaw cycling, unless the concrete has been air-entrained. Consult Grace for further advice.



Adprufe integrally waterproof concrete with secant piled retaining wall

Adprufe™ Concrete Typical Properties

Addition Rates

Property	Plain Concrete	Adprufe 100
Adprufe 100 Dosage Rate (Litres/m ³)	Nil	2.5
ADVA Dosage Rate % B.W.C	Nil	0.4 - 1.2%
Typical Cement Content (kg/m ³)	360	360
Free Water/ Cement Ratio	0.5	0.4
Consistence Slump Class	S3	S3
Setting Time (Minutes)	340	390
Air Content (%)	0.9	0.9
Compressive Strength (MPa)	Typical Improvement	
1 day	11	+73%
3 days	26	+65%
7 days	36	+47%
28 days	48	+42%
Water Absorption (%)	2.6	-58%
ISAT- ml/m ² /sec)		
10 minutes	0.246	-62%
30 minutes	0.125	-57%
60 minutes	0.117	-59%
Water Vapour Permeability (gm(Ns)-1)	6.60E ⁻¹⁰	-56%

	Addition	Per
Adprufe 100 for waterproof concrete	2.50 L	m ³
ADVA 410 superplasticiser	400 - 1200 ml	100 kg of cement

Note: Optimal ADVA addition rate should be determined by trial mix to ensure specified workability and maximum water/cement ratio is achieved. Trial mixes should always use specific cements and aggregates that will be used in the concrete. For further advice, consult Grace.

Dispensing

It is preferable that Adprufe 100 should be introduced into the mixer by means of automatic dispensing equipment. Such equipment is available from Grace and details will be given on request.

Design Criteria

Concrete structures must be designed in accordance with BS 8110 1997, or a comparable code. Using a maximum design crack width of 0.3 mm.

All water retaining structures must be designed in accordance with BS 8007 1987, or a comparable code. Using a maximum design crack width of 0.2 mm.

Additional design guidance for dwellings is given in the Approved Document, Basements for Dwellings.

Admix Properties

Appearance:

Straw coloured clear liquid

Air Entrainment: The product does not entrain additional air.

Chloride Content: Nil.

Specific Gravity: Approx 0.92.

Compatibility

With cements: Adprufe 100 can be used with all types of Portland Cements, including sulphate resisting cements. It is compatible with concrete containing pulverised fuel ash (pfa), ground granulated blast furnace slag (ggbs) and microsilica.

For other cement types consult Grace.

With other admixtures: As with all concrete admixtures, Adprufe 100 should not be pre-mixed with other admixtures or chemicals. The product is engineered to be used with Grace ADVA® superplasticisers, but must be dosed separately. Physical properties of the concrete may be adversely effected if Adprufe is used with other admixtures and chemicals.

Delivery and Storage

Adprufe 100 is supplied in 25 and 205 litre non-returnable containers or in 1000 litre transi-tanks.

Store under cover and protect from frost. If the product freezes, contact Grace for advice.

Shelf life is 12 months in original, unopened containers

For other system components, refer to separate product data sheets.

Mix Design

Adprufe 100 is engineered for use in concrete with medium to high workability and with a maximum water/cement ratio of 0.4. Grace recommend the use of ADVA® 410 superplasticiser (see separate product data sheet). Where alternative superplasticisers are used, ensure they produce the specified workability and maximum water/cement ratio, at the equivalent cement content. When non Grace superplasticiser is being considered we recommend trial mixes to ensure compatibility. For further advice consult Grace.

Concrete Placement

Place concrete in accordance with the recommendations of BS 8000 1990 Section 2.2. Fully compact all concrete using best practices. Do not place concrete when ambient temperatures are 5°C or less. Refer also to Material Safety Data Sheet for guidance.

Curing

Concrete should be cured in accordance with the recommendations given in BS 8110 1997 Part 1.

Health and Safety

Read the product label and Material Safety Data Sheets (MSDS's) before use. Users must comply with all risk and safety phrases. MSDS's can be obtained from Grace Construction Products or from our web site at www.graceconstruction.com.

 Visit our web site at www.graceconstruction.com

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