

Prefilled Unlined Hand-Placed Bagwork

Unlined Bagwork Product Datasheet

Identification

Introduction

Prefilled unlined bagwork is designed for the hand placement of concrete, above the waterline or away from watercourses, where external water is not present to hydrate the concrete contained inside the bag. Uses typically include the formation of headwalls to culverts and bridges or the creation and protection of riverbanks, but in controlled situations can also be used for the creation of scour protection, the filling of voids and for underpinning. The concrete contained within the bagwork, remains inside the bagwork product during its use, with the outer hessian bag acting as the external formwork. An additional polypropylene bag is further added as a temporary containment bag, to limit the loss of dry material from the hessian bag, and also improve shelf life. This outer polypropylene bag is removed during use and can be reused for other purposes. The concrete mix within the bags typically hydrates within several hours (refer to instructions below), hardens fully within 12 hours, and achieves full design strength within 28 days.

Each prefilled unlined bag is supplied filled with 25kg of dry mix concrete, 40no. prefilled bags per pallet, with each pallet shrink wrapped for storage and protection. Prefilled, unlined bagwork should be pre-soaked prior to placement in order to hydrate the concrete sufficiently and begin the hardening process. Steelwork can also be used as a means of linking blockwork together into a singular massive block of concrete blockwork.

Authority

The individual components of the concrete comply with the requirements of BS/IS EN 206-1:2002 and is manufactured under a BSI registered ISO 9001:2015 Quality System.

Materials used comply with the following standards:

Cement	BS EN 197-1:2011 (UK)
	IS EN 197-1: 2011 (Ireland)
Aggregate	BS EN 12620:2002

General Advantages

Prefilled Unlined Bagwork allows the hand placement of concrete, in situations where water is not generally available to harden the concrete. Typically this will be on riverbanks or away from a watercourse and it is intended to be used in conjunction with SoluForm Lined Bagwork. The use of Unlined Bagwork is subject to suitable Method Statements to avoid risk to any nearby watercourse, and is often subject to Regulatory Consent. Provided prefilled, primarily the advantage is that it removes the need for the Contractor to fill bagwork themselves. As a means of concrete placement, it is highly adaptable during construction, and requires very little in the way of design.

Description

Manufacture

Concrete raw materials and end products are subject to regular quality control procedures and testing. Materials are factory blended, weighed and bagwork filled to ensure consistency and quality of the end bagwork product.

Compressive Strength

Prefilled Unlined Bagwork is supplied to achieve an in-situ strength of at least 25N/mm² in the case of the high strength formulation or at least 9N/mm² for the general civil formulation, complying with BS EN 206-1.

Characteristic Strength N/mm² (typical)

High Strength Concrete Blend

Strength Test- Cube	7 Days	28 Days
Laboratory Tested	25	32
Representative (in situ)	18	25

General Civil Concrete Blend

Strength Test- Cube	7 Days	28 Days
Laboratory Tested	9	12
Representative (in situ)	7	9

Colour

Concrete supplied within Prefilled Unlined Bagwork is natural grey. Colours cannot be added.



Performance

Prefilled Unlined Bagwork contains a premixed, dry mix cementitious concrete product, formulated for pre-soaking and non-flow applications. It is designed to be pre-soaked prior to being placed, with the associated biodegradable bagwork providing simply a means of carrying, shaping and forming the concrete blockwork. The concrete has been specifically blended to provide a durable, long term concrete formation, with structural grade strength of at least 25N/mm² and offer good adhesive properties for any associated steelwork. As such, it is ideal for a range of long term hand placed concrete bagwork uses, including headwalls, training walls and out of water underpinning.

Instructions for Use

All prefilled bagwork should remain palletised and wrapped until ready to use. Palletised bagwork should be stored in the dry, or suitably covered and protected if stored outside.

Care should be taken in removing protective wrapping, so as not to cut or damage the bagwork. When ready to use, bagwork should be removed individually from the pallet wrapping, and individual bags gently shaken, rolled or squeezed to loosen any compacted dry mix concrete contained within each bag. Should there be any small amounts of cement powder on the outside of the bag, resulting from the filling process, this can be gently brushed off with a soft brush. Where bags are more heavily dusty, it is likely that the bagwork has been damaged during transit and the bags should not be used. Where damage has occurred during transit, these damaged bags should not generally be used, although often the dry mix can be reused to refill empty bagwork.

For Placement Above Water Level

Prefilled bagwork placed above water level needs to be hydrated prior to placement. This is achieved by pre-soaking the lined bagwork in a bath of water for approximately 30 minutes prior to placement. Both the inner hessian bag and the outer polypropylene bag are permeable and will readily allow the influx of water into the bag. This is sufficient for the concrete to take up the correct amount of water to harden. Typically a 25kg bag will absorb around 4L of water during this process. When ready to use, each of the bags should be removed from the pallet and fully submerged in a suitable bath of clean water. The outer polypropylene bag should not be removed at this stage.

Once hydrated (approximately 30 minutes), the bagwork can be carefully lifted from the bath and excess water allowed to drain. Typically this pre-soaking is completed away from the watercourse, often on a grassed area. Shortly after removal from the bath and when ready to use, the outer polypropylene bag should be removed. This can simply be done by sliding the inner hessian bag and concrete out of the outer bag. The white polypropylene sandbags can then be reused elsewhere.

The pre-soaked bagwork should be carried individually, by hand, to the site of placement. The worksite should be approached from the dry side, such that pre-soaked bagwork is not carried over or through the watercourse, where slips, trips or falls could result in the bagwork being dropped into the water. The Contractor's method statement should include measures to ensure that pre-soaked bagwork is not carried through a watercourse. The use of unlined concrete filled bagwork may also be subject to Regulatory Authority Approval.

Each bag should be carefully placed horizontally, taking care not to drop, snag or tear the bags on sharp objects. Bagwork is to be placed flat and built up in rows, typically alternating or cross bonding bagwork. Cross bonding improves the strength and effectiveness of the finished concrete blockwork.

After the second or third row of bags, steel rebar pins can be pushed down vertically through the bagwork to tie all the blockwork together, with additional steel used to tie subsequent rows. Steelwork is not always needed for above waterline placement although we do recommend that it is used wherever the bags are needed for medium to long term works, or where they fulfil a role of providing protection against scour. It also protects against vandalism, or blocks becoming dislodged during flood conditions.

For placement of prefilled bagwork below water level we recommend the use of our Prefilled SoluForm Lined Bagwork product, to allow dry mix placement under water.

We recommend you pre-test the bags and proposed methodology beforehand, prior to using them on site, to ensure the product is suitable for the application.

Biodegradation: The outer hessian bagwork will safely biodegrade, typically within 6-12 months.