

# O'BRIEN ≡ CEMENT

## Advisory Leaflets

O'Brien Cement All Purpose Cement is a limestone Cem II Portland Cement which conforms to I.S EN 197-1 Cem II/A-L 42,5N Standard.

### Applications

O'Brien All Purpose cement can be used for a wide range of applications such as mortar, concrete, screed and plaster mixes. The cement is packed in a plastic weatherproof bag which provides storage, quality and durability benefits.

When mixed and placed correctly O'Brien cement will perform to EN 197 requirements. Concrete and mortar strength is significantly affected by mix constituents and proportions, ambient temperature and curing conditions.

### Features and Benefits

- 42,5N Strength cement
- Reduced CO2 Cement
- Suitable for outside storage
- Clean and dust Free packaging
- Stronger tear resistant bag
- Extended shelf life
- NSAI Certified
- CE marked

### Properties

Initial setting time: 140-200 minutes  
2-Day Strength: 23-32 N/mm<sup>2</sup>  
7-Day Strength: 34-41 N/mm<sup>2</sup>  
28-Day Strength: 46-54N/mm<sup>2</sup>

### Storage

If unopened and stored correctly this product can be stored for up to one year without negative effects on cement strength.

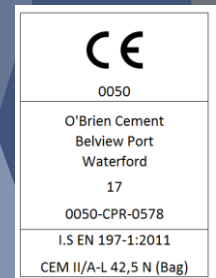
### Health and Safety

- Keep out of reach of children
- Wear protection gloves, eye protection, face protection
- If in eyes rinse continuously with water for several minutes and immediately call for medical assistance
- If on skin wash with plenty of soap and water. Skin contact with wet cement or wet Mortar, may cause irritation, dermatitis or burns
- Avoid Breathing dust, if inhaled remove casualty to fresh air and keep at rest in a position comfortable for breathing
- Dispose of contents/container to an appropriate waste or recycling point
- Chromium VI reducing agent has been added and is effective from 3 months from date of packing, if unopened.

### Product Data and Support

- Monthly test data, and technical assistance
- DOP - Declaration of Performance
- SDS - Safety Data Sheet all available on request

Further Information on this product and the full range of O'Brien Cement products can be obtained by contacting 056-7771111 or visit our website [www.obriencement.ie](http://www.obriencement.ie)



### Placing and Compaction

#### Placing

Concrete should be placed as near to its final position as possible. It can then be roughly levelled off.

#### Compaction

Compaction of concrete is extremely important in order to remove any entrapped air in the concrete. Concrete of medium workability can be compacted by using a compacting beam/rod in and up and down motion. As a result of this action it closes all the voids in the concrete.

#### Finish

Finishing can be completed by simply using a wooden or steel float, brushing the concrete or tamping with a suitable compacting beam. Timing of the above step can be crucial in the success or a good or bad finish to the concrete as premature finishing can draw excess water and cement to the surface.

#### Curing

Preventing moisture loss in the first week is crucial to the success of a finished surface and the concrete needs to be protected after placing. This can be done by covering the concrete with damp sacking, polythene sheet or spraying with water. A polythene sheet covered with straw provides protection in frost.

### Quantities

#### Foundations

Use 10 x 25kg bags of O'Brien Cement, along with approximately 2 tonnes of damp gravel will produce just under 1 cubic meter of concrete.

#### Paths

Use 14 x 25kg bags of O'Brien Cement along with approximately 2 tonnes of damp gravel and you will have approximately 1 cubic meter of concrete.

#### Internal Floors

Use 12 x 25kg bags of O'Brien Cement along with approximately 2 tonnes of damp gravel will produce just under 1 cubic meter of concrete.

### Storage

O'Brien Cement bags can be stored indoors or outdoors due to its durable weather proof bag. It is recommended not to stack bags higher than 1.5m.



## Plastering using O'Brien Cement

### Plastering

Plastering. Plastering is the process of covering rough walls and uneven surfaces in the construction of houses and other structures, it is a mixture of cement and sand along with the required quantity of water.

Importance or Objectives of Plastering is to improve the appearance of the surface by providing an even, smooth, regular, clean and finished surface. In case of external plastering, the objective is to preserve and protect the surface from atmospheric influences by acting as a protective coating.

Plaster is usually applied in three layers:

1. **Scud Coat** This is best applied by throwing the mixture onto the surface of the wall from a hand scoop. The wall surface should be covered with a single layer of scud coat 3 to 5mm thick and no steps should be taken to smooth the surface. This provides a good key and uniform suction for later work.
2. **Undercoat** This is the most important part of a rendering in keeping out the rain. It should not exceed 12mm in thickness. Always comb fresh undercoats to provide a sufficient key for the next coat.
3. **Outer Coat** This should be either a weaker mix or thinner than the under coat. In general, it should be less than 10mm in thickness. As a rule, to avoid failure due to shrinkage and loss of bond, successive plaster coats should be no stronger than the previous coat (or background); this is achieved either by reducing the strength of the mix or by reducing the thickness of the later coat.

### Mix Design!

| <u>Area (Sqm)</u> | <u>Mortar Mix</u>                         | <u>Mix Ratio</u> |
|-------------------|---|------------------|
| 10                | Scud Coat Cement: Sand                    | 1:3              |
| 10                | Undercoat + Finish External: Cement: Sand | 1:4              |
| 10                | Undercoat + Finish Internal               | 1:3              |



## Floor Screeds using O'Brien Cement

### What is floor Screed?

A sand cement floor screed is a layer of mortar made with Cement Manufactured to IS EN 197-1 and clean sharp concreting sand, which is cast in situ onto a prepared base slab.

The screed can then be left as finished or it can be floated to produce a smooth surface on which the desired floor or finish can be applied.

### Screed definitions

There are particular definitions concerned with specifying screeds.

1. Levelling screed - screed suitably finished to obtain a defined level and to receive the final flooring. It does not contribute to the structural performance of the floor.
2. Wearing screed - screed that serves as flooring. This term was formerly known as high strength concrete topping. It is also used to refer to structural toppings as well as wearing surfaces.
3. Bonded - screed laid onto a mechanically prepared substrate with the intention of maximising potential bond.
4. Unbonded - screed intentionally separated from the substrate by the use of a membrane.
5. Floating - screed laid on acoustic or thermal insulation. This is a type of unbonded screed.
6. Cement sand screed - screed consisting of a screed material containing sand up to a 4mm maximum aggregate size.
7. Fine concrete screed - screed consisting of a concrete in which the maximum aggregate size is 10mm.

### The Mix!

It is recommended that a Sand : Cement mix of 4:1 batched by weight generally should be used. The optimum thickness of a sand and cement bonded screed is 25-40mm, an unbonded screed should have a minimum thickness of 50mm, whilst a floating screed should have a thickness greater than 65mm for lightly loaded floors and 75mm for more heavily loaded floors.

### Materials

O'Brien Cement manufactured in accordance to IS EN 197-1

15x25kg bags of O'Brien Cement with approx. 1.5 tonnes of damp sand will produce approximately 1 cubic metre of screed.

### Sand

Sand should be clean and sharp. If fine mortar sands are used they can produce cement balling in the mixer which can lead to an irregular distribution of cement in the mix.

### Recommendations

Excessive water should be avoided as it will take from the final strength of the screed. However if there is not enough water added it can make compacting the screed more difficult.

Compacting and Finishing can be done by using wooden or steel float.

Curing- screeds should be cured as soon as possible after placing by covering it with a polythene sheeting. This will ensure that all water will remain in the mix which will allow full strength to develop. After curing screeds should be left to dry out naturally.

