WDL Concrete Products

Site Work Guide

Sample Panels

In order to establish the standard of block work, mortar, jointing and workmanship generally, it is strongly recommended that sample panels of paint grade, blocks should be erected prior to commencing construction work. Such panels are much more effective than a "one off' blocksample or words in defining and specifying the standard of work required.

Transportation / Handling & Storage on Site

Our products are delivered by artic/rigid lorries and are off loaded by means of a mechanical grab.

They should be placed on a firm and level surface and not stacked higher than head height, where possible blocks should be handled by mechanical means e.g. fork lift. Under no circumstances, should anyone attempt to assist the driver of the mechanical grab whilst offloading the products or stand under, or near, to the grab whilst in operation. The blocks should be protected from frost, rain and mud splashing by the use of waterproof sheeting. Our blocks can be shrink wrapped and pallets supplied upon request at an additional cost.

Whenever possible air should be allowed to circulate around and through the stacks. Units of greater than 20kg should be handled mechanically or using a two person team if they have to be handled repetitively. When chasing, drilling or cutting to avoid inhalation of dust and irritation to eyes and skin, the appropriate use of goggles, dust masks and gloves is recommended. All packaging should be carefully disposed of in accordance with local environmental requirements.

Particular attention should be taken to ensure protection of the block arises.

Blocklaying

It is recommended that our blocks should be taken from alternative cubes during the course of construction, this will avoid colour banding and will maintain the natural appearance of the finished wall. Arrange the work to avoid multiple handing of the blocks, whenever possible handle blocks, in packs by mechanical means and take care to avoid damaging the units. Block laying should be discontinued during heavy rain unless the work is protected. Damaged blocks should not be built into the wall and walling should be designed to minimise block cutting.

Overnight, the block work should be protected against rain, snow, frost and mud splashing from the ground. No block laying should be carried out when the temperature is at or below 3ºc. Precaution may also be required if the temperature is 3ºc when the mortar is laid but could subsequently fall below freezing point before the mortar has hardened, for example, overnight. Do not complete more than 1.5m height of wall in one day.

The joint profile should be selected to take account of the required appearance and if applicable, exposure conditions. For internal work a concave joint is recommended. Hollow blocks should only be shell bedded with the designer's permission. Flush joints are not recommended for facing or work to be decorated.

Mortar

Guidance on selection of mortars is given in B.S. 5628: Part 3. The following mixes are for guidance.-

Work above DPC

1 Ordinary Portland Cement
1 Hydrated Lime
6 Sand

1 Ordinary Portland Cement
6 Sand Plus Plasticiser

1 Masonry Cement
5 Sand.

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Work Below DPC
1 Ordinary Portland Cement
4 Sand plus plaserciser
(The sand should confirm to BS: 1200)

Setting out

Set out the blockwork in order to maintain bond pattern. Provide a full block bearing at lintels whenever possible.

Cutting

Blocks can be cut with a hammer and bolster, but should be carried out using a power driven masonry saw when blocks are cut they should be allowed to dry before being built into the wall. It should be noted that a cut face may have a different appearance to a moulded face and whenever possible any cut face should be built into the walls.

Chasing

The depth of chases must be limited. Vertical chases must be limited. Vertical chases must not exceed one third and horizontal chases one sixth of the wall thickness. The use of hollow blocks enables services to be concealed within the walling without the need to cut chases. If chasing is necessary a disc cutter is recommended.

Tiling

Tiling onto concrete block work with appropriate adhesive is specified in BS: 5980. Blockwork should be allowed to dry out before tiling commences. Movement joints in the tiles should be provided to coincide with the control joints in the blockwork.

Painting

A range of proprietary paints may be applied to our paint grade blocks internally and externally. Two full coats of trade emulsion are recommended. The paint can be applied by brush/roller/spray. Blockwork surfaces should be thoroughly dry and have been cleaned to remove dirt and all dust.

Code of practice for painting of buildings is given in BS 6150 1982

Protective Clothing

Protective clothing should be worn when handling concrete blocks. Safety footwear, head protection and gloves should be worn in enclosed spaces when cutting or chasing concrete blocks.

Fixings

W. D. L. products provide an excellent background and good pull out strengths for most types of fixings, enabling heavy equipment to be supported without difficulty. The fixing strength is determined by diameter, size and type of fixings. WDL blocks can be nailed directly with masonry nails. Strong fixings can be obtained using screws and plugs. The minimum penetration of any fixing should not be less than 50mm from a free edge of a block.

Cleaning

When using propriety cleaners, ensure that these are applied sparingly and immediately washed off with clean water otherwise acid attack on the pigmentation can occur.

Rendering

All work should conform to the recommendations of BS 5262: code of practice for external renderings. Render mixes should normally consist of a 1:1: 6 cement, lime, sand. The choice of render mix will depend on the appearance desired, exposure conditions, nature of the background and the functional requirements. Experience has shown that a

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pourus render not stronger than that required for adequate durability and with an open or rough textured finish is likely to give the best results in the majority of circumstances. Problems can occur when the mix is too strong. Successive render coats should be specified as being no stronger than the previous coats or background, and no thicker than the previous coat, except in the case of a single coat. A render normally comprises of at least two layers, namely an undercoat and a final coat. Metal lathing sometimes used in severe exposed conditions or on weak backgrounds should have two undercoats. Where improved resistance to rain penetration is desired, two undercoats should be used. Normally undercoats are between 8 -12mm thick with the final coat approx 6mm thick. Overall the rendering thickness should be not less than 20mm for three coat work and 16mm for two coat work.

Plastering

All work should comply with the recommendation of BS: 5492 code of practice for internal plastering.

Cement based mixes should not be stronger than a 1:1:6 cement: lime: sand mix and will usually be finished with a gypsum or other lightweight finishing coat compatible with the backing coat. The undercoat should be to a thickness of 10mm, and the finishing coat to a thickness of 2-3mm. The mixes and application of lightweight and gypsum plasters should be in accordance with the manufactures instructions.

Movement joints

Movement joints should be provided between 4-6 mts depending on change of height/thickness and profile. This should be in accordance with BS 5628 Part 3.

Fire resistance

Notional periods of fire resistance for masonry walls to comply with the building regulations are given in table 16 of BS 5628: Part 3

Protection of finished work

Blockwork and the mortar should be protected from inclement weather with weatherproof sheeting which must be properly tied down. Whenever possible protect the tops of walls by overhanging eaves. Use projected sills/copings which have drip grooves underside.

Product information

Hazards: Care should be taken when handling to avoid cuts and abrasions, strains and dropping. When using powdered cutting and drilling tools, care must be taken to avoid inhalation of dust. Dust masks to BS 2091, Type B, or the equivalent, should be used along with suitable goggles to protect eyes.

Emergency action

No specific requirements other than the following:
Minor abrasions - Wash with soap and water
Dust in eyes - Irrigate with sterile water
In the case of more serious injury, or if symptoms persist, seek medical advise.

Handling Building Blocks (HSE)

Executive (HSE) has issued construction sheet 37 "Handling Building Blocks" which means that: There is a risk of injury in the single handed repetitive manual handling of blocks heavier than 20kg. Units of greater than 20kg should be handled mechanically or by using a two person team if they have to be handled repetitively.

Product Composition

Dense Concrete Blocks - Crushed naturally occurring aggregates, cement and water. Lightweight Concrete Blocks - Crushed naturally occurring pumice aggregate, or pulverised fuel Ash, cement and water. The material used are non flammable, non explosive, non-toxic, and as far as we know not harmful to skin.

Efflorescence

Efflorescence is a general term and covers a number of different types of deposit. On concrete there are basically three forms.

1) Lime bloom
2) Lime weeping
3) Crystallized soluble salts

Lime bloom the most common phenomenon, it tends to be spasmodic. It is formed when calcium hydroxide migrates through damp concrete to the surface and there reacts with the carbon dioxide from the atmosphere to produce a surface deposit of calcium carbonate crystals. It often occurs when the concrete masonry becomes wet and damp for several days, after which it is allowed to dry out. Excessive wetting of the masonry before, during or after construction together with inadequate protection and poor design detailing are the main factors in increasing the risk of efflorescence appearing. Lime bloom is a temporary effect and given time, usually disappears after time of its own accord.

Lime weeping usually occurs at joints where water has emerged from the interior of the wall. Water moving through the wall dissolves lime and deposits it as calcium carbonate on the face. Normally the encrustations are localised.

Lime weeping is normally a permanent feature and will not disappear on its own accord. Crystallization of soluble salts takes the form of fluffy white deposits, these salts can originate from the contaminant's in the concrete mix or from the contact of the concrete with water. Where the salts are present as contaminant's in the mortar, efflorescence often becomes apparent as the work dries out.

The only way to keep incidence of efflorescence to a minimum is to protect work in progress from the weather. This is particularly important for facing work.

Blocks should not be in direct contact with the ground. They should be covered with waterproof material that allows air to circulate.

Dry Lining

Drylined systems such as plasterboards/thermal laminates are a popular finish for interior work, they should be installed strictly in accordance with the manufactures instructions.

Laying in cold conditions

Under no circumstances should masonry units be laid when the temperature is @ or below 3ºC unless precautions are taken to ensure that the mortar has a minimum temperature of 4ºC when laid and that the masonry is protected from becoming frozen until the mortar has hardened. Also precautions may be required where the temperature is above 3ºC when the mortar is laid but where the subsequent temperature may fall below freezing before the mortar has hardened e.g. overnight.

Party Walls

Guidance for wall construction is given in Document E of the building regulations showing how to meet the requirements. Using WDL concrete products which provide adequate resistance to the transmission of airborne sound, will comply with the construction types given in this document. A total mass, including plaster or plasterboard of at least 415kg/M2 is required.

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