



HEALTH & SAFETY

THE HANDLING AND TREATMENT OF AGGREGATE PRE-CAST BLOCKS

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1.0 PRODUCT DESCRIPTION

Aggregate Pre-Cast Blocks are manufactured for the construction of walls, partitions and floors in accordance with BS EN 771-3 2011 and recognised Codes of Practice using natural aggregates and recycled materials.

2.0 PHYSICAL & NATURAL CHARACTERISTICS

Aggregate Pre-Cast Blocks are produced using controlled mixes of aggregate, cement and water which is fed into a mould ultimately producing the required shape. Additives and pigments may be added dependant on the requirements to improve the properties and appearance of the finished product. Due to variation of natural aggregates the density of the product can vary within the limits of the specification.

3.0 ASSOCIATED HAZARDS

Although Aggregate Pre-Cast Blocks are generally regarded as inert, they do display external characteristics of abrasive surfaces and sharp edges depending on their finished shape.

Surface treatment and cutting of Aggregate Pre-Cast Blocks can create dust and if not properly extracted, by virtue of their cement / quartz content contain low volume elements of Respirable Crystalline Silicates, and if inhaled in excessive quantities over a long period of time can constitute a long term health hazard.

3.1 SPECIFIC HAZARDS

The main hazards associated with laying blocks are:

- Heavy loads and poor posture: excessive stress and strain causing injury to muscles and tendons, particularly where handling involves bending, twisting or other difficult postures.
- Slips, trips and falls: including damage caused by 'dropped blocks'
- Sharp edges: cuts and abrasions to the skin;
- Skin hazards: dermatitis, burns and similar conditions caused by contact with mortar (see HSE construction information sheet No. 26 Cement).

3.2 HAZARD CONTROLS

Careful consideration of a block layers work area can contribute significantly to safe working and the reduction of hazards. Points to consider include:

- Move blocks in packs by mechanical means wherever possible
- Load blocks above knee height
- Ensure that normal PPE appropriate to construction sites is both provided and used
- Ensure that appropriate eye protection equipment and dust suppression or extraction methods are provide when mechanically cutting or chasing blocks.

4.0 HANDLING AND LAYING BLOCKS

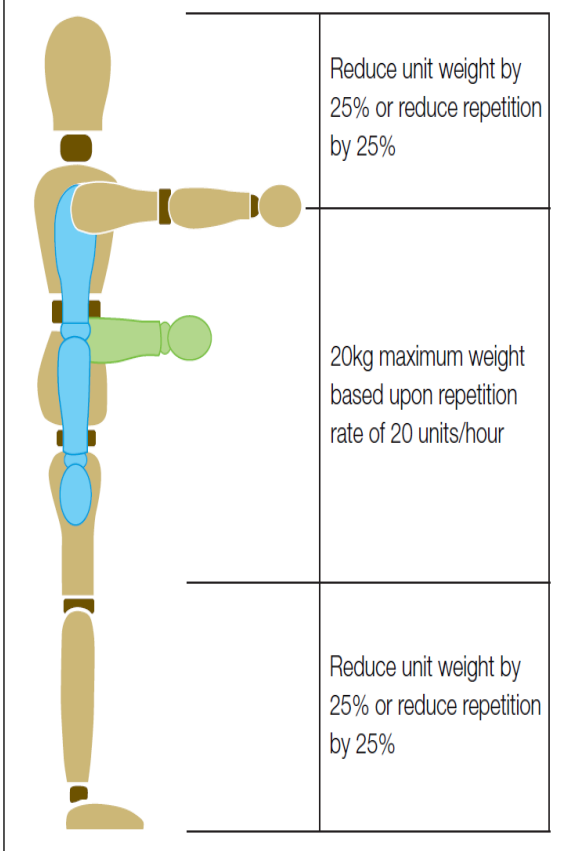
Some guidance states that a maximum block weight of 20kg is permissible; in fact, there is no specific law against heavier blocks, hence their availability on the market, since occasionally such blocks are necessary.

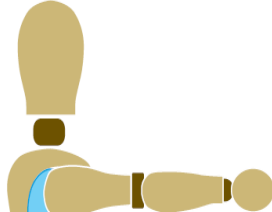
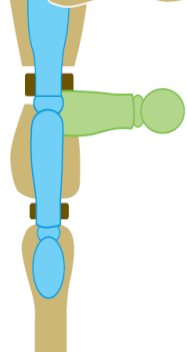

General industry guidelines recommend that for single person handling block layers laying 20kg blocks should lay no more than 20 blocks per hour over an 8 hour day. Where special units are necessary in excess of 25 kg then the laying rate should be reduced to less than 15 units/hour.

On the other hand, risk of injury is largely governed by the block weight as such where the single and repetitive handling of blocks heavier than 20 kg takes place suitable precautions are advised.

If single person is required and blocks heavier than 20kgs are used other precautions should be used.

- Stack blocks close to where they are used
- For blocks weighing heavier than 20kgs then mechanical lifting aids should be considered
- Blocks should be handled close to the body, twisting and over reaching should be avoided.
- Where blocks over 20 kilos are used the laying rate should be reduced by 25%
- Where blocks laid below knee height occurs the laying rate should be reduced by 25%
- Where blocks laid above shoulder height occurs the employment of scaffolding is advised the laying rate should be reduced by 25%



	Reduce unit weight by 25% or reduce repetition by 25%
	20kg maximum weight based upon repetition rate of 20 units/hour
	Reduce unit weight by 25% or reduce repetition by 25%

The most recent HSE guidance claims that heavy blocks can be placed by two operatives, thus lessening the risks to them. The current view of ergonomists is that it is virtually impossible to do this in practice without risking injury, and this, combined with the additional costs, will result in heavy blocks being laid by one operative. Thus, a specification clause stating that blocks over a certain weight are to be laid by two operatives is likely to be ineffective in reducing risk and as such has not been adopted by industry.

The guidance by the Construction Industry Advisory Committee (CONIAC) covering the safe handling of building blocks, masonry units and blocks, including those made of clay, concrete, reconstituted stone or any similar man-made or natural material states that to reduce the risk of injury the blockwork design, site conditions and the way in which the work is organised should be properly planned.

5.0 MANUAL HANDLING ERGONOMICS

Handle and lay building blocks in accordance with the following:

- The materials must be placed to ensure economy of movement for the block layer with everything in easy reach.
- Spread the blocks out evenly along the length of the wall in neat bonded stacks with mortar boards should be placed evenly between these stacks packed up on blocks. This helps keep the work area tidy and reduces the distance a bricklayer has to travel for his mortar or blocks.
- Arrange work to avoid over-reaching or twisting when handling blocks
- Ensure secure foot placement in the working area when handling blocks
- Stack on a level, firm base and wherever possible without double stacking of the block packs
- Keep the manhandling of blocks to a minimum and use mechanical lifting and handling aids wherever possible, such as cranes, fork-lift trucks with pallets, trolleys and telescopic handlers.

6.0 TRAINING

Brick layers should be given information and training on safe systems of work and the procedures to follow to ensure the safe handling and laying of blocks.

7.0 PPE / RPE

When handling blocks, the normal Personal Protective Equipment should include

- Safety helmet
- Safety footwear with protective toecaps
- Suitable gloves
- Eye Protection

In addition when cutting or chasing blocks Respiratory Protective Equipment should include:

- Compliant Disposable, Half Face* or Full Face *Air mask
**fitted with compliant Filters*
- Eye Protection where other than Full Face mask is employed

Appendix 1 COMPLIANCE DOCUMENTATION

For compliant RPE see also:

BS EN136:1998	Full Face Masks – Class I, II, III
BS EN140:1999	Half / Quarter Masks
BS EN143:2000	Particle Filters
BS EN149:2001	Filtering Half Masks to Provide Protection against Particles

For further information on RPE see Appendix 4; HSE Doc : European Standards and Markings For Respiratory Protection @ <http://www.hse.gov.uk/foi/internalops/oms/2009/03/om200903app4.pdf>

Appendix 2 DISCLAIMER

CCP Building Products have made every attempt to ensure the accuracy and reliability of the information provided in this document. The information has been submitted in good faith, provided "as is" without warranty of any kind for verification by your own sources.