



## Handling building blocks

Construction Industry Advisory Committee

Construction Sheet No 37



### Introduction

This guidance by the Construction Industry Advisory Committee (CONIAC) covers the safe handling of building blocks, by which the committee means all masonry units and blocks including those made of clay, concrete, and reconstituted stone, or any similar manmade or natural material.

Handling of building blocks can give rise to a wide range of injuries, including serious injuries where the damage is gradual and progressive over a substantial period of time.

To reduce the risk of injury the block work design, site conditions and the way the work is organised should be

properly planned. This guidance contains practical advice on these matters and should help designers and specifiers, those managing work on site and those who handle blocks.

### Risk assessment

1. To minimise the risk of injury:
  - (a) all the hazards involved need to be identified;
  - (b) the significant risks estimated; and
  - (c) suitable precautions to avoid or reduce these risks incorporated into a safe system of work.
2. The main hazards are:
  - (a) **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;
  - (b) **slips, trips and falls:** including damage caused by 'dropped blocks';
  - (c) **sharp edges:** cuts and abrasions to the skin;
  - (d) **skin hazards:** dermatitis, burns and similar conditions caused by contact with mortar (see HSE construction information sheet No. 26 cement).
3. With block handling, the risk of injury is largely determined by the weight of the block the heavier the block, the higher the risk of injury.
4. After taking account of expert opinion and the long history of complaints over handling heavy blocks, **CONIAC has concluded that there is a high risk of injury in the singlehanded, and repetitive manual handling of blocks heavier than 20 kilograms (44 lbs).**
5. If single person handling is needed, either blocks of 20 kilograms or lighter should be specified and used or other precautions should be taken to reduce the risk by, for example, the provision of mechanical handling. This would contribute to the risk assessment required under the Manual Handling Operations Regulations 1992.
6. With blocks weighing less than 20 kilograms, manual handling risks are still significant and suitable precautions should be taken to minimise these risks as much as possible.

## Precautions

7. **Designers and specifiers** should take the weight guideline into account at the design and specification stage of the project. Where it is not reasonably practicable to avoid specifying blocks heavier than 20 kilograms, provisions should be made for mechanical handling or for handling and laying by two people.

8. **Project planners and contractors** should follow the weight guideline and ensure that precautions listed below are taken into account when planning the work and when devising safe systems of work. Contractors should also give instruction and exercise supervision to ensure that workers follow these plans and systems of work.

## The task

Handle and lay building blocks in accordance with the following:

- Plan to stack blocks close to where they will be used
- Stack on a level, firm base and wherever possible without double stacking of block packs
- Keep man handling of blocks to a minimum and use mechanical lifting and handling aids as much as possible, such as cranes, fork-lift trucks with pallets, and trolleys and telescopic handlers

(Note: ensure that the landing area of scaffolding is adequate for the temporary loading of blocks)

- Always use mechanical lifting and handling or operate a two person system for blocks weighing more than 20 kilograms
- Arrange work so that blocks can be handled close to the body. Access around all sides of the block stack enable the closest blocks to be selected
- Arrange work to avoid over reaching or twisting when handling blocks
- Ensure good grip and secure support placement in the work area when handling blocks

Arrange the work so that blocks only need to be handled up to shoulder height. Go higher by using staging, for instance. (**Note:** further protection against falls may be necessary if the effective height of guard-rails is reduced.) Particular care and attention is needed for higher risk block laying such as when head room is restricted, under soffits, or below working platform level.

## The work environment

Prepare road and hard standing first and before blocks are on site. In areas where blocks are carried or handled, keep the site clear of obstacles or tripping hazards, such as discarded block wrappings or stack ties. Uneven, slippery or unstable ground conditions increase the risk of injury. The blocks should be protected from the weather to avoid them getting wet and increasing in weight.

### Training

Workers should be given information and training on the systems of work procedures to be used on that site to ensure safe manual handling of blocks. Suitable training will also be necessary for designers, specifiers and those managing contracts.

### Personal protective equipment

When handling blocks the normal protective equipment needed for use on building sites should be provided by employers and worn by individual workers: in particular, safety helmets, safety footwear equipped with protective toe caps and suitable gloves.

### Wall ties

Serious injuries have occurred during block work when building double skin walls due to contact with the sharp ends and edges of some types of wall ties. The exposed sharp edges should be covered or safer wall ties used.

### References and reading list

*Manual Handling Guidance* L23 HMSO 1992 ISBN 0 11 886335 5

BS 6073: 1981 *Specification for pre-cast concrete masonry units*. British Standards Institution (BSI)

BS 3921: 1985 *Specification for clay bricks*. BSI

BS 5628: 1985 *Code of practice for use of masonry*. BSI

Contemporary Ergonomics 1989: *Block laying in the construction industry* Tracy MF and Gray MI Proceedings of the Ergonomics Society's 1989 Annual Conference: Ergonomics - *designing progress* Mesaw, ED, Taylor and Francis 1989 ISBN 085 066 484

This publication may be freely reproduced, except for advertising, endorsement or sale purposes. The information it contains is current at 6/93. Please acknowledge the source as HSE.

