



INTERVENTIONS

TO REDUCE BACK INJURIES IN MASONRY

Problem

- Bricklayers have the highest rate of back injuries with lost workdays among construction workers.



- The work performed by bricklayers is physically demanding due to the weight of materials handled, the use of their hands to install, position, move and manipulate materials and equipment, and their working conditions.
- Laying block creates risks for shoulder and low back pain and injuries due to:
 - ✓ block weight;
 - ✓ frequency of lifting materials and twisting;
 - ✓ height of work and materials; and
 - ✓ distance of work from workers.
- A study of ergonomic best practices in the masonry industry found that while products, equipment and work practices are available to reduce the rate of musculoskeletal disorders (MSDs) among masonry workers, they have not been widely adopted.

Solutions

The following are two of the “best practices” identified by masonry industry stakeholders to eliminate or greatly reduce the risks associated with laying block.

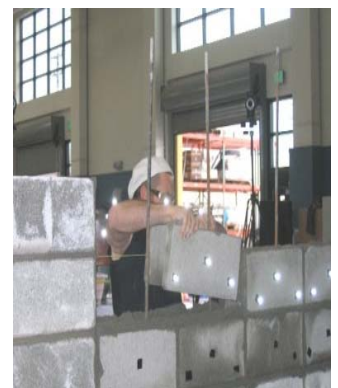
Studies and surveys of masonry contractors have found that use of these interventions can lead to productivity improvements, and a reduction in the number of neck and shoulder and injuries

1. H-Block – is an open ended concrete masonry unit (CMU) that allows bricklayers to place CMU block around rebar, pipes and other vertical obstructions (pictured below).

The H-block design eliminates the need to lift the CMU above shoulder level reducing the risk for back and shoulder injuries. Contractors who use H-Block often, particularly when there is frequent vertical rebar, noted an increase in productivity (pictured below).



Laying CMU over rebar



VS. Laying H-Block around rebar

2. Autoclaved Aerated Concrete (AAC)

– is a light-weight block. The standard size is 8”X8” X24” and weighs roughly 30lbs, but AAC is also available in a variety of other weights and sizes.



AAC is handled with two hands, and uses a thinbed mortar (ASTM C1660-09). Using AAC, or other lightweight block, reduces strain and loading on bricklayers’ backs, and lowers their risk of developing low back pain and injuries.

In addition, studies have found an increase in productivity when using lighter weight blocks.



Conclusions

There are many viable ergonomics solutions available to reduce shoulder and back injuries among bricklayers, but these innovations are underutilized. To increase their use, the industry must inform and involve the key players:

- **Designers, structural engineers and architects** who influence the building materials specified;
- **Masonry contractors** who make the equipment decisions, and can influence the choice of materials used; and
- **Workers** who play an active role in deciding how best to implement a new material, piece of equipment or work practice.

To Learn More Visit

Press Release: “Researchers Identify Incentives and Barriers to Adoption of Back-Saving Best Practices among Masonry Contractors”:

<http://www.cpw.com/whatsnew.html>

“Two-mason Lift Team” -- see workers in action at: www.elcosh.org/en/video/20/a000048/two-mason-lift-technique.html.

“CPWR Construction Solutions” a database of information on safety and health hazards and practical control measures to address those hazards: www.cpwconstructionolutions.com

The “Electronic Library of Construction Safety and Health” (eLCOSH) a collection of information on construction safety and health issues, including ergonomics:

www.elcosh.org