



## Memorandum

**Date:** September 22, 2017

**To:** Marley Hart, Executive Officer  
Occupational Safety and Health Standards Board  
2520 Venture Oaks Way, Suite 350  
Sacramento, CA 95833

**From:** Juliann Sum, Chief   
Division of Occupational Safety and Health

**Re:** Evaluation of Petition 566 from Mark Sale, B3Plastics.com,  
to add a new section to Title 8 requiring that all large-capacity disposable  
plastic bags be equipped with a secondary handle.

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### 1.0 Proposed Addition to Title 8

On June 22, 2017, the Division of Occupational Safety and Health (Cal/OSHA) received a petition from Mark Sale, Chief Executive Officer of B3 Plastics (petitioner). The petitioner proposes to add a new section to title 8 requiring that all disposable plastic bags, 33 to 60 gallons in capacity, be equipped with two carrying handles. The workplace use of bags without a secondary handling point in this size range would be prohibited.

The petitioner also proposes requiring employers to train affected employees to lift and carry two-handled bags using best practices. Additionally, the proposal would require the creation of educational materials to support the introduction of these bags.

### 2.0 Potential Hazards of Lifting Loaded Bags.

Janitorial, custodial and employees in other similar professions lift and carry large plastic bags filled with refuse or other materials. Such employees are exposed to ergonomic hazards such as prolonged awkward postures, repetitive motions, and heavy lifting. Additionally, the weight of the filled bags is unknown until after it is lifted. Lifting and carrying loaded bags may result in musculoskeletal injuries to the back, shoulders, arms and hands.

### 3.0 Existing Title 8 Requirements

Title 8, section 5110 requires employers to implement a program to minimize repetitive motion injuries (RMIs) after two or more employees who perform identical tasks are injured:

**§5110. Repetitive Motion Injuries.**

(a) Scope and application. This section shall apply to a job, process, or operation where a repetitive motion injury (RMI) has occurred to more than one employee under the following conditions:

(1) Work related causation. The repetitive motion injuries (RMIs) were predominantly caused (i.e. 50% or more) by a repetitive job, process, or operation;

(2) Relationship between RMIs at the workplace. The employees incurring the RMIs were performing a job process, or operation of identical work activity. Identical work activity means that the employees were performing the same repetitive motion task, such as but not limited to word processing, assembly or, loading;

(3) Medical requirements. The RMIs were musculoskeletal injuries that a licensed physician objectively identified and diagnosed; and

(4) Time requirements. The RMIs were reported by the employees to the employer in the last 12 months but not before July 3, 1997.

(b) Program designed to minimize RMIs. Every employer subject to this section shall establish and implement a program designed to minimize RMIs. The program shall include a worksite evaluation, control of exposures which have caused RMIs and training of employees.

(1) Worksite evaluation. Each job, process, or operation of identical work activity covered by this section or a representative number of such jobs, processes, or operations of identical work activities shall be evaluated for exposures which have caused RMIs.

(2) Control of exposures which have caused RMIs. Any exposures that have caused RMIs shall, in a timely manner, be corrected or if not capable of being corrected have the exposures minimized to the extent feasible. The employer shall consider engineering controls, such as work station redesign, adjustable fixtures or tool redesign, and administrative controls, such as job rotation, work pacing or work breaks.

(3) Training. Employees shall be provided training that includes an explanation of:

- (A) The employer's program;
- (B) The exposures which have been associated with RMIs;
- (C) The symptoms and consequences of injuries caused by repetitive motion;
- (D) The importance of reporting symptoms and injuries to the employer; and
- (E) Methods used by the employer to minimize RMIs.

(c) Satisfaction of an employer's obligation. Measures implemented by an employer under subsection (b)(1), (b)(2), or (b)(3) shall satisfy the employer's obligations under that respective subsection, unless it is shown that a measure known to but not taken by the employer is substantially certain to cause a greater reduction in such injuries and that this alternative measure would not impose additional unreasonable costs.

More broadly, title 8, section 3203 requires every employer to establish, implement and maintain an effective Injury and Illness Prevention Program (IIPP). The IIPP must include the following general elements which are pertinent to the recognition, evaluation, and control of acute and cumulative musculoskeletal hazards that are not repetitive motion injuries covered by section 5110:

**§3203. Injury and Illness Prevention Program.**

\* \* \* \* \*

(4) Include procedures for identifying and evaluating work place hazards including scheduled periodic inspections to identify unsafe conditions and work practices. Inspections shall be made to identify and evaluate hazards:

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(5) Include a procedure to investigate occupational injury or occupational illness.

(6) Include methods and/or procedures for correcting unsafe or unhealthy conditions, work practices and work procedures in a timely manner based on the severity of the hazard:

\* \* \* \* \*

(7) Provide training and instruction:

(A) When the program is first established;

\* \* \* \* \*

(B) To all new employees;

(C) To all employees given new job assignments for which training has not previously been received;

(D) Whenever new substances, processes, procedures or equipment are introduced to the workplace and represent a new hazard;

(E) Whenever the employer is made aware of a new or previously unrecognized hazard; and,

(F) For supervisors to familiarize themselves with the safety and health hazards to which employees under their immediate direction and control may be exposed.

#### **4.0 Analysis of Existing Title 8 Regulations**

Employers should identify and correct musculoskeletal hazards associated with handling large-capacity plastic bags under section 3203. However, due to the nonspecific language of the regulation, it is unlikely that most employers are implementing section 3203 to address ergonomic hazards associated with handling loaded bags.

Section 5110 has limited effectiveness for reducing musculoskeletal injuries associated with handling large-capacity bags. Section 5110 is based on responding to injuries that have already occurred rather than providing methods of injury prevention and addresses only repetitive motion injuries and not other musculoskeletal injuries such as strains or sprains that result from acute trauma.

#### **5.0 Federal OSHA Regulations**

Federal OSHA has no specific regulations regarding handling of plastic bags or prevention of musculoskeletal injuries. Federal OSHA enforces requirements to protect employees from ergonomic hazards through the issuance of ergonomic hazard alert letters or the issuance of citations for violation of the General Duty Clause of the Occupational Safety and Health Act.<sup>1</sup>

<sup>1</sup> <https://www.osha.gov/SLTC/ergonomics/faqs.html>

## 6.0 Petitioner's Basis for a New Regulation

The petitioner proposes a new section, applying to all workplaces in California, requiring that all disposable plastic bags, 33 to 60 gallons in capacity, be equipped with two carrying handles. Presumably, the positioning of the handles would be modeled after the Litelift™ bag manufactured by B3Plastics.com. These bags are equipped with a handle at the bottom of the bag; as the employee ties the top of the bag, it becomes the second handle. The petitioner contends that using both available handles for two-handed handling will result in fewer musculoskeletal injuries, compared to the handling of standard bags.

To support this contention the petitioner provides, in summary form, a risk assessment conducted by Elyce Anne Biddle, PhD, of West Virginia University and Georgi Popov, PhD, of University of Central Missouri. The risk assessment compares the handling of standard trash and linen bags with the handling of two-handed Litelift™ bags at a hospital. The risk of musculoskeletal injury is assessed using an observational risk assessment tool. The assessment found that using the two-handed bags resulted in an overall 37% reduction in assessed risk. Further information on the size, design, and execution of the study is not provided.

The petitioner also includes "Ergonomic Study of Custodial, Housekeeping, and Environmental Service Positions at the University of California, May 2011" <http://ucanr.edu/sites/ucehs/files/97141.pdf>. This UC system-wide study identified "trash/recycle handling" as the highest risk task among these employees. To address the hazards posed by these assignments together with linen handling, the working group proposed a number of interventions to reduce the risk of musculoskeletal injury, some involving bag handling, but none involving the use of two-handed bags.

The petitioner also provides a list of workers' compensation case summaries for injuries in California involving the lifting of filled trash bags.

## 7.0 Analysis of Proposal

This petition would affect a large and diverse group of employers, both public and private sector, which use large-capacity plastic bags in a number of operations. Many employers use such bags for waste collection, and many industries—such as recycling, trash collection, laundry operations, landscaping, medical facilities, construction, paper waste handling, and abatement operations—use them in large numbers as a central part of their material handling operations.

Cal/OSHA agrees that handling heavily-loaded plastic bags poses a risk of musculoskeletal injury. Cal/OSHA also agrees that using two-handed, large-capacity plastic bags may reduce the risk of musculoskeletal injuries in some applications, as the addition of handles provides more material handling options.<sup>2</sup>

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<sup>2</sup> "Ergonomic Guidelines for Material Handling", California Department of Industrial Relations, 2007. Available at [https://www.dir.ca.gov/dosh/dosh\\_publications/mmh.pdf](https://www.dir.ca.gov/dosh/dosh_publications/mmh.pdf)

However, the petition proposes that all employers must replace all plastic bags (with a 33 to 60 gallon capacity) with two-handed bags. The petition is both broad in scope, and highly prescriptive. Such a proposal should be appropriately supported by a significant body of evidence demonstrating risk reduction benefits in different applications.<sup>3</sup> However, the petitioner has provided very limited evidence.

The petitioner also provides no evidence for establishing a specific capacity (33 to 60 gallon) of the plastic bags included in the proposal, other than noting that these are typical bag sizes. However, 65 gallon plastic bags are common and plastic bags of up to 95 gallon capacity are readily available. These larger bags, when loaded, are likely to be heavier and as a result more likely to cause injury than the bag sizes included in the proposal. For such a proposal, there should be no upper limit on the size of manually handled bags.

## **8.0 Conclusion**

Cal/OSHA reviewed the petition requesting the addition of a new requirement within Title 8 to require all employers to use two-handed large-capacity (33 to 60 gallon) plastic bags .

Handling heavily-loaded bags poses a risk of musculoskeletal injury and using two-handed bags may reduce the risk of musculoskeletal injuries in some handling applications. In addition, sections 3203 and 5110 may not be effective in reducing injuries resulting from the handling of heavily-loaded bags. However, a performance-oriented standard that allows the employer to choose ergonomic interventions, or set of interventions is more appropriate than the proposed prescriptive requirement.

Cal/OSHA believes the petition should be denied.

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<sup>3</sup> See "How do we know our improvements are working?" page 50 in "Easy Ergonomics, A Practical Approach for Improving the Workplace", California Department of Industrial Relations, 1999. Available at [https://www.dir.ca.gov/dosh/dosh\\_publications/EasErg2.pdf](https://www.dir.ca.gov/dosh/dosh_publications/EasErg2.pdf)