

8/4/2008 - Credit Interpretation Request
Ergonomics Strategy

8/4/2008 - Ruling

Intent

To create and maintain a flexible ergonomic environment that properly accommodates building users and promotes healthy, comfortable and productive work.

Requirements

Develop and implement a comprehensive ergonomics strategy that will have a positive impact on human health and comfort when performing daily activity for at least 75% of Full Time Equivalent building users. This strategy must include the five components listed below.

1. Identify activities and building functions for which ergonomic enhancement (i.e., ergonomic strategies which exceed standard industry practice) is both possible and desirable through education and equipment. - Building users should be consulted on their preferences wherever possible.

NOTE: Project teams are encouraged to consult one or more of the existing ergonomics standards and guidelines when identifying ergonomic enhancement opportunities. For computer workstations, these include the BIFMA G1, the ANSI/HFES 100-2007, and CSA Z412-00.

The US Department of Labor Occupational Safety and Health Administration (OSHA) has developed ergonomic guidelines specifically for the following industries: Shipyards, Poultry, Retail Grocery Stores, Nursing Homes, and Meatpacking. OSHA also provides helpful information for many other industries in addition to those listed here (please see the Resources section below).

2. Define a set of performance goals and expectations for the ergonomics strategy that address productivity, comfort, and health. Develop a plan and design process to meet them. Provide procedures to track and report the results of the ergonomics strategy, ensure that the performance goals have been met, and identify areas of potential improvement. These should include the following actions:

- a) Make the performance goals and ergonomics plan available to building users
- b) Provide a feedback system to collect anonymous responses and respond to them. This should be informal and ongoing.
- c) Maintain ongoing building user access to appropriate ergonomics METWA's, furnishings, and accessories and education.
- d) Conduct a survey of user satisfaction. This should be more formal than the feedback system, and occur periodically. The survey must be collected from a representative sample of building occupants making up at least 30% of the total occupants.

3. Provide machine, equipment, tools, work-aids (METWA's), furnishings, and accessories that reduce the risk of work-related musculoskeletal disorders and are acceptable to a wide range of building users.

In a setting where building users that spend 50% or more of their time at computer workstations, the following four areas must be addressed: display, computer peripherals (keyboard/mouse), work surface, and chair. Computer workstations include areas in which workers interact with screens or monitors of any kind.

4. Provide ergonomics education to building users

Provide at least two opportunities for building users to understand and take advantage of ergonomic features in their environment. At least one of these opportunities must be interactive, and at least one must include an explanation of the provided METWA's and furnishings, preferably by the manufacturer. Post-education evaluations must be conducted. Education opportunities may include, but are not limited to:

- a) Participatory classroom sessions conducted by an ergonomics professional
- b) Access to literature on products and basic ergonomic knowledge relevant to the building user's tasks
- c) Repetitive or regularly-scheduled workstation evaluations
- d) Interactive internet-based products such as assessment and training tools
- e) Hands-on experiences, such as access to the showroom of an ergonomic furnishing supplier

Submittals

1. Provide a narrative that speaks to the requirements listed above. It should include:
 - Descriptions of the steps the project team has taken to identify ergonomic enhancement opportunities.
 - A sentence or two verifying that it is possible to exceed standard industry practices to achieve an ergonomically superior workplace.
 - Descriptions of the performance goals and expectations, and the steps the project team has taken to meet them
 - Descriptions of the procedures put into place to track and report the results of the ergonomics strategy. Describe how each of the required actions, listed in #5 of the requirements section, will be take place. Describe the collaboration with the management team that will carry out these procedures.
 - Description of how purchased METWA's and furnishings will benefit the building users as they conduct routine tasks and activities, the selection criteria used for choosing the products (i.e., how the safety and health of the building user was considered), and how the products will accommodate a wide range of size needs. Size needs can typically be met by buying products that come in 'families' (small, medium, large) or are highly adjustable.
 - Descriptions of two ergonomics education opportunities made available to building users, including the objectives and content.
2. Provide a list of purchased METWA's and furnishings that minimize the risk of work-related musculoskeletal disorders. Include cut sheets and manufacturer information for each.

For project certifying under LEED for Existing Buildings : Operations and Maintenance, at least one survey must be conducted during the performance period, and documented survey results and corrective actions to address issues identified through the surveys must also be provided.

Potential Technologies and Strategies

In general, consider METWA's and furnishings that will:

- reduce awkward, non-neutral work postures (e.g. neck, shoulders, hands-wrist, low back, elbows, lower extremities)
- reduce duration of sustained/static work postures (e.g. leaning forward, elevated arms, continuous grip)
- reduce grip and pinch forces associated with required tasks (e.g. correct tools)
- reduce the repetition and duration of tasks, especially those with non-neutral postures and/or higher forces
- reduce contact stress - resting soft tissues of the body on hard or sharp surfaces

To address the four required areas for building users that spend 50% or more of their time at computer workstations, consider the following strategies:

Display

Adjustability

- The display centered directly in front of the body.
- The top of the display screen placed no higher than the eyes.
- The ability to place the display screen 18 to 36 inches from the eyes
- Control over the tilt angle of the screen and its' position on the work surface
- The capability to position the display low enough to accommodate individuals with bi-focals or progressive addition lenses (PALs). This may be significantly lower than eye height

Reduced glare

- The use of technologies such as flat-screen or anti-glare devices
- The display positioned such that light sources will not create glare

Peripherals

- Paper documents placed on a document holder immediately to the left, right or below the display
- The keyboard positioned so the home row (row with F and J keys) is no higher than the elbow
- The ability to adjust the keyboard angle and set the slope of the keys flat, if so desired
- Enough room for the mouse or pointing device to be used adjacent to the keyboard (left, right or in front). If a separate adjustable keyboard support is used it must have space specifically designed for using a mouse or pointing device; preferably the mouse pad should have the capability to be positioned flat if the keyboard is tilted
- The arm used to control the pointing device supported, either on the work surface or armrest of the chair
- Ergonomically correct keyboards, mouse, phones and other supporting peripherals purchased when possible

Surface

- Enough work surface to properly support the computer and peripherals. Provide a surface with minimum dimensions of 28 inches wide by 24 inches deep

- Enough clear space under the surface to allow the legs and feet to be positioned in multiple postures
- Furnishings in multi-occupant workstations that allow the user to control surface and support heights, with surface height initially at proper seated elbow height. If workstations are single-occupant it is acceptable for facilities management to adjust the heights of surfaces

Chair

- Range of chair types or chair features that optimize employee fit and task requirements.
- Chairs with a wide range of adjustability

For building users that work in an industrial setting, consider:

- Height adjustable work-surfaces (e.g. desks, work benches, fume hoods)
- Pneumatic vs. electric vs. manual tools, material handling aids, such as lifts, height adjustable pallet jacks and hand trucks.
- Range of hand and power tools sizes and weights that improve employee fit and function while reducing ergonomic risk factors, for example: grip diameter, multi-finger activation and vibration isolation

For ergonomics education provided to building users, consider including information on:

- The possible causes of musculoskeletal discomfort
- Changing the workstation or work habits if discomfort is experienced during or after work
- Benefits of taking work breaks either through altering tasks performed or leaving their workstation
- Benefits of resting the eyes every 20 minutes
- How to properly position and adjust display height and angle, keyboard height and angle, mouse location, use of task light and chair adjustments
- Acceptable postures for the head, neck, shoulders, upper arms, wrists, back, legs and feet
- Benefits of regularly changing posture either through adjusting the furnishings or altering the tasks performed
- How to manage glare on the computer screen
- A point of contact if discomfort becomes frequent (multiple times per week)

References

Federal Occupational Safety and Health Administration
<http://www.osha.gov/SLTC/ergonomics/index.html>
 Human Factors and Ergonomic Society <http://www.hfes.org>
 Canadian Standards Association <http://www.csa.ca>
 The Business and Institutional Furniture Manufacturer's Association <http://www.bifma.org/>
 National Institute for Occupational Safety and Health
<http://www.cdc.gov/niosh/>

American Conference of Governmental Industrial Hygienists
<http://www.acgih.org/>

International Organization for Standardization www.iso.org please reference the ISO 9241 standard

The Hewlett Packard Safety and Comfort Guide
<http://www.hp.com/ergo/>

HealthyComputing.com
<http://www.healthycomputing.com/office/setup/>

'Effect of Office Ergonomics Intervention on Reducing Musculoskeletal Symptoms '
Amick B., Robertson, M., Derango, K., Bazzani, L., Moore, A., Rooney, T., Harrist, R., , Spine 2003, 23: 24, pp 2706-2711.

This study demonstrates that an office ergonomics intervention can reduce a workers perceived level of pain and increase their productivity.

'A Prospective Study of Computer Users: II. Postural Risk Factors for Musculoskeletal Symptoms and Disorders'

Marcus, M., Gerr, F., Monteilh, C., Ortiz, D., Gentry, E., Cohen, S., Edwards, A., Ensor, C., Kleinbaum, D., , American Journal of Industrial Medicine 2002, 41: pp 236-249

This landmark study reports on the body postures and work practices that increase or decrease the odds of computer users experiencing musculoskeletal discomfort and disorders.

Definitions

METWA : machine, equipment, tools, work-aids