

## Construction Solutions at a Glance - Wire Pulling

### Description of Issue:

Wire pulling can be a strenuous task. Maneuvering spools of wire and manually pulling wire can strain the body resulting in back and shoulder injuries.



### Related Injuries

- Low back strain
- Shoulder strain
- Neck strain
- Elbow strain

### Possible Solutions:

#### Handling Wire Spools

To avoid injury, follow safe work practices:

- Use a forklift or hoist to move feeder wire (i.e., 350 or 500 MCM)
- Use two-person team to move spools of MC wire (i.e., 1000 feet of 12-3)
- Use proper lifting techniques when handling wire spools (i.e., THHN)



#### Pulling Wire – by Hand

If pulling wire by hand, consider:

- Size of wire, number of wires
- Diameter of pipe, length of pipe
- Number of sweeps
- Lubricate the feeder end
- Don't cut and drag. Feed from a spool.
- Use a handle that grasps the fish-tape to improve grip during wire pulling.



#### Pulling Wire – Using a Wire Puller

- Use a mechanical puller whenever possible, i.e., chugger/tugger, pusher, winch, come-along.
- Pre-plan and communicate safe work practices for handling wire or operating a wire puller.
- **Know when a wire puller is needed and use it.**



#### • Guideline for developing *your* solution:

Use a wire puller whenever possible. Know when it's safe to pull wire by hand. Follow safe work practices when moving spools.

# Construction Solutions at a Glance

*BACK and SHOULDER injuries are two common cumulative injuries occurring in the Construction Industry. Due to the changing nature of a construction job site and the varied tasks performed by workers, it can be difficult to identify changes to reduce the risk of injury.*

**Solutions at a Glance** is targeted at common causes of back and shoulder injuries. If your operations involve "The Issue", then the Solutions at a Glance will help prevent worker injury.

## **Don't Become A Statistic**

Studies<sup>1</sup> have shown:

- Over 90% of construction workers surveyed reported experiencing symptoms of musculoskeletal pain or discomfort in the prior 12 months.
- Most prevalent symptoms are in the back, knees, neck and right shoulder.
- 25% of injuries in Construction are back injuries.
- Average cost of a back injury \$14-\$18,000. Average cost with surgery \$60,000.

<sup>1</sup> Holstrom (1993), Schneider and Susi (1994), Institute of Occupational Safety and Health (1997)

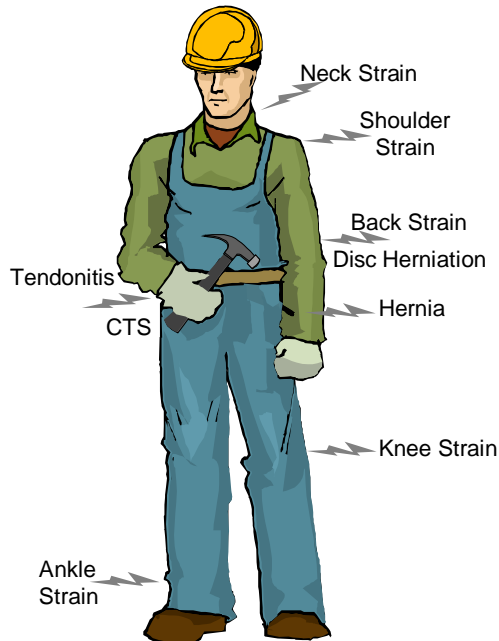
## **Risk Factors that contribute to Cumulative Injury**

Posture – bending over at the waist, twisting, raised elbows, reaching overhead, prolonged kneeling or stooping.

Force – lifting more than 50lbs, holding an object or tool in a stationary position, kneeling on a hard surface.

Repetitive Motion – hammering, drilling, turning a ratchet or driver.

Environment – Heat, cold, vibration.



## **Ways to Prevent Injury**

Engineering Controls – Eliminate the task causing the risk of injury such as:

- Minimize manual lifting. Use a lift.
- Minimize hand tools. Use power tools.
- Avoid hand shoveling. Hire experienced equipment operators.

Administrative Controls – Manage the exposure.

- Rotate employees through difficult tasks.
- Follow Safe Work Practices.
- Reward safe behaviors.
- Provide training

Behavioral Controls

- Life style choices
- Stretching / warm-up
- Personal fitness and overall wellness
- Diet
- Not smoking

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