

## VIDESIGN CASE STUDY

# ViBODY: DIESEL BATH BUCKET

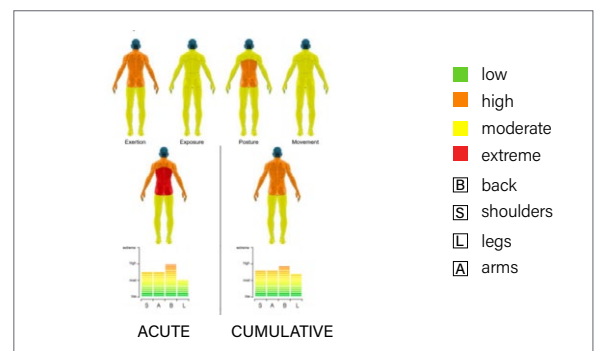
### BEFORE

The diesel bath bucket is used in roadworks to contain diesel so that workers may dip long-handled tools, such as a shovel or rake, in the diesel bath to clean asphalt debris. Crew members complained that the overall weight of the bath bucket, along with the awkwardness of two-person assist to transport it on and off the job truck, was discomforting to the low back, side waist and shoulder. The diesel bath was steel and weighed 33kg raw weight, 48kg projected calculations with 100mm depth diesel, and up to 55kg when aggregated by diesel debris.



### HEALTH ISSUES AND INITIAL ASSESSMENT

- » Extreme risk of acute injury to the back, high risk of acute injury to the upper body, moderate risk of acute injury to the lower extremity
- » High risk of cumulative injury to the back and upper body and moderate risk of cumulative injury to the lower extremities
- » Assessment per ErgoAnalyst [www.ergoanalyst.com](http://www.ergoanalyst.com)



### AFTER

#### EQUIPMENT AND TASK RE-DESIGN

A participative approach was undertaken and a new prototype bucket was developed that was of aluminium construction, raw weight of 17kg (almost half the original), improved diameter of handles for power grasp with more space between handle and bucket edge to permit glove wear if required, a change in lug attachments from peg to flat panel, a narrower width, a petrochemical foam insert sealed and locked lid, and a sump plug insert to permit easy cleaning. These changes reduced the overall weight, improved handling, enabled its potential transit on the side arm or back of screed walkway rather than the job truck, permitted quick and sturdy lug attachment, and facilitated easy cleaning.



#### POST EQUIPMENT RE-DESIGN

The new diesel bath bucket and subsequent task redesign resulted in low acute and cumulative risk for musculoskeletal disorder and injury.

	Risk Reductions	
	Acute	Cumulative
Shoulders	67%	38%
Arms	67%	38%
Back	70%	47%
Legs	50%	36%

Assessment per ErgoAnalyst [www.ergoanalyst.com](http://www.ergoanalyst.com)

