

Implementation of Ergonomic Assists for Heavy Lifting

Member company

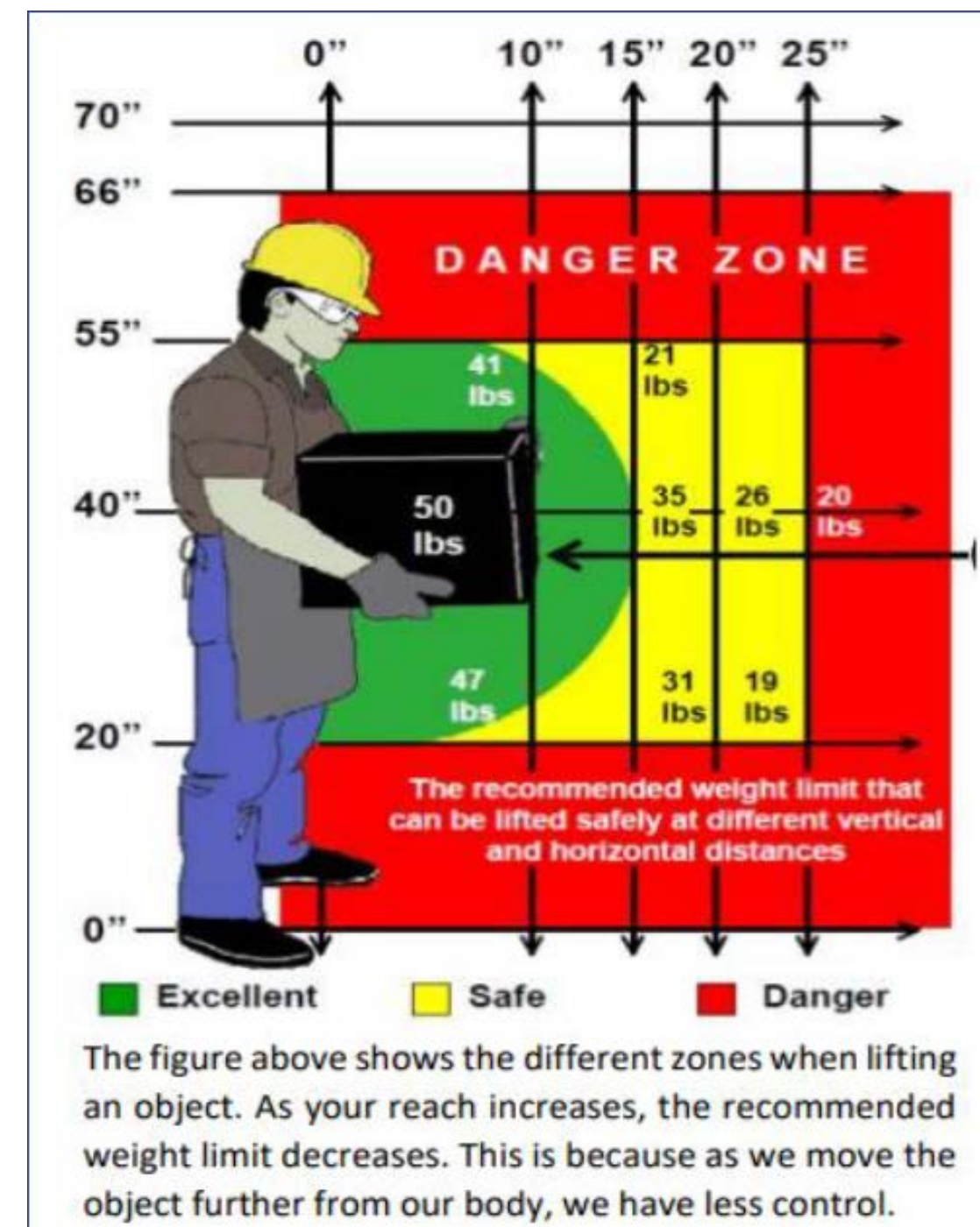
North American Stainless

The Challenge

Our Melt Shop had many areas where employees have to manually lift objects that are equal to or greater than 50 lbs or they were required to lift 25 lbs or less frequently. This presented an ergonomic hazard to employees that in the past resulted in back, shoulder and abdominal strains.

Why?

Due to the potential of increased injuries from ergonomic issues and the need to reduce the amount of weight employees were required to handle, we wanted to identify a way to either reduce the weight or find a more ergonomic way to ensure



that the weight employees were lifting was in the "green zone".

Needed action

First an assessment was completed of the tasks that required lifting heavy objects (anything over 25 lbs). Once this list was generated, the melt shop team worked with a vendor who specialized in material handling equipment. In addition, some areas were not able to use off the shelf equipment and those lifting tasks required the team to work with different designers and fabricators to redesign our material handling equipment to make it lighter. The MS team also worked with engineers to design a piece of equipment to make ladle shroud changes safer for the operators performing the tasks.

Action review

Specific: Identify task were employees were exposed to ergonomic hazards due to lifting heavy objects. Once the list is

identified, risk ranks the task that has the most exposure.

Measurable: Evaluate the reduction in the amount of weight the employees are required to lift when performing at task, should result in a lower amount of back, shoulder and abdominal strain injuries. (All items have a weight listed-purchased weight; items addressed were to focus on green zone lifting with pallet lifters or tool balancers to reduce the lifting by 90%).

Achievable: The objective was to focus on reduce floor to shoulder lifting.

Realistic: Action items were realistic in such that most were able to be purchased such as the lift tables, tool balancers and carts. Expanded the slab caster storage area to provide more work area and to accommodate the lift tables. Lift/dump tables are being utilized to transport and

add materials to the AOD chutes. The powder trays were redesigned using a lighter material, this change reduced the weight of the trays by 20 lbs. Tool balancers were added to reduce the weight of the cylinders employees must lift from 60 lbs to ~10 lbs push down force since they are hanging now; lifting from pallet lifters have bags of power or product always in the green zone.

Time-bound: 8 months for the above projects to be completed. Additional projects are planned for 2023 and 2024.

Horizontal Expansion Capability

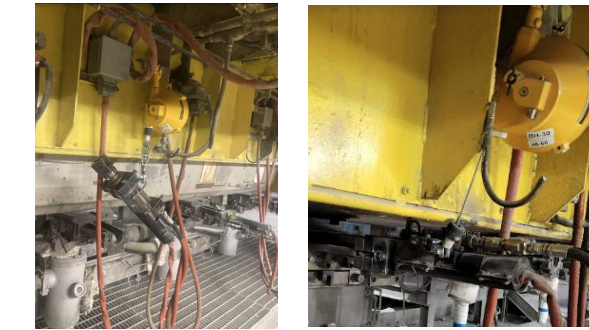
This equipment can be used in all mills and areas to assist employees in minimizing bending and lifting heavy objects.

Outcome

Since implementing some of these material handling tools, we have been able to reduce the number of strain and sprains in our Melt Shop area. We have made the material easier to access, lighter and reduced fatigue from the need to continuously bend over and lift heavy bags from the floor.

Tool Balancers

Tool balancers installed. Operators no longer lift the 60 lb cylinders. The tool balancers reduced the weight from 60 lbs to ~10 lbs push down force since they are hanging low.



Redesigned Powder Trays

New AI powder trays came in today. old trays had a weight of 30 lbs each. the new trays only weigh 10 lbs each



Pallet Lifters and Lift/Dump Tables

The pallet lifters and lift/dump tables help to keep material at waist level. Minimizing lifting from below the waist and keep heavier items in the green zone.



Winch

Added a winch to pull the chop block into place. Reducing the need to manually put the block into place.

