



UNC
ENVIRONMENT,
HEALTH & SAFETY

Job Safety Analysis

Safety Information for The University of North Carolina at Chapel Hill

All UNC Shops

Materials Handling of Heavy Objects



Title	Work Task	Hazards	Controls																																										
<p>Pre-Operation and Preparing for the Job</p>	<ol style="list-style-type: none"> How heavy/awkward is the load? Loads heavier than 50 pounds will increase the risk of injury. Are there adequate handholds on the load? Select the appropriate PPE needed to perform the job task. 	<ol style="list-style-type: none"> Slips, trips and falls Crush injury Lacerations and splinters Back injury 	<ol style="list-style-type: none"> Size up the load before lifting. Divide load if too heavy or ask for help/mechanical assistance. Wear gloves to assist with gripping the item. Wear steel toed shoes to protect the feet. <p>The recommended weight limit that can be lifted safely at different vertical and horizontal distances</p> <table border="1"> <caption>Recommended Weight Limits by Vertical and Horizontal Distance</caption> <thead> <tr> <th>Vertical Distance (inches)</th> <th>0" Horizontal</th> <th>10" Horizontal</th> <th>15" Horizontal</th> <th>20" Horizontal</th> <th>25" Horizontal</th> </tr> </thead> <tbody> <tr> <td>70"</td> <td>41 lbs</td> <td>21 lbs</td> <td>21 lbs</td> <td>21 lbs</td> <td>21 lbs</td> </tr> <tr> <td>66"</td> <td>41 lbs</td> <td>21 lbs</td> <td>21 lbs</td> <td>21 lbs</td> <td>21 lbs</td> </tr> <tr> <td>55"</td> <td>41 lbs</td> <td>21 lbs</td> <td>21 lbs</td> <td>21 lbs</td> <td>21 lbs</td> </tr> <tr> <td>40"</td> <td>47 lbs</td> <td>35 lbs</td> <td>26 lbs</td> <td>20 lbs</td> <td>20 lbs</td> </tr> <tr> <td>20"</td> <td>47 lbs</td> <td>31 lbs</td> <td>19 lbs</td> <td>19 lbs</td> <td>19 lbs</td> </tr> <tr> <td>0"</td> <td>47 lbs</td> <td>31 lbs</td> <td>19 lbs</td> <td>19 lbs</td> <td>19 lbs</td> </tr> </tbody> </table> <p> ■ Excellent ■ Safe ■ Danger </p>	Vertical Distance (inches)	0" Horizontal	10" Horizontal	15" Horizontal	20" Horizontal	25" Horizontal	70"	41 lbs	21 lbs	21 lbs	21 lbs	21 lbs	66"	41 lbs	21 lbs	21 lbs	21 lbs	21 lbs	55"	41 lbs	21 lbs	21 lbs	21 lbs	21 lbs	40"	47 lbs	35 lbs	26 lbs	20 lbs	20 lbs	20"	47 lbs	31 lbs	19 lbs	19 lbs	19 lbs	0"	47 lbs	31 lbs	19 lbs	19 lbs	19 lbs
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Work Task		Hazards	Controls
Site Preparation	<ol style="list-style-type: none"> 1. Check the route and point of placement. 2. Ensure properly lighting is available. 	<ol style="list-style-type: none"> 1. Slips, trips and falls 2. Potential employee injury due to lack of visual clearance 	<ol style="list-style-type: none"> 1. Inspect area for clearance and tripping hazards including wet surfaces and uneven terrain. 2. Make sure slippery surfaces due to exterior conditions such as snow and ice are cleared from the walking surface. 3. Prepare to install temporary lighting if required. 4. When feasible, use lift assists, forklift, dolly, cart, hand truck or hoist.
Work Task		Hazards	Controls
Performing the Lift	<ol style="list-style-type: none"> 1. Performing the lift 	<ol style="list-style-type: none"> 1. Potential employee injury 2. Back injury 	<ol style="list-style-type: none"> 1. Wear the appropriate PPE; as a minimum steel toed shoes, back brace and gloves are required. 2. Never lift more than 50 pounds without assistance. 3. Lifting process: <ol style="list-style-type: none"> a. Grip the object firmly. b. Stand close to object with feet solid and shoulder a width apart. Do not reach over an obstacle to lift the load. c. Squat down, bending your knees. Keep your back straight and upright. d. Grip the object firmly and pull it close to you. e. Tighten your abdomen. f. Lift with your legs in a gradual and smooth movement. Keep your back straight and keep the load close to our body. g. Do not twist your body while lifting. h. Do not lift objects over your head. i. In tight places, set the load down close to the final location and slide it into place. j. Never carry a load on one shoulder, under an arm or in one hand. This creates uneven pressure on the spine.

	Work Task	Hazards	Controls
Moving the Load	Moving the load	<ol style="list-style-type: none"> 1. Back injury. 2. Crush injury. 	Moving the load: <ol style="list-style-type: none"> a. Do not twist or turn the body; move our feet to turn. b. Hips, shoulders, toes, and knees should stay facing the same direction. c. Keep the load close to your body. d. If fatigued, set the load down and rest for a few minutes.
Lowering the Load	Lowering the load	<ol style="list-style-type: none"> 3. Back injury. 4. Crush injury 	Lowering the load: <ol style="list-style-type: none"> a. Reverse the order of the lifting. b. Bend the knees, not the hips. c. Keep your head up, your abdomen tight, and do not twist the body. d. Keep the load close to the body. e. Wait until the load is secure to release your handhold.
Training	Employees must receive training on this JSA, PPE, review lifting and material handling on the EHS website at http://ehs.unc.edu/workplace-safety/ergonomics/lifting .	Supervisor is responsible for ensuring the employee reviews the JSA and the EHS website guidelines. .	
Created	David Catalano, November 18, 2016		
Referenced Material	EHS Website; OSHA website on Materials Handling and Heavy Lifting; http://www.wilderness.net/safety/ ; http://ergo-plus.com/wp-content/uploads/WA-Handout-Proper-Lifting-Techniques.pdf ; http://www.webmd.com/back-pain/proper-lifting-technique		
Contact Info	For more information about this JSA and other JSAs, contact: <i>Department of Environment, Health and Safety</i> UNC-CH, 1120 Estes Drive Extension, Chapel Hill NC 27599 CB# 1650 (919) 962-5507 http://ehs.unc.edu		UNC ENVIRONMENT, HEALTH & SAFETY