|  |  |  |
| --- | --- | --- |
| \\cgi.int\mact\Company\Card_logo_CT-NO-tag-SM1111.gif | **ERGONOMIC RISK FACTOR (ERF) EVALUATION FORM FOR****GLASS HANDLING** | **Document Identification**  |
|  |
| Revision | SAFETY DEPARTMENT | Written by: Patrick Fritze |



|  |  |  |  |
| --- | --- | --- | --- |
| **Evaluation Date:** |  | **ID Number:** |  |
| **Department:** |  | **Location:** |  |
| **Task Description:** |  |
| **PART 1: BACK AND LOWER EXTREMITY** |
| **RISK FACTOR CATEGORY** | **RISK FACTORS** | **EXPOSURE**Is the risk factor present within the job or task? | **TIME** | **SCORE** |
| Less than 2 Hours | For 2-4 Hours | For 4-8 Hours | If more than 8hrs, add0.5 per hour |
| **Loading/Unloading Glass Above Shoulder** | 1. **Moderate:** Steady motion with regular pauses. (10-15 Loads/min) | * YES ☐ NO
 | 0 | 1 | 2 |  |  |
| 2. **Intensive:** Rapid steady motion without regular pauses.(30+ Loads/min) | * YES ☐ NO
 | 1 | 2 | 3 |  |  |
| **Loading/Unloading Glass Bending Torso** | 3. **Moderate:** Steady motion with regular pauses.(10-15 Loads/min) | * YES ☐ NO
 | 0 | 1 | 2 |  |  |
| 4. **Intensive:** Rapid steady motion without regular pauses.(30+ Loads/min) | * YES ☐ NO
 | 1 | 2 | 3 |  |  |
| 5. Backward Bending of Torso | * YES ☐ NO
 | 2 | 3 | 4 |  |  |
| **Loading/Unloading Glass Twisting Torso and/or Hips** | 6. **Moderate:** Steady motion with regular pauses.(10-15 Loads/min) | * YES ☐ NO
 | 0 | 1 | 2 |  |  |
| 7. **Intensive:** Rapid steady motion without regular pauses.(30+ Loads/min) | * YES ☐ NO
 | 1 | 2 | 3 |  |  |

|  |  |  |
| --- | --- | --- |
| \\cgi.int\mact\Company\Card_logo_CT-NO-tag-SM1111.gif | **ERGONOMIC RISK FACTOR (ERF) EVALUATION FORM FOR****GLASS HANDLING** | **Document Identification**  |
|  |
| Revision:  | SAFETY DEPARTMENT | Written by: Patrick Fritze |



|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Carrying Glass Lites Waist Level** | 8. Glass lites larger than 3 ft. X 4.5 ft. (Determine glass lite weight and go to Part 2) | * YES ☐ NO
 | 0 | 1 | 2 |  |  |
|  | Mils | Pounds Per Square Foot |  |
| 2.2 | 1.13085 |
| 3.0 | 1.51996 |
| 3.1 | 1.58585 |
| 3.9 | 1.96296 |
| 4.7 | 2.36591 |
| 5.7 | 2.87269 |
| **Carrying Glass Lites Overhead** | 9. Glass lites larger than 3 ft. X 4.5 ft. (Determine glass lite weight and go to Part 2) | * YES ☐ NO
 | 1 | 2 | 3 |  |  |
|  | Mils | Pounds Per Square Foot |  |
| 2.2 | 1.13085 |
| 3.0 | 1.51996 |
| 3.1 | 1.58585 |
| 3.9 | 1.96296 |
| 4.7 | 2.36591 |
| 5.7 | 2.87269 |
| **Carrying Gates Above Shoulder Level** | 10. **Moderate:** Intermittent with regular pauses. *Gates Weights:*C 60 = 48 lbs.C 84 = 96 lbs. | * YES ☐ NO
 | 2 | 3 | 4 |  |  |
| 11. **Intensive:**Continuous without regular pauses.*Gates Weights*: C 60 = 48 lbs.C 84 = 96 lbs. | * YES ☐ NO
 | 3 | 4 | 5 |  |  |
| **Pushing/Pulling (e.g.****Glass Carts)** | **12. Moderate:** Carts with initial push/pull force< 70 lbs. (Male)< 50 lbs. (Female) & Sustained push/pull force< 50 lbs. (Male)< 30 lbs. (Female) | * YES ☐ NO
 | 1 | 2 | 3 |  |  |
| **13. Intensive:**Carts with initial push/pull force> 70 lbs. (Male) | * YES ☐ NO
 | 2 | 3 | 4 |  |  |

|  |  |  |
| --- | --- | --- |
| \\cgi.int\mact\Company\Card_logo_CT-NO-tag-SM1111.gif | **ERGONOMIC RISK FACTOR (ERF) EVALUATION FORM FOR****GLASS HANDLING** | **Document Identification**  |
|  |
| Revision:  | SAFETY DEPARTMENT | Written by: Patrick Fritze |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | > 50 lbs. (Female) & Sustained push/pull force> 50 lbs. (Male)> 30 lbs. (Female) |  |  |  |  |  |  |
| **Seaming Glass Above Waist Level** | 14. **Moderate:** Steady motion with regular pauses. | * YES ☐ NO
 | 0 | 1 | 2 |  |  |
| 15. **Intensive:** Rapid steady motion without regular pauses. | * YES ☐ NO
 | 2 | 3 | 4 |  |  |
| **Seaming Glass Bending Back Forward** | 16. **Moderate:** Steady motion with regular pauses. | * YES ☐ NO
 | 0 | 1 | 2 |  |  |
| 17. **Intensive:** Rapid steady motion without regular pauses. | * YES ☐ NO
 | 1 | 2 | 3 |  |  |
| **Seaming Glass Twisting Torso and Hips** | 18. **Moderate:** Steady motion with regular pauses. | * YES ☐ NO
 | 0 | 1 | 2 |  |  |
| 19. **Intensive:** Rapid steady motion without regular pauses. | * YES ☐ NO
 | 1 | 2 | 3 |  |  |
| **Pushing/Pulling Glass** | 20. **Moderate:** Steady motion with regular pauses.**Note:** *Annealed glass shall not be pulled or pushed to the body.* | * YES ☐ NO
 | 0 | 1 | 2 |  |  |
| 21. **Intensive:** Rapid steady motion without regular pauses. | * YES ☐ NO
 | 1 | 2 | 3 |  |  |

|  |  |  |
| --- | --- | --- |
| \\cgi.int\mact\Company\Card_logo_CT-NO-tag-SM1111.gif | **ERGONOMIC RISK FACTOR (ERF) EVALUATION FORM FOR****GLASS HANDLING** | **Document Identification**  |
|  |
|  | SAFETY DEPARTMENT | Written by: Patrick Fritze |



|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Shoveling Cullet** | 22. **Moderate:** Intermittent motion (10-15 scoops per minute) with regular pauses (every 10-15 min). ***Note:*** *Determine weight of loaded shovel for Part 2.* | * YES ☐ NO
 | 0 | 1 | 2 |  |  |
| 23. **Intensive:**Continuous motion (> 20 scoops per minute) without regular pauses. | * YES ☐ NO
 | 2 | 3 | 4 |  |  |
| **Hand Force (Repetitive or Static)** | 24. Squeezing Hard with the Hand in a Power Grip. | * YES ☐ NO
 | 0 | 1 | 2 |  |  |
| 25. Pinch More than 2 pounds. | * YES ☐ NO
 | 1 | 2 | 3 |  |  |
| **Awkward Postures & Rotation** | 26. Neck: Twist/Bend (twisting neck > 20˚, bending neck forward > 20˚ or back < 5˚) | * YES ☐ NO
 | 0 | 1 | 2 |  |  |
| 27. Shoulder:Unsupported arm or elbow above mid- torso height | * YES ☐ NO
 | 1 | 2 | 3 |  |  |
| 28. Rapid Forearm Rotation | * YES ☐ NO
 | 0 | 1 | 2 |  |  |
| 29. Rapid wrist/arm rotation | * YES ☐ NO
 | 0 | 1 | 2 |  |  |

|  |  |  |
| --- | --- | --- |
| \\cgi.int\mact\Company\Card_logo_CT-NO-tag-SM1111.gif | **ERGONOMIC RISK FACTOR (ERF) EVALUATION FORM FOR****GLASS HANDLING** | **Document Identification**  |
|  |
| Revision:  | SAFETY DEPARTMENT | Written by: Patrick Fritze |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Wrist Bending** | 30. Wrist: Bend or Deviate | * YES ☐ NO
 | 1 | 2 | 3 |  |  |
| **Contact Stress** | 31. Hard/Sharp objects Press into Skin | * YES ☐ NO
 | 1 | 2 | 3 |  |  |
| 32. Using the Palm of the Hand or Wrist as a Hammer | * YES ☐ NO
 | 2 | 3 | 4 |  |  |
| 33. Using the Knee as a Kicker | * YES ☐ NO
 | 2 | 3 | 4 |  |  |
| **Static Posture** | 34. Prolonged Sitting Without Adequate Back Support | * YES ☐ NO
 | 1 | 2 | 3 |  |  |
| 35. Standing Stationary or Inadequate Foot Support While Seated | * YES ☐ NO
 | 1 | 2 | 3 |  |  |

|  |  |  |
| --- | --- | --- |
| \\cgi.int\mact\Company\Card_logo_CT-NO-tag-SM1111.gif | **ERGONOMIC RISK FACTOR (ERF) EVALUATION FORM FOR****GLASS HANDLING** | **Document Identification**  |
|  |
| Revision:  | SAFETY DEPARTMENT | Written by: Patrick Fritze |



|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Foot/Knee/Ankle Action** | 36. Foot action (pedal), Standing Stationary with Inadequate Foot Support, Balancing | * YES ☐ NO
 | 1 | 2 | 3 |  |  |
| 37. Kneeling/Squatting | * YES ☐ NO
 | 1 | 2 | 3 |  |  |
| 38. Repetitive Ankle Extension/Flexion | * YES ☐ NO
 | 1 | 2 | 3 |  |  |
| **Extreme Back Bending** | 39. Picking objects from the floor. | * YES ☐ NO
 | 2 | 3 | 4 |  |  |
| **Extreme Lifting** | 40. Lifting objects overhead. | * YES ☐ NO
 | 2 | 3 | 4 |  |  |
| **Environment** | 41. Lighting (poor illumination or glare) | * YES ☐ NO
 | 0 | 0 | 1 |  |  |
| 42. AdverseTemperatures | * YES ☐ NO
 | 0 | 1 | 2 |  |  |
| **PART 1. SCORE:** |  |

|  |  |  |
| --- | --- | --- |
| \\cgi.int\mact\Company\Card_logo_CT-NO-tag-SM1111.gif | **ERGONOMIC RISK FACTOR (ERF) EVALUATION FORM FOR****GLASS HANDLING** |  |
|  |
| Revision | SAFETY DEPARTMENT | Written by: Patrick Fritze |

|  |
| --- |
| **PART 2: MANUAL HANDLING CHECKLIST** |
| **45(a) STEP 1** | **NEAR LIFT** | **MIDDLE LIFT** | **FAR LIFT** |
| **Determine If the Lift is Near, Middle, or Far (Body to Hands)*** Use an average horizontal distance if a lift is made every 10 minutes or less.
* Use the largest horizontal distance if more than 10 minutes pass between lifts.
 |  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| **43(b). STEP II:** | **NEAR LIFT** | **MIDDLE LIFT** | **FAR LIFT** |
| **Estimate the Weight Lifted (Pounds)*** Use an average weight if a lift is made every 10 minutes or less.
* Use the heaviest weight if more than 10 min. pass between lifts.
* Enter 0 in the total score if the weight is 10lbs or less.
 | **DANGER ZONE** | More than 51 lbs.**5\* points** | **DANGER ZONE** | More than 35 lbs.**6 points** | **DANGER ZONE** | More than 28 lbs.**6 points** |
| **CAUTION ZONE** | 17 to 51 lbs.**3 points** | **CAUTION ZONE** | 12 to 35 lbs.**3 points** | **CAUTION ZONE** | 10 to 28 lbs.**3 points** |
| **SAFE ZONE** | Less than 17 lbs.**0 points** | **SAFE ZONE** | Less than 12 lbs.**0 points** | **SAFE ZONE** | Less than 10 lbs.**0 points** |
| **\* For lifts performed more than 15 times per shift, use 6 points.** |
| **PART 2. SCORE** |  |

|  |
| --- |
| **PART 3: EVALUATION RESULTS AND RECOMMENDATIONS (PART 1+2)** |
| **(BACK AND LOWER EXTREMITY) PART 1 TOTAL:** |  |
| **(MANUAL HANDLING) PART 2TOTAL:** |  |
| **(PART 1 + 2) OVERALL SCORE:** |  |
| **Result Explanation:**An overall score greater than or equal to 7 indicates that the job is hazardous to the employee and requires prompt attention. Individual Risk Factor scores greater than 2 indicate the risk factor should be addressed. |

|  |  |  |
| --- | --- | --- |
| \\cgi.int\mact\Company\Card_logo_CT-NO-tag-SM1111.gif | **ERGONOMIC RISK FACTOR (ERF) EVALUATION FORM FOR****GLASS HANDLING** | **Document Identification**  |
|  |
| Revision:  | SAFETY DEPARTMENT | Written by: Patrick Fritze |

**PART 4: RECOMMENDATIONS:**

**ERF EVALUATION PERFORMED BY:**

**SIGNATURE:**

**Instructions:**

1. Select one activity from your workstation (e.g. loading glass to a conveyor)
2. Evaluate body movements that are applicable to the specific task in PART 1. Do not combine with other tasks.
3. For all the applicable movements (checked “YES”) and determine the speed and time length of the task. (Note: Speed may vary depending on the operation).
4. No score is required if checked “NO”.
5. Add the totals for Part 1.
6. Determine the weight of the glass lite or object and size for PART 2.
7. Add PART 1 and PART 2.
8. A score equal or greater than 7 indicates a hazardous task and immediate attention should be exercised.
9. Movements with individual scores greater than 2 should also be addressed.
10. Recommendations should follow appropriate administrative controls (e.g. job rotation, rest periods, etc.) or engineering controls (e.g. lifting devices, height adjustment, machine modification, etc.).