### PAINTING

<table>
<thead>
<tr>
<th>No.</th>
<th>Hazards</th>
<th>Possible Control Measures</th>
<th>Useful Links/Tips</th>
</tr>
</thead>
</table>
| 1.1 | High pressure of water jet resulting in eye and other injuries | • Adopt safe working procedures  
• Provide and use adequate and appropriate PPE (Safety goggles, hard hats and safety shoes) | See Appendix Figure 1                     |
| 1.2 | Electrocution                                | • Use double insulated cables  
• Conduct daily checks on electrical wiring  
• Hang cables and prohibit cables lying on the ground or floor  
• Provide and use approved residual current circuit breaker | See Appendix Figure 2                     |
| 1.3 | Stuck in between mechanical parts of machine | • Construct safety guards for machines with rotating or projecting parts  
• Conduct regular maintenance for machines | }
### 1.4 Strains and fatigue
- Implement job rotation
- Use appropriate mechanical aids and tools
- Conduct training on proper lifting techniques

### 2. Painting (general)

#### 2.1 Contact with paints
- Provide and use chemical resistant gloves
- Review and communicate material safety data sheet to workers involved in painting works

#### 2.2 Inhalation of toxic fumes
- Provide and use suitable respirators
- Conduct regular air monitoring
- Cap containers when paints are not in use

#### 2.3 Fire or explosion
- Prohibit hot work in nearby areas
- Remove all ignition sources
- Avoid storing paints under high temperature conditions
- Cap containers when paints are not in use
- Display warning sign of 'No smoking'
- Provide fire extinguishers at work area

#### See Appendix Figure 3
#### See Appendix Figure 4
#### See Appendix Figure 5

### 3. Spray painting

#### 3.1 Exposure to spray mist
- Review and adhere to the recommendations in the material safety data sheet
### 3.2 Fire or explosion
- Provide and use appropriate respirator
- Remove all ignition sources
- Display warning sign of 'No smoking'
- Prohibit hot work in nearby areas
- Have fire extinguisher ready for fire-fighting

See Appendix Figure 6
See Appendix Figure 7

### 4. Roller painting

| 4.1 Strains and fatigue | • Use appropriate mechanical aids and tools  
|                         | • Conduct training on proper lifting methods  
|                         | • Implement job rotation  |
| 4.2 Exposure to paint fumes | • Ensure adequate ventilation during painting  
|                         | • Use suitable respirators  |
| 4.3 Slip and fall | • Use non-drip roller  
|                         | • Practise good housekeeping  
|                         | • Provide and use safety shoes  |

### 5. Painting in confined spaces

| 5.1 Toxic fumes from epoxy paint, solvent, thinner, etc | • Provide and use suitable respirators  
|                                                       | • Ventilate the confined space  
|                                                       | • Conduct air monitoring  
|                                                       | • Implement confined space entry permit system  |
- Check for oxygen levels before work
- Provide and use portable gas detectors
- Provide and use safety life lines
- Display warning sign of spray painting during drying process
- Disallow other work during painting
- Prohibit anyone entering the confined space during drying period
- Require constant supervision

See Appendix Figure 8

See Appendix Figure 9

See Appendix Figure 10

<table>
<thead>
<tr>
<th>5.2 Fire and explosion</th>
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<tbody>
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<td>• Display warning sign of 'No smoking'</td>
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<tr>
<td>• Prohibit hot work in nearby areas</td>
<td></td>
</tr>
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</tr>
<tr>
<td>• Provide suitable fire extinguishers in work area</td>
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</tbody>
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1 This document can be retrieved from [http://www.mom.gov.sg/building_capabilities.html](http://www.mom.gov.sg/building_capabilities.html) under Managing Workplace Hazards ➔ Guidelines Factsheets and Circulars ➔ Safety

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<table>
<thead>
<tr>
<th><strong>Figure 1:</strong> Safety helmet, safety boots and safety goggles</th>
<th><strong>Figure 2:</strong> Residual current circuit breaker</th>
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<tbody>
<tr>
<td><img src="image1" alt="Safety Helmet, Safety Boots, Safety Goggles" /></td>
<td><img src="image2" alt="Residual Current Circuit Breaker" /></td>
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<table>
<thead>
<tr>
<th><strong>Figure 3:</strong> Chemical resistant gloves</th>
<th><strong>Figure 4:</strong> Respirators</th>
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<tr>
<td><img src="image3" alt="Chemical Resistant Gloves" /></td>
<td><img src="image4" alt="Respirators" /></td>
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**Return to Section 2.2**
<table>
<thead>
<tr>
<th>Figure 5: Regular air monitoring</th>
<th>Figure 6: “No Smoking” warning sign</th>
</tr>
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<tbody>
<tr>
<td><img src="image" alt="Regular air monitoring" /></td>
<td><img src="image" alt="“No Smoking” warning sign" /></td>
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<tr>
<td>Return to Section 2.2</td>
<td>Return to Section 3.2</td>
</tr>
<tr>
<td>Figure 7: Prohibition of hot work</td>
<td>Figure 8: Portable gas detector</td>
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<td><img src="image" alt="Portable gas detector" /></td>
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<tr>
<td>Return to Section 3.2</td>
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**Contents of this resource are originated from the Risk Assessment workshops organised by the Singapore Contractors Association Limited with the support of the Occupational Safety and Health Division of the Ministry of Manpower.**

This material is not intended to be an exhaustive list of hazards and control measures for the above-mentioned activities. Companies are to conduct risk assessment on the work activities specific to their workplaces by identifying the hazards, evaluating the risk and determining suitable control measures where appropriate. References should be made to the relevant regulations and code of practices when in doubt.